Part No. P0986988
November 2002

Using Optivity Telephony Manager Release 2.0x

NORTEL NETWORKS™

Copyright © 2002 Nortel Networks

The information in this document is subject to change without notice. The statements, configurations, technical data, and recommendations in this document are believed to be accurate and reliable, but are presented without express or implied warranty. Users must take full responsibility for their applications of any products specified in this document. The information in this document is proprietary to Nortel Networks Inc.

The software described in this document is furnished under a license agreement and may be used only in accordance with the terms of that license. The software license agreement is included in this document.

Nortel Networks, the Nortel Networks logo, the Globemark, Unified Networks, SL-1, Meridian 1, Succession Communication Server for Enterprise 1000, and Optivity are trademarks of Nortel Networks.

Microsoft, MS, MS-DOS, Windows, and Windows NT are registered trademarks of Microsoft Corporation.

Adobe and Acrobat Reader are trademarks of Adobe Systems Incorporated.

The asterisk after a name denotes a trademarked item.

Restricted rights legend

Use, duplication, or disclosure by the United States Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013.

Notwithstanding any other license agreement that may pertain to, or accompany the delivery of, this computer software, the rights of the United States Government regarding its use, reproduction, and disclosure are as set forth in the Commercial Computer Software-Restricted Rights clause at FAR 52.227-19.

Statement of conditions

In the interest of improving internal design, operational function, and/or reliability, Nortel Networks Inc. reserves the right to make changes to the products described in this document without notice.

Nortel Networks Inc. does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein.

Portions of the code in this software product may be Copyright © 1988, Regents of the University of California. All rights reserved. Redistribution and use in source and binary forms of such portions are permitted, provided that the above copyright notice and this paragraph are duplicated in all such forms and that any documentation, advertising materials, and other materials related to such distribution and use acknowledge that such portions of the software were developed by the University of California, Berkeley. The name of the University may not be used to endorse or promote products derived from such portions of the software without specific prior written permission.

SUCH PORTIONS OF THE SOFTWARE ARE PROVIDED “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In addition, the program and information contained herein are licensed only pursuant to a license agreement that contains restrictions on use and disclosure (that may incorporate by reference certain limitations and notices imposed by third parties).

Nortel Networks Inc. Optivity* Telephony Manager software license agreement

NOTICE: Please carefully read this license agreement before copying or using the accompanying Optivity Telephony Manager software or installing the hardware unit with pre-enabled Optivity Telephony Manager software (each of which is referred to as "Software" in this Agreement). BY COPYING OR USING THE SOFTWARE, YOU ACCEPT ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT. THE TERMS EXPRESSED IN THIS AGREEMENT ARE THE ONLY TERMS UNDER WHICH NORTEL NETWORKS WILL PERMIT YOU TO USE THE SOFTWARE. If you do not accept these terms and conditions, return the product, unused and in the original shipping container, within 30 days of purchase to obtain a credit for the full purchase price.

1. License grant. Nortel Networks Inc. ("Nortel Networks") grants the end user of the Software ("Licensee") a personal, nonexclusive license: a) to use the Software either on a single computer or, if applicable, on a single authorized device identified by host ID; b) to copy the Software solely for backup purposes in support of authorized use of the Software; and c) to use and copy the associated user manual solely in support of authorized use of the Software by Licensee. This license applies to the Software only and does not extend to Nortel Networks Agent software or other Nortel Networks software products. Nortel Networks Agent software or other Nortel Networks software products are licensed for use under the terms of the applicable Nortel Networks Inc. Software License Agreement that accompanies such software and upon payment by the end user of the applicable license fees for such software.

2. Restrictions on use; reservation of rights. The Software and user manuals are protected under copyright laws. Nortel Networks and/or its licensors retain all title and ownership in both the Software and user manuals, including any revisions made by Nortel Networks or its licensors. The copyright notice must be reproduced and included with any copy of any portion of the Software or user manuals. Licensee may not modify, translate, decompile, disassemble, use for any competitive analysis, reverse engineer, distribute, or create derivative works from the Software or user manuals or any copy, in whole or in part. Except as expressly provided in this Agreement, Licensee may not copy or transfer the Software or user manuals, in whole or in part. The Software and user manuals embody Nortel Networks' and its licensors' confidential and proprietary intellectual property. Licensee shall not disclose to any third party the Software, or any information about the operation, design, performance, or implementation of the Software and user manuals that is confidential to Nortel Networks and its licensors; however, Licensee may grant permission to its consultants, subcontractors, and agents to use the Software at Licensee's facility, provided they have agreed to use the Software only in accordance with the terms of this license.

3. Limited warranty. Nortel Networks warrants each item of Software, as delivered by Nortel Networks and properly installed and operated on Nortel Networks hardware or other equipment it is originally licensed for, to function substantially as described in its accompanying user manual during its warranty period, which begins on the date Software is first shipped to Licensee. If any item of Software fails to so function during its warranty period, as the sole remedy Nortel Networks will at its discretion provide a suitable fix, patch, or workaround for the problem that may be included in a future Software release. Nortel Networks further warrants to Licensee that the media on which the Software is provided will be free from defects in materials and workmanship under normal use for a period of 90 days from the date the Software is first shipped to Licensee. Nortel Networks will replace defective media at no charge if it is returned to Nortel Networks during the warranty period along with proof of the date of shipment. This warranty does not apply if the media has been damaged as a result of accident, misuse, or abuse. The Licensee assumes all responsibility for selection of the Software to achieve Licensee's intended results and for the installation, use, and results obtained from the Software. Nortel Networks does not warrant a) that the functions contained in the software will meet the Licensee's requirements, b) that the Software will operate in the hardware or software combinations that the Licensee may select, c) that the operation of the Software will be uninterrupted or error free, or d) that all defects in the operation of the Software will be corrected. Nortel Networks is not obligated to remedy any Software defect that cannot be reproduced with the latest Software release. These warranties do not apply to the Software if it has been (i) altered, except by Nortel Networks or in accordance with its instructions; (ii) used in conjunction with another vendor's product, resulting in the defect; or (iii) damaged by improper environment, abuse, misuse, accident, or negligence. THE FOREGOING WARRANTIES AND LIMITATIONS ARE EXCLUSIVE REMEDIES AND ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Licensee is responsible for the security of its

own data and information and for maintaining adequate procedures apart from the Software to reconstruct lost or altered files, data, or programs.

4. Limitation of liability. IN NO EVENT WILL NORTEL NETWORKS OR ITS LICENSORS BE LIABLE FOR ANY COST OF SUBSTITUTE PROCUREMENT; SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES; OR ANY DAMAGES RESULTING FROM INACCURATE OR LOST DATA OR LOSS OF USE OR PROFITS ARISING OUT OF OR IN CONNECTION WITH THE PERFORMANCE OF THE SOFTWARE, EVEN IF NORTEL NETWORKS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL THE LIABILITY OF NORTEL NETWORKS RELATING TO THE SOFTWARE OR THIS AGREEMENT EXCEED THE PRICE PAID TO NORTEL NETWORKS FOR THE SOFTWARE LICENSE.

5. Government licensees. This provision applies to all Software and documentation acquired directly or indirectly by or on behalf of the United States Government. The Software and documentation are commercial products, licensed on the open market at market prices, and were developed entirely at private expense and without the use of any U.S. Government funds. The license to the U.S. Government is granted only with restricted rights, and use, duplication, or disclosure by the U.S. Government is subject to the restrictions set forth in subparagraph (c)(1) of the Commercial Computer Software—Restricted Rights clause of FAR 52.227-19 and the limitations set out in this license for civilian agencies, and subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause of DFARS 252.227-7013, for agencies of the Department of Defense or their successors, whichever is applicable.

6. Use of software in the European Community. This provision applies to all Software acquired for use within the European Community. If Licensee uses the Software within a country in the European Community, the Software Directive enacted by the Council of European Communities Directive dated 14 May, 1991, will apply to the examination of the Software to facilitate interoperability. Licensee agrees to notify Nortel Networks of any such intended examination of the Software and may procure support and assistance from Nortel Networks.

7. Term and termination. This license is effective until terminated; however, all of the restrictions with respect to Nortel Networks' copyright in the Software and user manuals will cease being effective at the date of expiration of the Nortel Networks copyright; those restrictions relating to use and disclosure of Nortel Networks' confidential information shall continue in effect. Licensee may terminate this license at any time. The license will automatically terminate if Licensee fails to comply with any of the terms and conditions of the license. Upon termination for any reason, Licensee will immediately destroy or return to Nortel Networks the Software, user manuals, and all copies. Nortel Networks is not liable to Licensee for damages in any form solely by reason of the termination of this license.

8. Export and re-export. Licensee agrees not to export, directly or indirectly, the Software or related technical data or information without first obtaining any required export licenses or other governmental approvals. Without limiting the foregoing, Licensee, on behalf of itself and its subsidiaries and affiliates, agrees that it will not, without first obtaining all export licenses and approvals required by the U.S. Government: (i) export, re-export, transfer, or divert any such Software or technical data, or any direct product thereof, to any country to which such exports or re-exports are restricted or embargoed under United States export control laws and regulations, or to any national or resident of such restricted or embargoed countries; or (ii) provide the Software or related technical data or information to any military end user or for any military end use, including the design, development, or production of any chemical, nuclear, or biological weapons.

9. General. If any provision of this Agreement is held to be invalid or unenforceable by a court of competent jurisdiction, the remainder of the provisions of this Agreement shall remain in full force and effect. This Agreement will be governed by the laws of the state of California.

Should you have any questions concerning this Agreement, contact Nortel Networks Inc., 2375 N. Glenville Dr., Richardson, TX 75082.

LICENSEE ACKNOWLEDGES THAT LICENSEE HAS READ THIS AGREEMENT, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS. LICENSEE FURTHER AGREES THAT THIS AGREEMENT IS THE ENTIRE AND EXCLUSIVE AGREEMENT BETWEEN NORTEL NETWORKS AND LICENSEE, WHICH SUPERSEDES ALL PRIOR ORAL AND WRITTEN AGREEMENTS AND COMMUNICATIONS BETWEEN THE PARTIES PERTAINING TO THE SUBJECT MATTER OF THIS AGREEMENT. NO DIFFERENT OR ADDITIONAL TERMS WILL BE ENFORCEABLE AGAINST NORTEL NETWORKS UNLESS NORTEL NETWORKS GIVES ITS EXPRESS WRITTEN CONSENT, INCLUDING AN EXPRESS WAIVER OF THE TERMS OF THIS AGREEMENT.

Revision History

Date Revised	Version	Reason for revision
June 2001	1.00	Initial Standard release coincided with the introduction of OTM 1.1.
January 2002	2.00	Upissued to coincide with the introduction of OTM Release 1.2.
November 2002	3.00	Upissued to coincide with the introduction of OTM Release 2.0.

Contents

Figures

Tables

Preface

Optivity* Telephony Manager (OTM) is designed for managers of telecommunications equipment and authorized Nortel Networks* distributors. OTM provides a single point of access and control for Nortel Networks Meridian 1* and Succession Communication Server for Enterprise (CSE) 1000* system management. OTM uses IP technology to target the following key customer values:

- Single point of connectivity to Meridian 1 systems, Succession CSE 1000 systems, and related devices
- Data collection for traffic and billing records
- Collection, processing, distribution, and notification for alarms and events
- Data entry and propagation (employee names and telephone numbers shared in multiple databases)
- Web-based management applications

Before you begin

This guide is intended for Meridian 1 and Succession CSE 1000 system administrators using a Microsoft Windows*-based PC for management activities. This guide assumes that you have the following background:

- Working knowledge of the Windows NT*/Windows 2000 Server operating system
- Familiarity with Meridian 1 and Succession CSE 1000 system management activities
- Knowledge of general telecommunications concepts
- Experience with windowing systems or graphical user interfaces (GUIs)

Text conventions

This guide uses the following text conventions:

angle brackets (< >)	Indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when entering the command. Example: If the command syntax is `chg suppress_alarm <n>` where *n* is 0 = all, 1 = minor, 2 = major, 3 = critical, you enter `chg suppress_alarm 3` to suppress all alarms except critical alarms.
`bold Courier text`	Indicates command names and options and text that you need to enter. Example: Enter **`prt open_alarm`**.
italic text	Indicates new terms, book titles, and variables in command syntax descriptions. Where a variable is two or more words, the words are connected by an underscore. Example: For installation information, refer to *Installing and Configuring Optivity Telephony Manager for Meridian 1*.
`plain Courier text`	Indicates command syntax and system output, such as prompts and system messages. Example: `Open Alarm destination #0 is 47.82.40.237`
separator (>)	Shows menu paths. Example: Select Utilities > Backup in the Navigator window.

Acronyms

This guide uses the following acronyms:

ASP	active server page
CLI	command line interface

DBA	Data Buffering and Access
DN	directory number
GUI	graphical user interface
IP	Internet Protocol
LAN	local area network
LDAP	lightweight directory access protocol
MAT	Meridian Administration Tools
NMS	network management system
OTM	Optivity Telephony Manager
PTY	pseudo-TTY (network port)
RAS	remote access server
TBS	Telecom Billing System
TN	terminal number
TTY	teletype (serial port)
uid	unique identifier in LDAP synchronization

Related publications

For more information about using Optivity Telephony Manager and associated applications, refer to the following publications:

- *Installing and Configuring Optivity Telephony Manager* (553-3001-230)

  Provides information on how to install and configure the Optivity Telephony Manager software.

- *Using Optivity Telephony Manager Telemanagement Applications* (553-3001-331)

  Provides information on the following optional telemanagement applications: Telecom Billing System (TBS), TBS Web Reporting, General Cost Allocation System (GCAS), Consolidated Reporting System (CRS), and Consolidated Call Cost Reports (CCCR).

- *Meridian Internet Telephony Gateway (ITG) Trunk 1.0/Basic Per-Trunk Signaling* (553-3001-116)

  Describes configuration and maintenance of the 8-port ITG trunk card.

- *Meridian Internet Telephony Gateway (ITG) Trunk 2.0/ISDN Signaling Link (ISL)* (553-3001-202)

  Describes configuration and maintenance of the 24-port ITG trunk card. This card appears to the Meridian 1 switch as a 24-port trunk card with ISDN Signaling Link (ISL) and D-channel signaling.

- *Meridian Internet Telephony Gateway (ITG) Line 1.0/IP Telecommuter* (553-3001-119)

  Describes configuration and maintenance of the ITG line card for IP Telecommuter.

- *Meridian 1 and Succession Communication Server for Enterprise 1000 IP Line: Description, Installation, and Operation* (553-3001-204)

  Describes configuration and maintenance of the ITG gateway card for the Meridian Internet Telephones, also referred to as IP telephones.

- *Meridian/Succession Companion DECT: Overview* (553-3601-103)

  Provides an overview of OTM for MDECT systems.

- *Meridian/Succession Companion DECT: Installation Guide* (553-3601-203)

  Provides instructions on how to install the OTM DECT application and how to configure the MDECT system on the OTM Server.

- *Meridian/Succession Companion DECT: Operation Administration and Maintenance* (553-3601-301)

  Provides detailed instructions on using OTM to administer and maintain the MDECT system.

- *M3900 Series Meridian Digital Telephones: Description, Installation, and Administration* (553-3001-216)

  Describes M3900 series telephones and related features. The M3904 and M3905 telephones provide access to an OTM-generated Corporate Directory.

- *Internet Terminals Guide* (553-3001-217)

  Describes the i2002, i2004, and i2050 telephones and their features.

- *Software Features Guide* (553-3001-306)

Describes features associated with the Meridian 1 and Succession CSE 1000 systems. For each feature, information is provided on feature implementation, feature operation, and interaction between features.

- *Software Input/Output Guide: Administration* (553-3001-311)

  Describes the prompts and responses for the Meridian 1 and Succession CSE 1000 systems' command line interface (CLI). This guide includes information on overlay programs that are classified as administration overlays.

- *Software Input/Output Guide: System Messages* (553-3001-411)

  Describes the meaning of the messages generated by the Meridian 1 and Succession CSE 1000 systems.

- *Software Input/Output Guide: Maintenance* (553-3001-511)

  Describes the prompts and responses for the Meridian 1 and Succession CSE 1000 systems' command line interface (CLI). This guide includes information on overlay programs that are classified as maintenance overlays.

- *Option 11C Planning and Installation* (553-3021-210)

  Provides information on the Survivable IP Expansion (SIPE) feature.

- *Succession Communication Server for Enterprise 1000 Planning and Installation Guide* (553-3023-210)

  Provides information on the Survivable IP Expansion (SIPE) feature for Succession CSE 1000 systems.

You can print selected technical manuals and release notes free, directly from the Internet. Go to the www.nortelnetworks.com/documentation URL. Find the product for which you need documentation. Then locate the specific category and model or version for your hardware or software product. Use Adobe Acrobat Reader to open the manuals and release notes, search for the sections you need, and print them on most standard printers. Go to Adobe* at the www.adobe.com URL to download a free copy of the Adobe Acrobat Reader*.

You can purchase selected documentation sets, CDs, and technical publications through the Internet at the www.nortelnetworks.com URL. From the main page, select Customer Support > Documentation.

How to get help

If you purchased a service contract for your Nortel Networks product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller for assistance.

Chapter 1
Overview of Optivity Telephony Manager

OTM contains all of the Meridian Administration Tools (MAT) Microsoft Windows applications. In addition, OTM introduces new Web applications and integration with Optivity NMS.

OTM provides value by acting as a management server. It collects and processes alarms from multiple devices (Meridian 1, Succession CSE 1000, Call Pilot, ITG, and so on); collects call accounting and traffic data from multiple Meridian 1 and Succession CSE 1000 systems; and acts as a terminal server for multiple devices. One OTM Windows NT® Server replaces multiple buffer boxes, access modems, and terminal servers.

You may also install OTM in a stand-alone configuration, without client support or Web applications, on a PC running Windows 98, Windows NT version 4.0, or Windows 2000. System access is provided through the OTM Windows System Terminal, and security management is provided through the OTM User Administration.

What's new in OTM Release 2.0

The following content is being introduced with OTM Release 2.0:

- New Network View
- Concurrency with Succession CSE 1000 Release 2.0
- Security enhancements
- Web Station scheduler with telephone courtesy change
- Multi-system billing reports for both Meridian 1 and Succession CSE 1000

Technical documentation

OTM technical documentation consists of an installation and configuration guide and two user guides. Table 1 outlines the contents of the various guides in the OTM documentation suite. The entries in the second and third columns indicate whether the information in that section applies to:

- OTM Windows Navigator, which is the Microsoft Windows-based interface
- OTM Web Navigator, which is the Web-based (http) interface
- Both interfaces

Table 1 OTM 2.0 technical documentation content

Book title	Microsoft Windows	Web	Contents
Installing and Configuring Optivity Telephony Manager			**Initial installation tasks:**
	X		OTM requirements
	X		Installing a server
	X		Installing a client
	X		OTM server software installation
	X		Serial numbers and keycodes
	X		Java runtime environment (JRE)
	X		OTM client software installation
	X		Upgrades, migration, licensing
	X		Installing Web Help
			Initial configuration tasks:
	X		Modem configuration for OTM applications in Microsoft Windows
	X		Logging in, changing the default password
	X		Testing the connection
			Setting up OTM applications
	X		Adding sites, systems, Windows users
	X	X	Adding Web users
	X		Setting up the Meridian 1
	X		Setting up the Virtual Terminal Service
	X		Setting up data buffering and access (DBA)
	X		Setting up the LDAP server
	X		Setting up Alarm Management
	X		Performing an OTM backup
	X		Installing a Web browser client
	X		Integrating OTM with Optivity NMS
	X		Integrating OTM with HP OpenView
			Windows NT reference
	X		Installing Windows NT
	X		Configuring a Windows NT server
	X		Windows NT security guidelines
			Uninstalling OTM
			OTM engineering guidelines

Table 1 OTM 2.0 technical documentation content (continued)

Book title	Microsoft Windows	Web	Contents
Using Optivity Telephony Manager	X	X	**Overview of Optivity Telephony Manager**
			Common Services
			Services
	X		OTM Windows Navigator
	X	X	Security management
	X	X	Configuring sites, systems, and users
	X		Maintenance tasks
	X		Regional Settings
	X		Access Server
	X		Directory Services
	X		Corporate Directory
	X		Event log viewer
	X		System Terminal
	X		System Monitor
	X		Data Buffering and Access
			Utilities
	X		Scheduler
	X		Import and Export Utilities
	X		Database Compact and Repair
	X		Backup and Restore
	X		LDAP Synchronization
	X		Electronic Data Dump
			Web services
	X	X	OTM Web Navigator
		X	Equipment
		X	Web Station
		X	Web Administration
		X	Customizable Web Help
	X	X	Web Virtual Terminal Service
	X	X	Web System Terminal
		X	Web Desktop Services
			(continued)

Table 1 OTM 2.0 technical documentation content (continued)

Book title	Microsoft Windows	Web	Contents
Using Optivity Telephony Manager *(continued)*			***(continued)***
			Station Administration
			Getting started
	X		Retrieving and updating system data
			General information
	X		Station data and synchronization considerations
	X		Station administration windows and menus
	X		Accessing station data
	X		Adding and deleting stations
	X		Swapping TNs
	X		Managing station data
	X		Designation strips (DNs)
	X		Station data validation
	X		Directory Service
	X		Architecture, links, integration
	X		Excess DN report
	X		Station and directory synchronization
			Station Administration features
	X		Call Party Name Display (CPND)
	X		List manager
	X		Voice mailbox
	X		Global update
	X		**Communicating with the PBX**
	X		**Conversion utility**
			Reporting:
	X		Generating reports
	X		OTM file viewer
	X		Designing report forms
	X		**Power user tool**
			(continued)

Table 1 OTM 2.0 technical documentation content (continued)

Book title	Microsoft Windows	Web	Contents
Using Optivity Telephony Manager *(continued)*			***(continued)***
			Alarm Management
	X		**Alarm management configurations**
	X	X	**Web-based alarm management**
			Windows-based alarm management
	X		Alarm banner
	X		Event monitor window
			Alarm notification
	X		Notification process
	X		Setting up alarm notification
	X		Events processing
	X		Scripting
	X		Script wizard and sample scripts
			Maintenance Applications
	X	X	**Launching maintenance windows applications**
			Maintenance pages/windows
	X	X	Core CPU
	X	X	I/O Ports
	X	X	Network Groups
	X	X	Network Loops
	X	X	PE Shelves
	X	X	PE Cards
	X	X	PE Units
	X	X	B- and D-channels
	X		**Inventory reporting**
			Traffic Analysis
	X		**Configuration**
	X		**User Reference**
			ESN Analysis and Reporting Tool
	X		**Synchronizing the OTM ESN database and the Meridian 1 switch**
	X		**Update the V&H table**
	X		**Printing ESN reports**
	X		**ESN Setup wizard**

Table 1 OTM 2.0 technical documentation content (continued)

Book title	Microsoft Windows	Web	Contents
Using Optivity Telephony Manager Telemanagement Applications	X	X	**Overview of Telemanagement Applications**
			Telecom Billing System (TBS)
	X		Configuration
	X		Operating Procedures
	X		User Reference
			Consolidated Call Cost Reports (CCCR)
	X		Operating Procedures
	X		User Reference
			Telecom Billing System (TBS) Web Reporting
	X	X	Setting up TBS Web Reporting
	X	X	User Reference
			Call Tracking
	X		Collecting data from a Meridian 1 switch
	X		Call Tracking menus
	X		Sample setup for real time monitoring
			General Cost Allocation System (GCAS)
	X		Operating Procedures
	X		User Reference
			Consolidated Reporting System (CRS)
	X		Operating Procedures
	X		User Reference

Overview of OTM applications

OTM includes the following Windows-based applications:

- Enhanced Station Administration/CPND
- Directory Service with LDAP support
- Telecom Billing System (TBS), which replaced MAT Call Accounting
- Data Buffering and Access (DBA)
- Call Tracking
- General Cost Allocation System (GCAS)
- Consolidated Reporting System (CRS)

- Consolidated Call Cost Reports (CCCR)

OTM Windows-based applications can operate in either server or stand-alone mode on a PC running Windows NT version 4.0 Server or Windows 2000 Server. You can also install OTM as a stand-alone on the Windows 98 operating system.

OTM can also operate in client mode on a PC running Windows 98, Windows NT 4.0 Workstation, or Windows 2000 Professional. For more information about configuring OTM in stand-alone mode, refer to "Stand-alone configuration" on page 56. For more information about configuring OTM in client mode, refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230).

The following MAT 6.6 applications are supported in OTM:

- Windows Navigator
- List Manager
- ESN
- Traffic Analysis module
- Call Tracking application
- Corporate Directory
- IP Telephony Gateway (ITG) applications
- Inventory
- Maintenance Windows
- Alarm Notification

OTM provides the following Web-based (http) applications:

- OTM Web Navigator
- Virtual Terminal Service (command line interface from the Web)
- Web System Terminal
- Web Station Administration
- Web Alarm Browser
- Maintenance Pages
- Customizable Web Help
- Web User Access and Session Monitor pages

- Desktop Services that provide Web pages to display directory and telephone configuration. You may permit end users to modify the configuration of their telephones using Desktop Services.

Comparison of OTM Windows and OTM Web interfaces

You can access OTM using either OTM Windows Navigator or OTM Web Navigator. You can perform many basic configuration and management tasks through either interface. This section describes the similarities and differences between the OTM Windows Navigator and the OTM Web Navigator.

OTM Windows Navigator

OTM Windows Navigator gives you access to OTM-managed systems. Through menus and folders, you can do the following:

- View, configure and administer sites, systems and users.
- Configure and administer OTM services.
- Launch utility applications.
- Display licensing and release information for all installed OTM applications.

The OTM Windows Navigator displays sites and systems in a tree structure. When you choose a system on the tree, you can launch a System window to configure the system and launch management applications. The OTM System Navigator window displays all configured systems. When you select a system, the list of available applications appears in the window. The OTM Windows Navigator system access depends on the privileges assigned to your OTM User Group. For a list of available functions and applications, refer to Table 2.

OTM Web Navigator

The OTM Web Navigator provides a number of the same functions available in the OTM Windows Navigator. The OTM Web Navigator allows you to view sites, systems, and users. The Web Navigator also allows you to configure and administer OTM users. OTM Web security meets the same criteria as provided by Windows NT and Windows 2000.

One of the advantages of the OTM Web interface is the ability for users to configure their telephones through their Web browser. As an administrator, using Web Desktop Services, you can also block end user access to configuration windows. A particularly useful Desktop Services feature is the ability to customize the Help files to suit specific customer needs.

Table 2 compares the functions and applications available in the OTM Windows Navigator with those available in the OTM Web Navigator.

Table 2 Comparing Windows and Web Navigators

OTM Windows Navigator	**OTM Web Navigator**
Common Services	
Ability to launch other applications Scheduler Backup & Restore (OTM Data) Import/Export PC Event Log Compact and Repair License management Data Buffering and Access Trap Master Trap Server Related utilities	Ability to link to other Web sites Event Service System Sanity Terminal Server Trap Master Trap Server
Fault Management	
PC Event Log and Viewer Event Monitor for Meridian 1 and Succession CSE 1000 Alarm Banner Alarm notification by: • pager • e-mail • file • SNMP trap forwarder	Alarm Browser (consolidated systems) • view alarms from core Meridian 1, Succession CSE 1000, Meridian Mail, ITG, Symposium Call Center Server, and Call Pilot.

Table 2 Comparing Windows and Web Navigators (continued)

OTM Windows Navigator	OTM Web Navigator
Configuration Management	
Station Administration Directory Editor LDAP Query utility LDAP Synchronization Corporate Directory Maintenance Windows • real time status of PBX hardware • sorting by type or status • enable, disable, test, and so on ESN ITG Configuration DBA Backup DBA Restore List Manager Inventory	Web Station Administration • Telephone management • Directory Update • Scheduling • End User Access Maintenance Pages • real time status of PBX hardware • sorting by type or status • enable, disable, test, and so on Customizable Web Help LDAP Synchronization Report Directory Update (Global Change) Desktop User Access • finding telephones • viewing set configuration • changing keys and features
Accounting Management	
Telecom Billing System (TBS) • analyzes CDR from multiple switches • predefined reports • customization of reports General Cost Allocation System (GCAS) Consolidated Reporting System (CRS) Consolidated Call Cost Reports (CCCR) Call Tracking	Telecom Billing Services (TBS) Web Reporting
Performance Management	
Traffic Analysis Call Tracking	
Security Management	
OTM User Template Administration OTM User Management	Web Navigator Access Security (Local OTM Server) Web Desktop Access Security using Local OTM Server, WinNT Domain, or LDAP account OTM User Management Web Session Monitor

Table 2 Comparing Windows and Web Navigators (continued)

OTM Windows Navigator	OTM Web Navigator
System Access	
Windows System Terminal	Web System Terminal
User Applications	
Windows Help	Web Help End User Desktop Services • viewing set configuration • changing keys and features Telecom Billing System (TBS) Web Reports

Common Services

OTM Common Services are similar to MAT Common Services. Most have been enhanced for OTM; several are new. OTM Common services are:

- OTM Windows Navigator and OTM System windows
- OTM Windows-based System Terminal
- New Import and Export Utilities
- New Compact and Repair Utility
- Enhanced 32-bit Scheduler
- Enhanced PC Event Log Viewer
- Enhanced Database Buffering and Access (DBA)
- OTM user administration
- OTM Backup and Restore
- New System Monitor on the OTM server
- License management
- NT Client capability

OTM Server

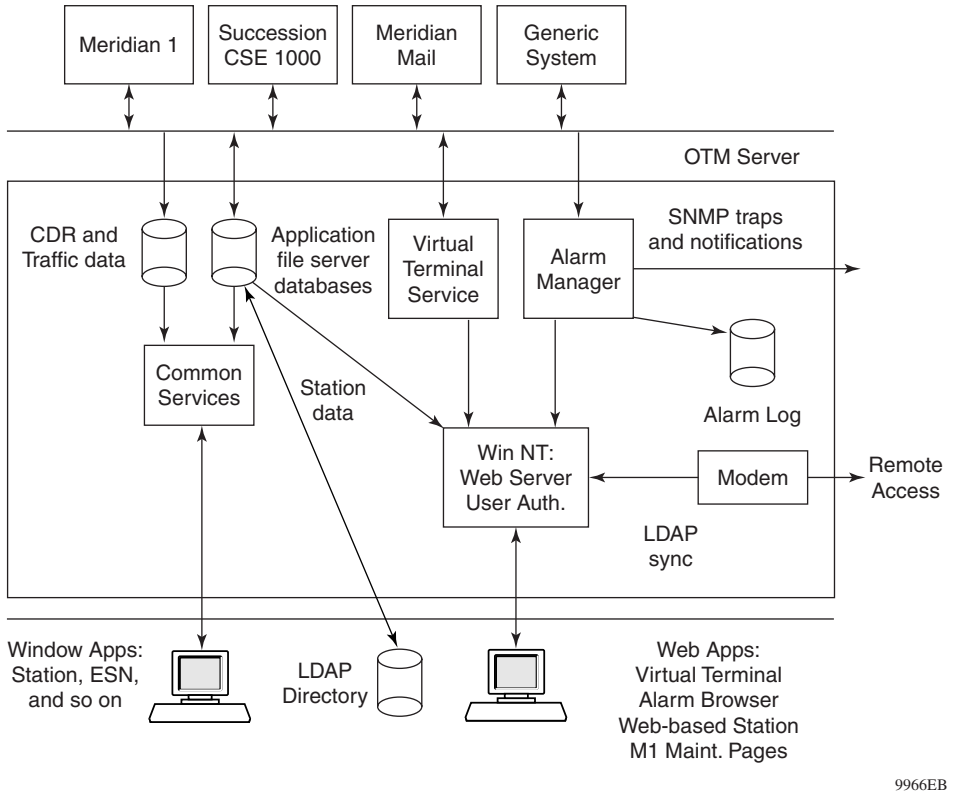
The OTM Server runs on a Windows NT 4.0 Server or Windows 2000 Server. It performs the following functions:

- Virtual Terminal Service providing single-point of connectivity to the Meridian 1 or Succession CSE 1000 system and related devices
- Common Services and file server for OTM client applications
- Data Buffering and Access (DBA) collects and stores CDR and Traffic data
- Web Server for OTM Web-based applications
- Alarm and event collection, processing, distribution, and notification
- Run other management applications, such as Call Pilot

Note: Do not install OTM on a Microsoft Windows NT or Windows 2000 server that is configured as a primary domain controller (PDC).

Figure 1 is a block diagram illustrating the functions provided by the OTM Server.

Figure 1 OTM Server block diagram



Configurations

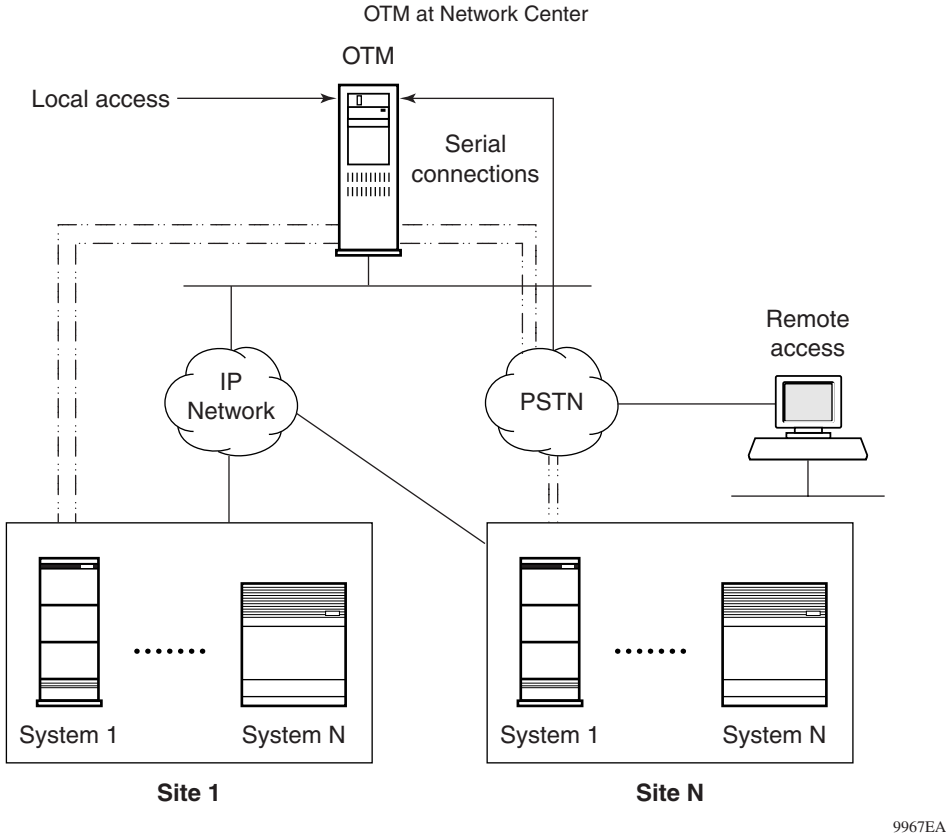
Network model

OTM can manage voice switches in both a centralized and local manner.

Centralized management is geared towards network management centers, whereas local management is geared toward site level telecom managers.

Figure 2 shows an example of OTM in a centralized configuration.

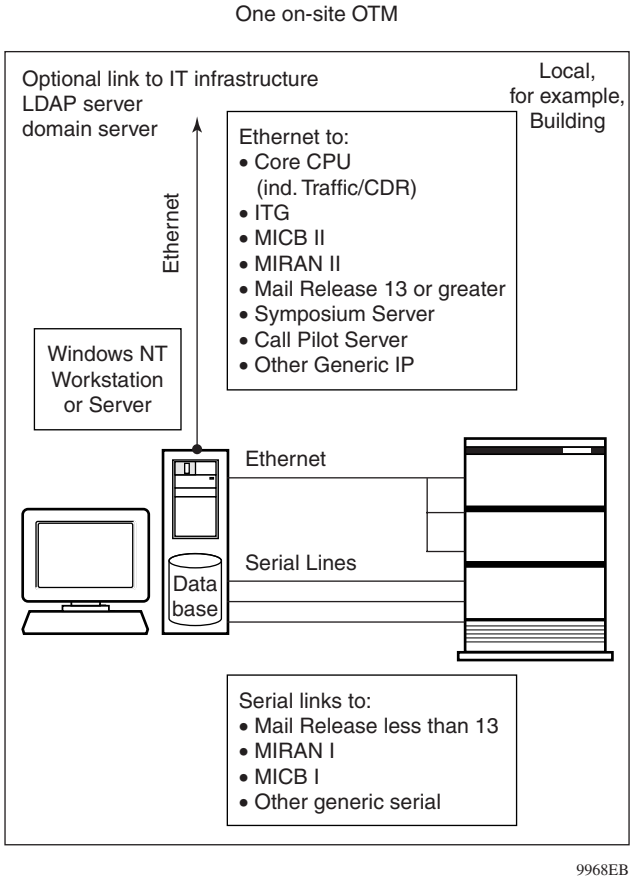
Figure 2 OTM Network model



Site model

Figure 3 shows an example of a single OTM as a Site Manager supporting multiple voice devices in a single site. You can run Client/Server acting applications (Web or Windows) on the OTM server, or remotely via IP or dial-in connections.

Figure 3 OTM Site model



Stand-alone configuration

OTM may be installed in a stand-alone configuration. The stand-alone configuration can run on a Windows 98, Windows NT 4.0 Workstation, or Windows 2000 Professional PC. An OTM system configured as a stand-alone does not allow for remote clients; however, it does allow for access to Web-based applications. Windows System Terminal provides system access, and OTM User Template Administration provides Security Management.

Common Services available in a stand-alone configuration include:

- Windows Navigator
- Scheduler
- Backup and Restore (OTM data)
- Import/Export
- Compact/Repair

In the area of fault management, when installed in a stand-alone configuration, OTM provides a subset of the functionality available when installed in a network. You can set up the stand-alone configuration to forward alarms to Optivity NMS. An enhanced PC Event Log and viewer is available along with an Event Monitor, which allows you to view Meridian 1 and Succession CSE 1000 system alarms. Alarm Banner is included for core alarms, and Alarm Notification permits handling, filtering and forwarding (including forwarding to numeric and alphanumeric pagers).

Call accounting is accomplished using the Telecom Billing System (TBS). Data Buffering and Access (DBA) provides real time collection of Call Detail Recording (CDR) and Traffic data via IP. Traffic and TBS use data collected by DBA or via a buffer box to generate reports.

The stand-alone configuration supports the following configuration management and maintenance activities:

- System Window
- Data Buffering and Access (DBA)
- Station Administration with Directory and Lightweight Directory Access Protocol (LDAP) support
- Maintenance Windows
- Electronic Switched Network (ESN) Analysis and Reporting Tool
- Internet Telephony Gateway (ITG) configuration
- DBA Backup and Restore (X11 database)
- List Manager
- Inventory

Connectivity through OTM

The Virtual Terminal Service provides the connection between your browser and a device or system. You can launch the OTM Web Navigator from a Web browser, such as Internet Explorer or Netscape Navigator, and select a Meridian 1 or Succession CSE 1000 system or other device to view.

You can access systems and devices using OTM's Web System Terminal window from within your Web browser, without referring to IP addresses, serial port settings, or URLs. That information is retained on the OTM Server.

If you are not using Access Server, uncheck the "Launch Automatically" check box. This allows the server COM port to be used by another application, if needed. For information on Access Server, see "Access Server" on page 153.

Caution: For security reasons, Nortel Networks strongly recommends that you configure RAS to allow the incoming call to Access the Computer Only. This setting allows access to the RAS server, but not to the rest of your network.

Figure 4 shows the various ways you can use OTM to connect to network devices and systems, such as the Meridian 1 and Succession CSE 1000. The figure legend, which follows the figure, describes these connections in more detail.

Figure 4 OTM connectivity

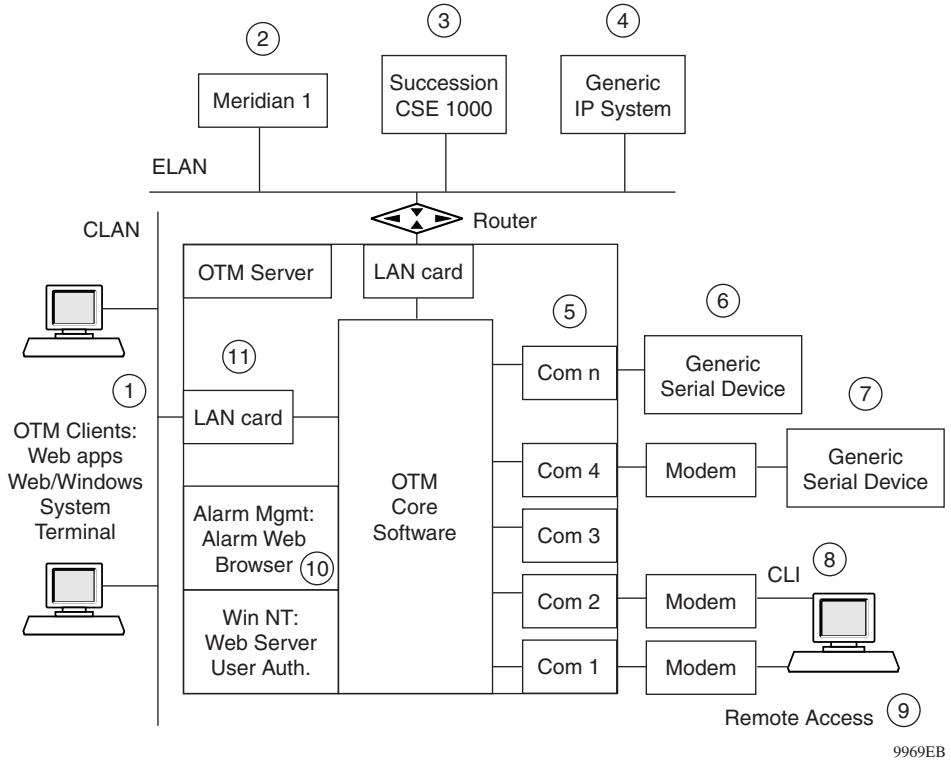


Table 3 Legend

1. OTM users can access a system via the OTM Windows and Web Navigators. Applications include System Terminal as well as any Web-based applications supported by the system. OTM clients on the CLAN/ELAN can also use the OTM Windows-based applications (Station Administration, ESN, and so on).
2. OTM provides the connectivity to the Meridian 1 system for all windows and Web-based applications.
3. OTM provides the connectivity to the Succession CSE 1000 system for all windows and Web-based applications.
4. Generic IP System connection - The Web-based System Terminal provides a telnet-type connection to any IP-connected system or device. You can also navigate to the device's management Web pages (if applicable). **Example:** MIRAN II cards provide both a telnet access and Web-based management applications.

Table 3 Legend (continued)

5. Com Ports - You can equip the OTM Server with a Multiple Serial card to provide up to 8 additional com ports. You can use these ports for dial in or dial out.
6. Generic System direct serial connection - Allows direct connection to any serial device. For example, for legacy Meridian 1 systems (R21 and earlier), you can connect to a maintenance TTY port and capture the error messages. A new OTM Text Handler capability can filter the TTY output and generate SNMP traps for selected error messages.
7. Generic System remote serial connection - When connecting to a remote serial system, you select the com port and manually dial the number of the desired system.
8. Access Server - Provides a serial command line interface (CLI) into the OTM Server, enabling remote access. Once connected, you can change Windows NT passwords or connect to any system or devices defined and enabled in the Virtual Terminal Service. The CLI is launched at Server Startup, and opens a status window displaying different status messages. The CLI Configuration window allows you to configure the server COM port settings. A real-time Log file details all CLI activities. For more information, see "Access Server option" on page 63.
9. Remote Access - You can dial in to the OTM Server, log in using the Windows NT Remote Access Service (RAS), and access all defined systems, such as Web System Terminal or system-specific Web applications. In addition, you can use the PC Anywhere application to dial in to an OTM client PC on the CLAN/ELAN.
10. Web Alarm Browser - Displays alarms collected from multiple supported Meridian 1 and Succession CSE 1000 systems and devices.
11. PC LAN cards - Provide access to both the CLAN and ELAN.

Alarm Management

OTM Alarm Management provides an alarm collection and processing center for multiple systems and devices. OTM receives SNMP traps from systems, such as the Meridian 1, Succession CSE 1000, and Call Pilot, and stores them in a circular log file on the OTM Server. The OTM Alarm Notification application monitors the incoming traps and notifies the appropriate people of important events and alarms.

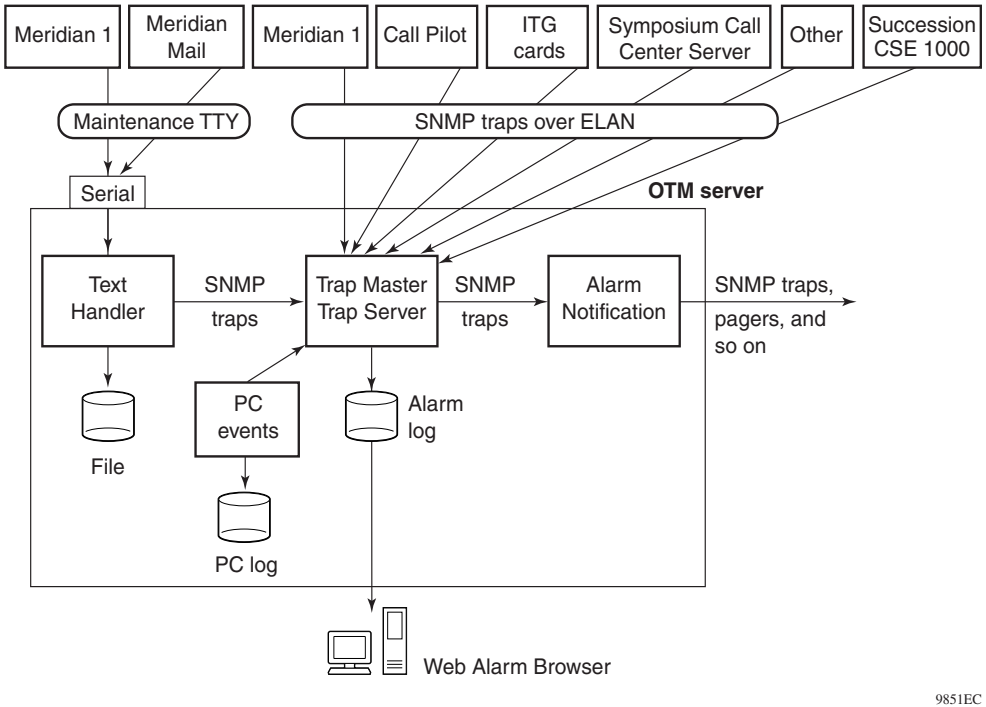
OTM Alarm Management has the following components:

- Web-based Alarm Browser - Used for viewing alarms from multiple systems and devices. HTML Help is provided for individual alarms.

- Windows-based Alarm Browser - Used for viewing Meridian 1- and Succession CSE 1000-specific alarms. Windows Help is provided for individual alarms.
- Alarm Notification application - Provides a scripting language to generate notifications on selected incoming traps. Notification types include pagers, e-mail, and the forwarding of SNMP traps to an upstream processor (such as Optivity NMS). Notification is triggered by trap data, such as alarm severity, device type, and time of day. A Script Wizard application simplifies the creation of Alarm Notification scripts.
- Text Handler application - Parses maintenance TTY output and generates traps on selected error messages. This is intended primarily for legacy Meridian 1 systems (Release 21 and earlier) and Meridian Mail systems, which cannot generate traps. You can create Text Handler rules to support other serial devices.
- PC Event Log and Viewer - For viewing events and alarms generated on the OTM Server and all of its Windows clients. This Windows application can also generate SNMP traps based on the event severity level.

Figure 5 shows the main components of OTM Alarm Management. The Trap Master is responsible for handling the SNMP traps from the systems and storing them on the server for retrieval by the Alarm Browser client. The Trap Server distributes traps to OTM applications registered to receive traps, such as Alarm Notification.

Figure 5 OTM Alarm Management block diagram

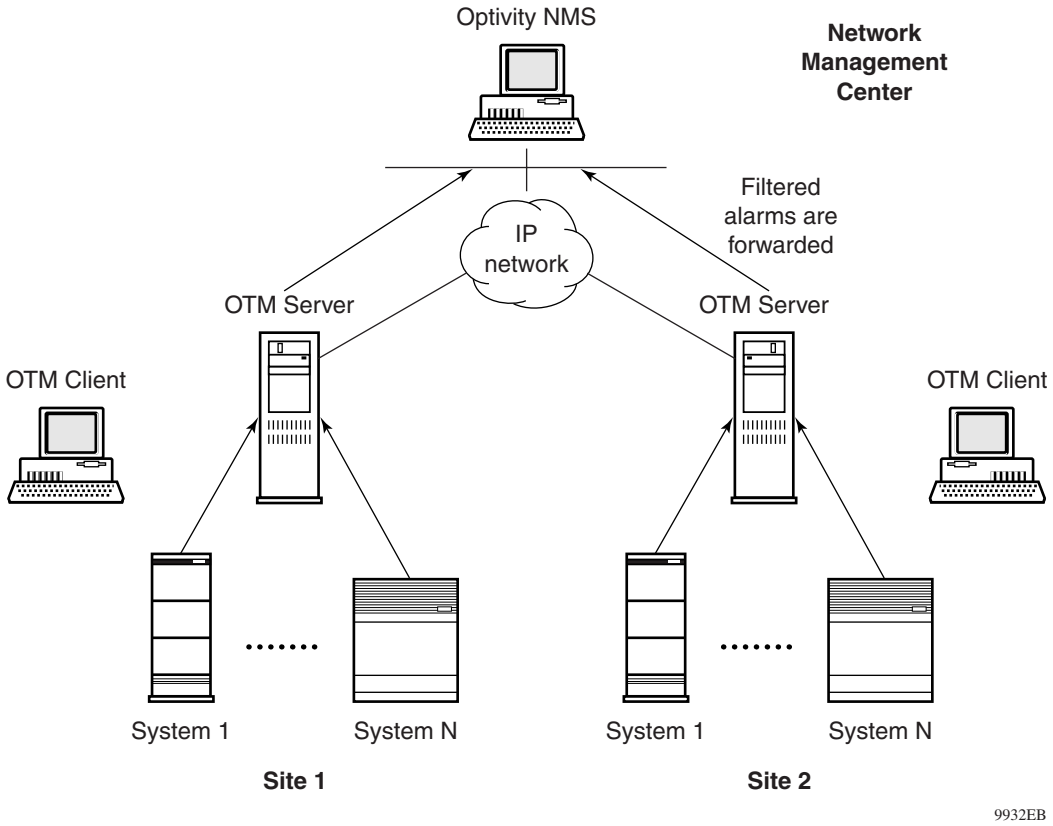


The Trap Master and Trap Server are run as Windows NT Services on the OTM Server.

OTM integrates with Optivity NMS 9.0.1 and above. The devices represented in Optivity NMS are OTM servers. These are manually added by the Optivity NMS administrator (Figure 6).

For a list of supported devices and additional information on alarm management, see Chapter 5, “Alarm management,” on page 653.

Figure 6 Centralized alarms



Access Server option

The Access Server capability is available as an orderable option within an OTM server. This functionality allows CLI access to an OTM server using either a direct serial connection or a modem. From the OTM Server, connectivity is available to configured devices using the connection capability within Virtual Terminal Server. This connectivity must be preconfigured within Virtual Terminal Server to be available to a CLI connection.

Typically, Access Server is installed on an on-site PC that is used like a terminal server to allow a single connection to the site and then to fan out this connectivity to multiple devices that are connected to the OTM Server. You can access the remote location either by means of a terminal or human interactive session, or through a remote computer communicating via scripts.

You can use the OTM Access Server option with any level of OTM package (General, Enhanced, or Premium). You add this CLI input capability by ordering the "Access Server" to add to the OTM Server. If you order Access Server, it is not necessary to order any Set Expansion Packages, if all that you require is to use the Access Server mode. Of course, if OTM management functionality, such as Station Administration, is required, then it may be necessary to order Set Expansion Packages.

For more information on the Access Server option, see "Access Server" on page 153.

Chapter 2
Common services

Services

OTM Windows Navigator

OTM Windows Navigator and OTM Web Navigator are the two main graphical user interfaces (GUIs) to OTM. These two GUIs provide access to most of the OTM systems and services.

OTM Windows Navigator windows

OTM Windows Navigator, which uses the Microsoft Windows interface, shows the names and types of all systems available to the current user, and allows you to group the systems into sites for more convenient access. Once grouped, the systems can be viewed by site as shown in the example of the OTM Windows Navigator (Figure 7), or by gatekeeper zone (Figure 8 on page 68).

Note: A gatekeeper provides endpoint management, including registration/unregistration, authentication, address resolution (DN to IP, and endpoint to gateway), and maintains a list of endpoints currently active on the network. Each gatekeeper controls one H.323 zone; each H.323 zone consists of many H.323 IP clients. For more information on gatekeepers and gatekeeper zones, see *Meridian Internet Telephony Gateway (ITG) Line 1.0/IP Telecommuter* (553-3001-119).

The gatekeepers are only displayed in the Gatekeepers Zones view. Although primarily used for Succession CSE 1000 systems, Meridian 1 systems can be assigned to a gatekeeper zone. This functionality is intended for Meridian 1 systems that are equipped with ITG applications that support gatekeeper operation.

In the Sites view (Figure 7), Media Gateways appear in their associated site folder as well as in the Media Gateways folder within the appropriate Succession CSE 1000 folder. In the Media Gateways folder, the Media Gateway name is composed of the Site name and the system name. If the Call Server and Media Gateway are in the same site, the Media Gateway only appears in the Media Gateways folder of the associated Succession CSE 1000 system.

In the Gatekeeper Zones view (Figure 8 on page 68), Media Gateways appear within the Media Gateways folder of the associated Succession CSE 1000 system.

In the Sites view, Survivable IP Expansion cabinets appear in their associated site folder as well as in the Survivable Cabinets folder within the appropriate Option 11C main cabinet folder. If the main cabinet and Survivable IP Expansion cabinet are in the same site, the Survivable IP Expansion cabinet only appears in the *Survivable Cabinets* folder of the associated Option 11C system.

In the Gatekeeper Zones view, Survivable IP Expansion Cabinets only appear within the Survivable cabinets folder of the associated Option 11C system.

Note: OTM does not display the survivable status of Media Gateways and Survivable IP Expansion cabinets. Also, OTM does not display the status of Gatekeepers (Primary/Alternate/Out of Service).

Figure 7 OTM Windows Navigator—Sites view

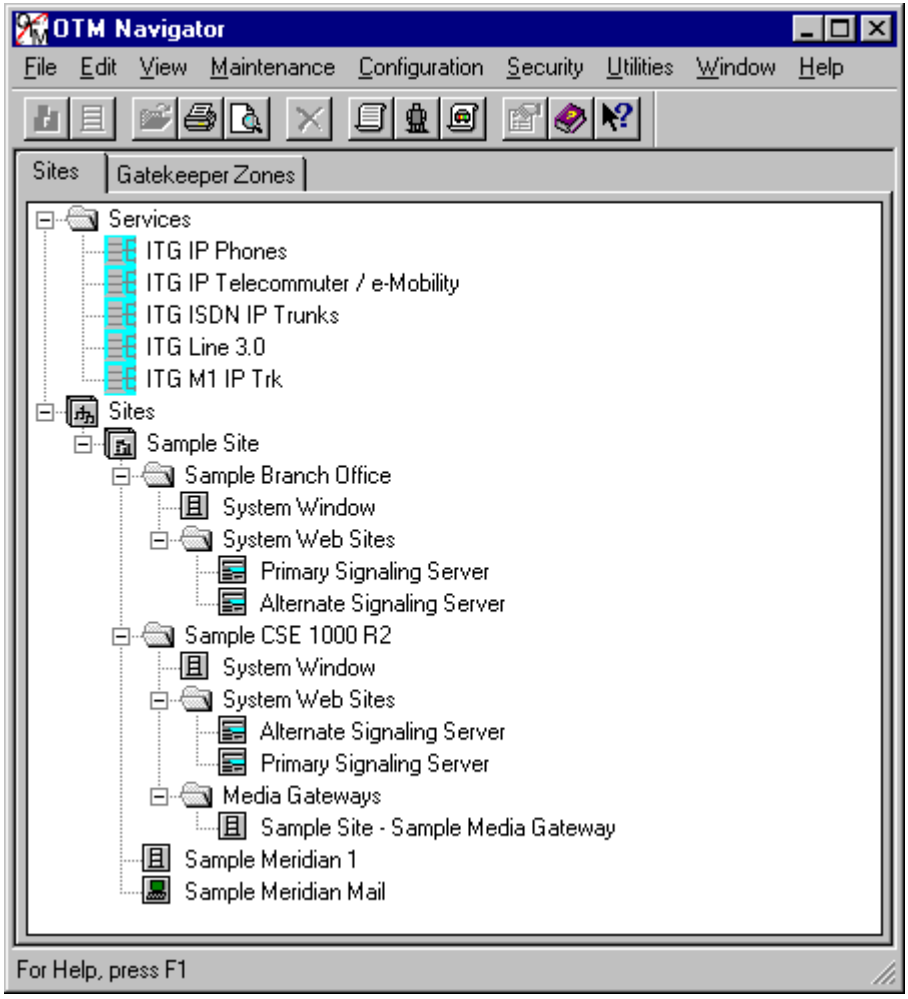
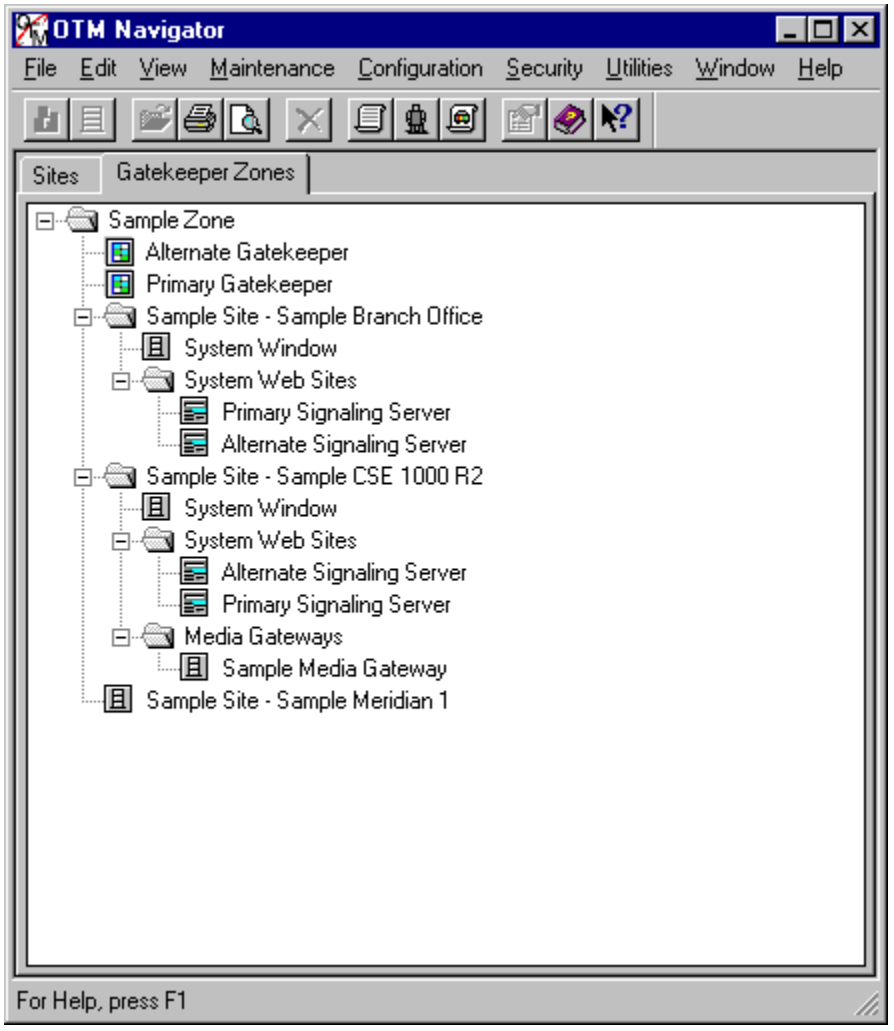


Figure 8 OTM Windows Navigator—Gatekeeper Zones view



The OTM Web Navigator, which uses the Web (http) interface, provides access to OTM's Web-based features and services. For more information about the OTM Web Navigator and the features and services to which it provides access, see "OTM Web Navigator" on page 317.

OTM Windows Navigator allows you to do the following:

- Display a "tree" structure for the Gatekeeper Zones on the network that you manage. Access systems in a particular zone by opening the zone.

- Display a “tree” structure for the Sites and Systems on the network that you manage. Access systems at a site by opening that site.
- Launch the System Window.
- Launch System Web Sites (Succession CSE 1000 systems only).
- Configure and administer OTM data: Sites and Systems, Users.
- Configure and administer OTM Services, such as Integrated Telephony Gateway.
- Launch utility applications, such as the Scheduler, Corporate Directory, and Alarm Notification.
- Display the licensing and release information for all installed OTM applications.
- Print reports.

Figure 9 illustrates these functions.

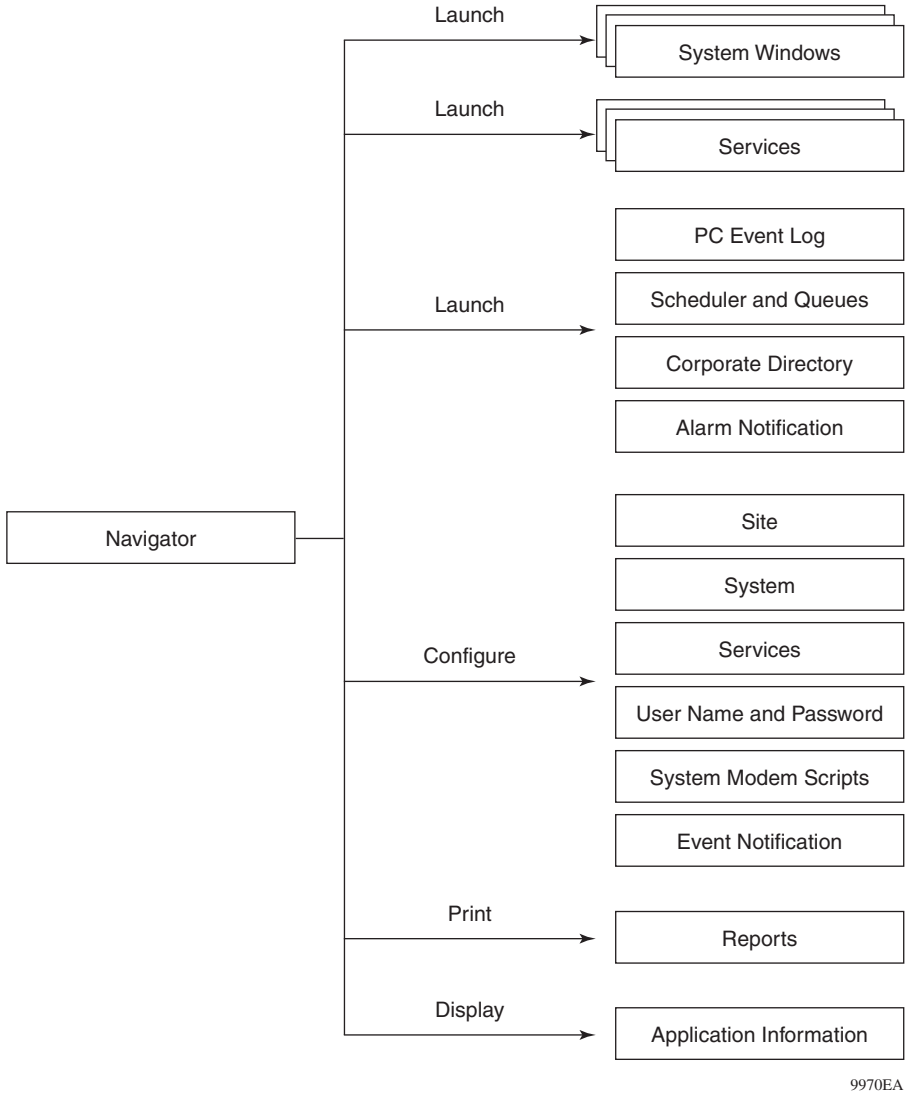
Note: Double-click the System Window icon to launch the OTM system window containing the OTM Windows applications.

Note: Double-click the System Web Sites icon to launch the element management Web pages on the associated Signaling Server.

Note: Double-click a Gatekeeper to launch the associated management Web page.

Note: Access to the Command Line Interface (CLI) on the Signaling Server is not included in the tree. You can create a generic system for this purpose.

Figure 9 OTM Windows Navigator functions



Using OTM Windows Navigator

OTM Windows Navigator allows you to access any Meridian 1 or Succession CSE 1000 system or other systems that your user group privileges allow. In OTM Navigator, you open the site, or gatekeeper zone, of interest to choose a system on which to work. Double-click a system to open its System window and launch any of the OTM applications to work on that system.

Open a site by double-clicking its name or clicking the plus sign (+) next to the site. The plus sign (+) changes to a minus sign (-) when the site opens. An open site displays all systems at that site. Close a site by clicking the minus sign (-).

Open a gatekeeper zone by double-clicking its name or clicking the plus sign (+) next to the zone. The plus sign (+) changes to a minus sign (-) when the zone opens. An open gatekeeper zone displays all of the systems associated with the zone. Close a zone by clicking the minus sign (-).

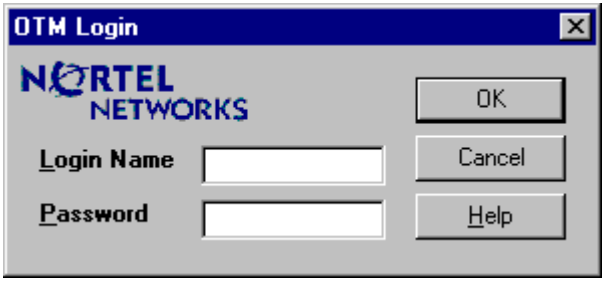
For Meridian 1 and Succession CSE 1000 systems, the components that make up the system appear in the system window. OTM displays a terminal emulation window for systems defined as “Generic.”

For information about using the OTM Web Navigator, see “OTM Web Navigator” on page 317.

Logging in and launching OTM Windows Navigator

From the Start menu, in the Windows Programs list, select Optivity Telephony Manager > OTM Navigator. The login dialog box appears (Figure 10). Enter your Login Name and Password. The OTM Windows Navigator window appears (Figure 11 on page 72).

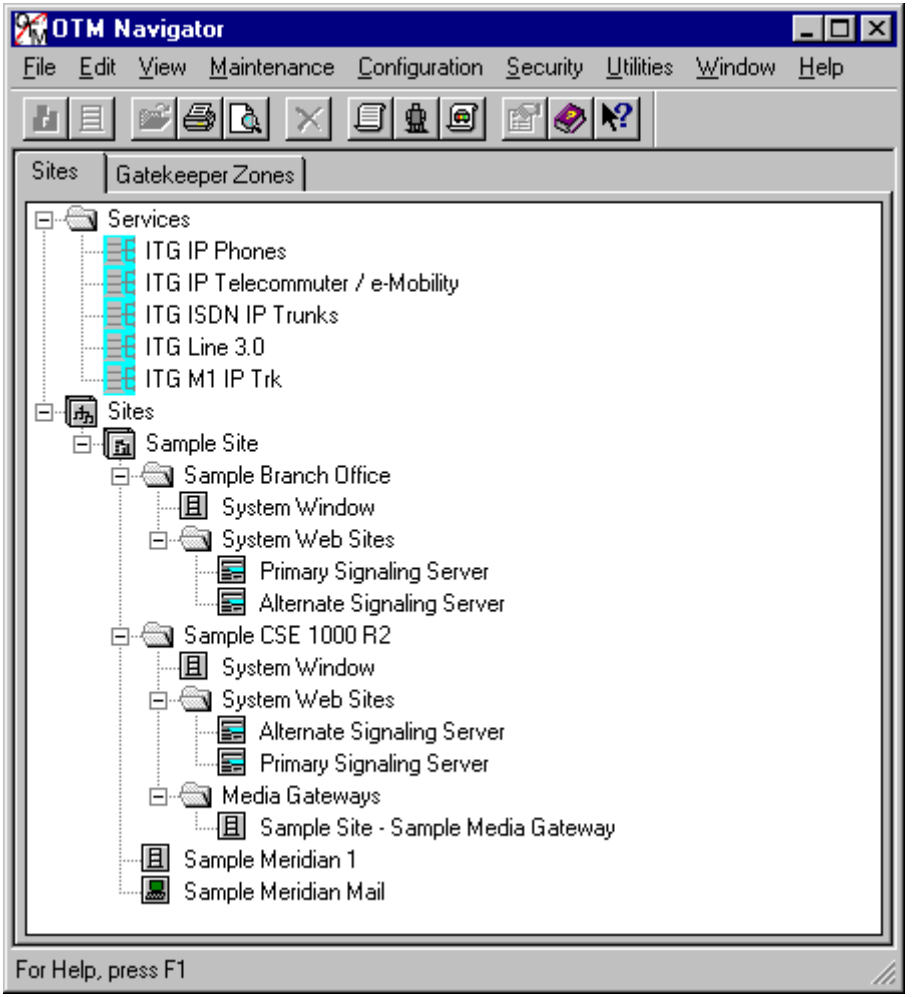
Figure 10 Login dialog box



OTM Navigator menus

Detailed descriptions of the functions of each command in the Navigator menus are available by clicking the context-sensitive Help button in the toolbar.

Figure 11 OTM Navigator window



Services folder

The Services folder contains applications and services available for sites and systems defined and accessible by the OTM PC.

IP Telephony Gateway applications

Table 4 lists the OTM IP telephony applications and the corresponding ITG hardware and software that are supported by various releases of X11 and Succession CSE 1000 system software.

Table 4 OTM supported ITG applications by system software release

OTM application	ITG application and cards	Supported system software releases											
		X11 Releases									Succession CSE 1000 Releases		
		19	20	21	22	23	24	25.15	25.30	25.40	1.0	1.1	2.0
ITG IP Phones	ITG Line 2.0							Yes	Yes	Yes			
	ITG Line 2.1							Yes	Yes	Yes	Yes	Yes	
	ITG Line 2.2							P3	P3	Yes	P3	Yes	
ITG IP Telecommuter / e-Mobility	ITG Line 1.0				Yes	Yes	Yes	Yes	Yes	Yes			
	802.11 Wireless								Yes	Yes		Yes	Yes
ITG ISDN IP Trunks	ITG Trunk 3.0							Yes	Yes	Yes			
	ITG Trunk 2.0							Yes	Yes	Yes			
ITG Line 3.0	IP Line 3.0							P1	P1	P1		P1	L2
ITG M1 IP Trunk	ITG Trunk 1.0			Yes	Yes	Yes	Yes	Yes	Yes	Yes			

P1—Partial Support - The ITG Line 3.0 application can be configured on an X11 release 25 or CSE 1000 Release 1.1 system for the feature set equivalent to the ITG Line 2.2 application.

L2—Limited functionality for the ITG Line 3.0 application is supported - Base line configuration is performed by accessing the web server providing Succession CSE 1000 Element Management. OTM and Succession CSE 1000 Element Management support Operational Measurement reports. Corporate Directory on the Succession CSE 1000 requires OTM 2.0 and later.

P3—Partial support - When using earlier releases of the X11 and Succession CSE 1000 system software, partial support exists for the ITG feature set. The i2050 telephone is not supported on these releases.

The following OTM applications provide configuration and maintenance for the IP Telephony Gateway (ITG) cards.

- ITG IP Phones

  This application is used to configure and maintain the ITG gateway card for IP telephones. The IP telephones are true Internet telephones that are connected to a Meridian 1 or Succession CSE 1000 system through an IPE-to-ITG gateway card. The configuration of IP telephones is accomplished

through the Station Administration application in OTM. For more information, refer to *Meridian 1 and Succession Communication Server for Enterprise 1000 IP Line, Description, Installation, and Operation* (553-3001-204).

- ITG IP Telecommuter / e-Mobility

  This application is used to configure and maintain the ITG line card for IP Telecommuter. This application is used to configure the IP Line gateway and the gatekeeper, but not the H.323 IP terminal or PC-based software client. For more information, refer to *Meridian Internet Telephony Gateway (ITG) Line 1.0/IP Telecommuter* (553-3001-119).

  This application is also used for the configuration and maintenance of the ITG line card for wireless service. For more information, refer to *802.11 Wireless IP Gateway for Meridian 1* (553-3001-206)

- ITG ISDN IP Trunks

  This application is used to configure and maintain the 24-port or 32-port ITG trunk card that resides in the IPE shelf of the Meridian 1. The card appears to the switch as a trunk card with ISDN Signaling Link (ISL) and D-channel signaling. The card has a 10/100 baseT connection to carry packetized voice and fax calls over IP data networks. For more information refer to *Meridian Internet Telephony Gateway (ITG) Trunk 2.0/ISDN Signaling Link (ISL)* (553-3001-202), and *Addendum to Meridian Internet Telephony Gateway (ITG) Trunk 2.0/ISDN Signaling Link (ISL)* (P0941974).

- ITG Line 3.0

  This application is used to configure and maintain the 32-port Succession Media Card and the Voice Gateway Media Card. For more information, refer to *IP Line: Description, Installation, and Operation* (553-3001-204).

- ITG M1 IP Trunks

  This application is used to configure and maintain the 8-port ITG (trunk) card that resides in the IPE shelf of a Meridian 1 system. The card has a 10/100 baseT connection to carry packetized voice and fax calls over IP data networks, and can serve as a toll bypass to the traditional PSTN. For more information, refer to *Meridian Internet Telephony Gateway (ITG) Trunk 1.0/ Basic Per-Trunk Signaling* (553-3001-116).

Toolbar

The OTM Navigator toolbar includes several buttons that act as shortcuts to the commands available in the menus. The function of each button in the toolbar appears when you move the mouse over the button (Figure 12).

Figure 12 OTM Navigator toolbar

Status bar

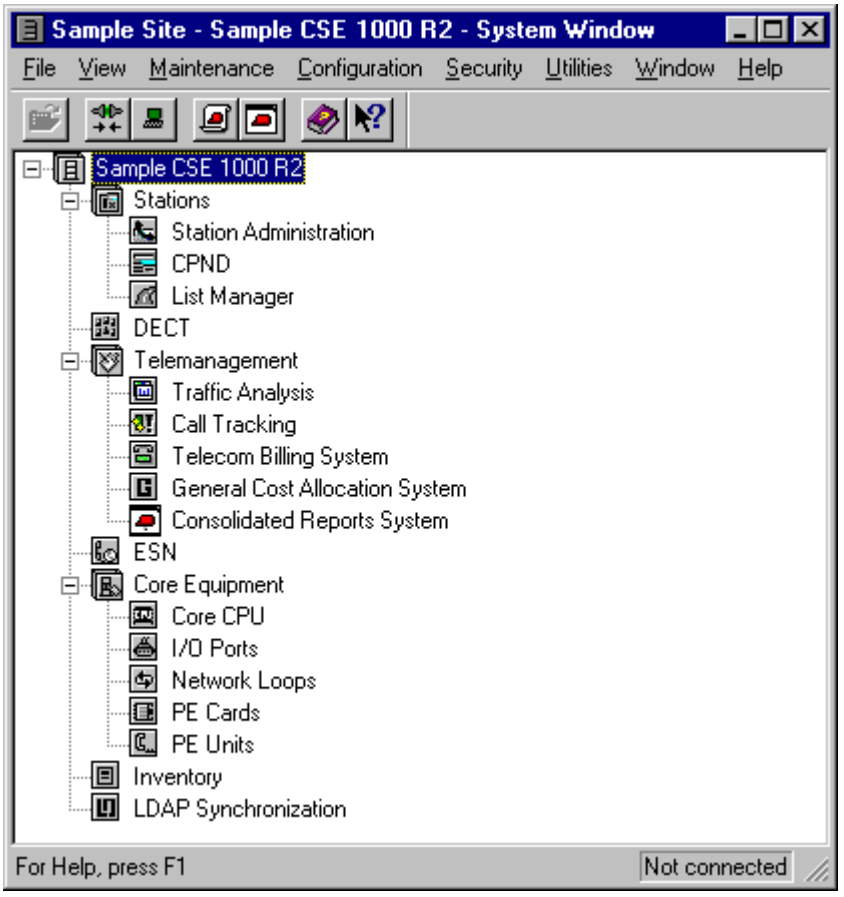
A status bar is located at the bottom of the window. To display or hide the status bar, use the status bar command in the View menu.

The status bar describes actions of the menu commands as you use the mouse to navigate through menus. It also describes the actions of the Toolbar buttons as you press them. When you choose a menu command, the status bar describes the progress of the command while it executes. For example, the status bar shows Printing text when you choose Print from the File menu.

Working with the OTM System Window

From OTM Navigator, double-click the system on which you want to work. The System Window for that system appears (Figure 13).

Figure 13 System Window



OTM System window allows you to launch the following applications (some of these applications are purchased separately):

- Alarm Banner
- Events
- System Terminal (Ethernet or PPP)
- System Terminal VT220 (serial)
- Station Administration
- Traffic Analysis
- Telecom Billing System
- Call Tracking

- ESN Analysis and Reporting Tool
- Maintenance Windows
- Inventory
- LDAP Synchronization
- General Cost Allocation System (GCAS)
- Consolidated Reporting System (CRS)
- Consolidated Call Cost Reports (CCCR)

OTM System Window menus

Detailed descriptions about the functions of each command in the OTM System window menus are available by clicking the context-sensitive Help button in the toolbar.

Security management

OTM provides easy access to users for personal, system, site, or network-wide management of Meridian 1 and Succession CSE 1000 systems. The Administrator determines what level of access the users in a particular User Group have to the features within OTM. You also determine which sites and systems the members of the User Group are able to manage. It is the responsibility of the Network Administrator to ensure that only authorized users are able to access the OTM Server and its associated Meridian 1 and Succession CSE 1000 systems. This section outlines the issues related to security management within OTM.

Note: For information on security provided by the Microsoft Windows NT operating system, see “Security guidelines for Windows NT” in “Chapter 3: Windows NT reference” of *Installing and Configuring Optivity Telephony Manager* (553-3001-330).

Authentication

In OTM, Windows and Web users are authenticated using the settings configured either on the User Authentication Web page or in the User Authentication dialog box. The information that appears on the Web page and in the dialog box is identical. The Web link to the User Authentication page is found under Web Administration in the OTM Web Navigator tree. The User Authentication dialog box is accessed from the Security menu in the OTM Windows Navigator.

The following user authentication methods are available:

- Local OTM Server account
- Windows NT Domain account
- LDAP authentication

Note: For a standalone OTM system utilizing the Windows 98 operating system, OTM Windows users are authenticated using the information stored for the user's account in the OTM Users window. This method is similar to the method used in previous releases of OTM.

You can select any one of the three methods or a combination of the these methods to authenticate users on all OTM platforms: OTM Server, OTM Windows Client, and OTM Web Client.

Note: The Administrator account is always authenticated as a Windows NT or Windows 2000 local account. This is due to the fact that the Administrator account is the default account on these Windows platforms.

Note: The default authentication method is "Local OTM Server account." Since this method does not require a search of the OTM Directory to find the user's assigned User Group, the "Local OTM Server account" method provides the best login performance.

Note: If you choose multiple authentication methods, OTM respects the order configured; however, it should be noted that the best performance is achieved by using the "Local OTM Server account" method.

For information on configuring authentication methods using the User Authentication Web page, see "User authentication" on page 356.

For information on configuring authentication methods using the User Authentication Windows dialog box, see "User authentication" on page 144.

Password policy

Authentication requests are passed to OTM Watchdog, which applies the configured authentication method and creates a session for the user. For authentication on "Local OTM Server account" or "Windows NT Domain account," the standard Windows Security Provider is used. For authentication using LDAP, the Login Name and the Password are passed to the LDAP Server.

Password security during transport across the network is accomplished in the following manner:

- OTM Windows Client passwords are encrypted using Crypto APIs prior to being transmitted. The same private key is used by both the client and the server.
- For OTM Web Clients, by default, clear text passwords are used; however, if the OTM Server has the proper certificate installed, you can force the use of secure socket layer (SSL) encrypted transport during authentication. This is accomplished by protecting specific virtual directories on the OTM Server and selecting the "Use password encryption for selected methods" check box either on the User Authentication Web page or in the User Authentication dialog box.

Note: If password encryption is selected, Web login is performed using https://... instead of http://... and traffic is encrypted. The OTM Server automatically switches to non-SSL transport once the user is successfully authenticated.

Note: OTM provides a default private/public key. Use this key if you do not have the required certificate. OTM also includes a script to configure SSL processing on the appropriate Web directories.

- If LDAP authentication is used, the following sequence is used:
  - The OTM Server tests to determine whether the Directory Server offers SSL-based authentication.
  - If SSL is supported by the Directory Server, passwords are encrypted before being transmitted using a Public-Private key pair negotiated through the LDAP mechanism.
  - If SSL is not supported, passwords are transmitted as clear text.
- All passwords, including the passwords used to access the Meridian 1 and Succession CSE 1000 systems, are stored in the OTM database in an encrypted format. Crypto API, the standard Windows Security Provider encryption service, is used for this purpose.

Note: OTM does not support blank passwords.

Caution: There is a known bug in Windows 2000 with Service Pack 2. If users set their password to blank using the Windows User Manager tool, they can log in with any password.

User Management

There are two major categories of users within OTM — Navigator users and end users. You control access for these users by configuring Navigator users in the OTM Users window, and end users in the Employee Editor.

Navigator users

OTM Windows Navigator and Web Navigator users are managed through OTM User administration. Users are created and assigned to a particular User Group. This User Group assignment controls access to OTM Windows and Web applications.

Note: In previous versions of OTM, User Groups were referred to as Templates in the Windows interface, and Access Profiles in the Web interface.

There are two different types of Navigator users:

- Local — Local Navigator users have accounts that exist on the OTM Server. When a user is added, an OTM user account and a corresponding local Windows NT or Windows 2000 user account are created on the OTM Server. The new user is assigned to the selected Windows NT or Windows 2000 user group.

  Delete an OTM user account to remove the user account from the Windows NT or Windows 2000 account list, as well as from all relevant database tables.

- Remote — Remote Navigator users have accounts that reside on a domain controller or in an LDAP Directory. You use OTM User administration to assign the Remote Navigator user's Login Name to an OTM user group.

For information on configuring Navigator users, see "Configuring OTM Navigator users" on page 139.

End users

End users access the OTM Desktop Services Web site to view information on, and make changes to, their telephones.

Although end users can be given an OTM user account similar to Navigator users, they typically are authenticated via a Windows NT Domain account or an LDAP-compliant directory.

For end users, the following attributes are entered into the users record in the OTM Directory via the Employee Editor:

- Login Name — The Login Name is used to associate the end users with their telephones.
- User Group — The User Group assignment determines what the end users can view and change on their telephones.
- Reporting Access Rights — Reporting Access Rights controls access to the Web TBS telecom billing reports.

For information on using the Employee Editor to configure end users for access to OTM, see "Enable Web desktop access" on page 172.

Login process

This section describes the activities performed by OTM to authenticate and log in OTM users.

1 The user accesses the Windows login dialog box or the Web login page.

2 User enter their Login Name and Password.

3 OTM performs authentication respecting the configured order.

4 If authentication is successful, User Group resolution is performed as follows:

Navigator login — Windows or Web

— If the user is authenticated using a local OTM Server account, User Group resolution is performed using the Windows NT or Windows 2000 Local Account Database.

— If the user is authenticated using a Windows NT Domain account, User Group resolution is performed using the OTM User database. If the User Group mapping is not found in the OTM User database, the OTM Directory is used.

— If the user is authenticated using an LDAP Directory, User Group resolution is performed using the OTM User database. If the User Group mapping is not found in the OTM User database, the OTM Directory is used.

Note: If the user cannot be mapped to a User Group, OTM displays the following message: “You have not been assigned to an OTM User Group. Please contact the OTM Administrator.”

End users — Web only

— User Group resolution is performed using the OTM Directory. If users are not found, they are assigned to the “Default” User Group.

User Groups

OTM User Groups provide the mechanism to control access to the following OTM resources:

- OTM Windows Navigator — Navigator and site/system level applications

- OTM Web Navigator — Navigator and site/system level applications
- Access to Web Station Administration — Web Desktop Services for end users

In addition, OTM provides the following user management functions:

- The ability to create/delete Users and User Groups (Windows user interface only)
- The ability to configure Web Desktop Services for end users (Web user interface only)

Creating a User Group

The Windows User Group application was known as User Templates in early versions of OTM. New User Groups are created using an existing User Group as the base. See "Creating a User Group" on page 139 for the procedure to follow when creating a new User Group.

User Groups page in the Web Navigator

While User Groups can only be added and deleted using the OTM Windows Navigator, they can be modified via the User Groups page in the OTM Web Navigator.

The User Groups page in the Web Navigator provides access to the Java application that is used to configure User Group Properties. User Group Properties are separated into two major categories:

- Navigator — Controls access to sites, systems, and applications for both the Windows Navigator and the Web Navigator.

  For information on configuring Navigator access using the OTM Web Navigator, see "Navigator access" on page 361.

Note: This configuration can also be performed via the User Group Properties in Windows-based OTM. See step 4 on page 141 in "Creating a User Group."

- Telephones — Controls access to telephones properties for Web Station Administration and Web Desktop Services.

For information on configuring telephone access, see "Telephone access" on page 363.

Note: The telephone access configuration can only be created and modified using the Java application in Web-based OTM.

User Groups provided with OTM

The following User Groups and access definitions are shipped with OTM:

- Administrators — This User Group has read/write access to all sites, systems, and applications. The Administrators User Groups cannot be changed, renamed, or deleted.

Note: The other User Groups provided with OTM can be changed, but they cannot be renamed or deleted.

- HelpDesk — This User Group has the following access privileges:
  - — Access to all Web Navigator tree items except those located under the Web Administration branch
  - — Full access to Web Desktop Services, including read/write and synchronization capabilities
  - — Full access to the Windows Navigator applications with the exception of ITG Services
- EndUser — This User Group has the following access privileges:
  - — No access to the OTM Windows or Web applications
  - — Web Desktop Services is read-only; however, all except 21 of the most commonly used features are set to "Hidden"
- Default — This User Group has no access to any OTM features or applications.

Migrating User Templates from earlier versions of OTM to User Groups

The migration from User Templates to User Groups has required that several changes be made to existing users profiles and access privileges. This section highlights these changes.

During the installation process, all users who were assigned to the Administration template in earlier releases of OTM are migrated to the Administrators User Group. The old Administration template is deleted. Only users who were assigned to the Administration template in the OTM Users window are migrated automatically. Administration template users in the OTM Directory must be updated manually after the upgrade.

Note: Use the Directory Update feature to find all users assigned to the Administration User Group, and perform a global change to migrate them to the Administrators User Group. See "Directory Update page" on page 335 for more information.

Note: This change only impacts access to end user Web pages.

The HelpDesk, EndUser, and Default User Groups are migrated to the newer version of OTM with their Web access rights preserved. Windows access rights for these groups are assigned the default values described in the previous section, "User Groups provided with OTM."

Any new telephone features are assigned Read/Write access for members of the Administrators User Group. These new features are "Hidden" for members of all other User Groups.

All other templates that you may have created in earlier versions of OTM are migrated to User Groups in the new version with the Windows access rights preserved. In OTM 2.0, all access rights to Web applications for these users are set to NoAccess. Entries are created for these users in the Web Station database for telephone access; however, the access rights for the members of these groups are set to NoAccess.

In early versions of OTM, access rights did not exist for the ITG applications. All users had Read/Write access to these applications. When migrating a template from an earlier version of OTM to a User Group in the new version, the access rights for the ITG applications are set to Read/Write for members of the Administrators User Group and NoAccess for all other users.

The ADMIN user account from earlier versions of OTM is migrated with no restrictions. This account can be renamed, deleted, or modified.

During the migration process, if the same user or user group exists in the Windows NT or Windows 2000 OS, you receive a warning message with the options to either Ignore or Retry. If you select Ignore, the user or user group is not migrated. Alternatively, you may choose to manually delete the user or user group from the OS, and then select Retry to proceed with the migration.

Only the four Web Station Administration Access Profiles from pre-Release 2.0 versions of OTM (Administrators, HelpDesk, EndUser, and Default) are migrated to become User Groups.

User management recommendations

The Administrator user account for the Windows NT or Windows 2000 OS does not appear in the OTM Users window. This is to prevent users from changing the Administrator account password from within OTM.

Note: Even though it is not listed in the Users window, you can always use the OS Administrator account to log in to OTM.

Nortel Networks strongly recommends that a new user group be created in OTM based on the Administrators user group. OTM users should be assigned to this new user group instead of adding them to the Administrators user group. This is a security measure to ensure that a user with administrative access to OTM does not also have access to the OS on the OTM Server as a member of the Administrators group.

User Group and OTM Directory interactions

Since User Groups can be assigned to users in the OTM Directory, there are a number of interactions that you should be aware of when adding systems and User Groups in the OTM Windows Navigator.

- When you add a new system, the system's OTM Directory is created with the appropriate list of valid User Groups.
- When you add a new User Group, the User Group is added to the OTM Directory in all of the existing systems. While this process is taking place, you are presented with an informational message (Figure 14).

Figure 14 Synchronizing OTM Directory informational message

- When you rename a User Group, OTM displays the Rename User Group dialog box (Figure 15).

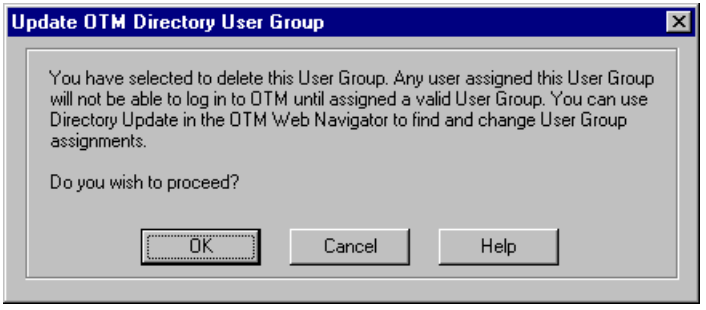
Figure 15 Rename User Group dialog box

If you select OK, the informational message shown in Figure 14 appears.

If you select Cancel, the renaming of the User group is canceled.

- When you delete a User Group, OTM displays the Delete User Group dialog box (Figure 16).

Figure 16 Delete User Group dialog box



If you select OK, the informational message shown in Figure 14 appears.

If you select Cancel, the User Group is not deleted.

- You can use the Directory Update application in the Web Navigator to update the User Group assignment for an individual user or a group of users. For information on using the Directory Update application, see "Directory Update page" on page 335.
- You can also update a user's User Group assignment by going to the OTM Directory entry for the user, and changing the User Group manually. For information on manually updating a User's User Group assignment, see "Employee Editor" on page 169.

Authentication for Succession CSE 1000 Element Manager Web applications

When accessing the Element Manager Web application, the Login Name and Password stored for Customer 0 in the System Properties of the Succession CSE 1000 system is used. If the Login Name and Password are correct, the login page is bypassed. If the Login Name and Password are incorrect, OTM displays the login page.

Note: This automatic login process is not available to Standalone OTM systems operating on the Windows 98 platform.

Note: There is no automatic login to Gatekeeper management URLs.

Installation

The security infrastructure introduced in OTM 2.0 requires that certain changes be made in the area of installing OTM.

Fresh installation

In a fresh installation, three new user groups are created in Windows NT or Windows 2000. OTM utilizes HelpDesk, EndUser, and Default user groups along with the existing Administrators Windows NT/Windows 2000 user group.

For OTM Windows Clients, the OTM Server's host name must be provided during installation. The host name is saved in the registry.

Upgrade

Existing OTM Windows Templates are created as User Groups. By default, these groups do not have access to OTM Web Navigator applications.

A Windows NT/Windows 2000 local server account is created for each existing OTM Windows user. The new account is assigned to the appropriate Windows NT/Windows 2000 user group.

Existing OTM Telephone Access Profiles, which were based on Windows NT/ Windows 2000 user groups, are migrated from the Web Navigator database to the new User Group database. This assumes that the corresponding Windows NT/ Windows 2000 groups related to them already exist.

These User Groups are also migrated to the Web Station database; however, new User Groups do not have access to Web Station Administration. You must configure access to Web Station Administration using the User Groups Web page. See "User Groups" on page 359.

Configuring Sites, Systems, and User accounts

This section provides instructions for changing the default login password (Windows 98 only) and defining your own OTM sites, systems, and user accounts. Only OTM administrators have authorization to perform these tasks.

Caution: To ensure security, you *must* change the default password. Follow the steps in this procedure to select a new password.

Changing the default login password (Windows 98 only)

Note: The following information is applicable to Windows 98 standalone systems only. Windows NT and Windows 2000 users are authenticated using either a local account on the OTM Server, a Windows domain account, or LDAP. There is no default Login Name and Password for these systems. See "Initial log in on Windows NT and Windows 2000 systems" on page 91 for information on logging in to non-Windows 98 systems.

The default login password (Admin) should be changed immediately after OTM is installed to ensure security. Follow these steps if you have not changed the password.

1 If OTM is not already running, follow these steps to start OTM and log in using the default login password:

- Choose Start > Programs > Optivity Telephony Manager > OTM Navigator.

The OTM login dialog box appears.

- Enter the default system administrator Login Name and Password. For security purposes, the password does not appear as you type it in the Password box.

  Login Name: **ADMIN**

  Password: **ADMIN**

Note: The password is case sensitive, and must be entered in all uppercase letters.

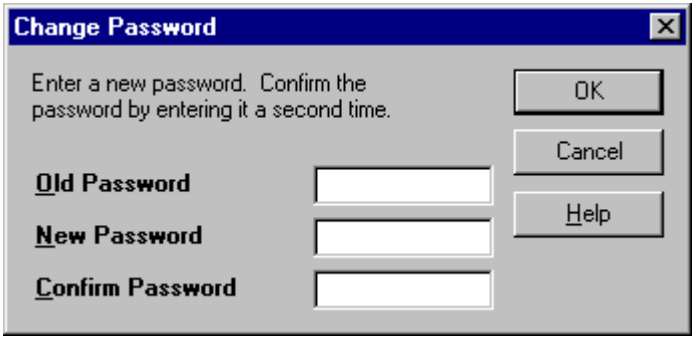
Note: For security purposes, the password does not appear as you type in the Password box.

- Click OK.

After OTM accepts your Login Name and Password, the OTM Navigator window opens.

2 In the Navigator window, choose Security > Change Password to open the Change Password dialog box (Figure 17).

Figure 17 Change Password dialog box



3 Enter the old password in the Old Password box.

4 Type a new password in the New Password box.

5 Retype the new password in the Confirm Password box.

6 Click OK.

7 A message box informs you that the password was successfully changed. Click OK.

8 OTM requires the new password the next time you log in.

Initial log in on Windows NT and Windows 2000 systems

Windows NT and Windows 2000 users are authenticated using either a local account on the OTM Server, a Windows domain account, or LDAP. There is no default Login Name and Password for these systems.

Any user account that is a member of the local Administrators group will always be able to log in to OTM, for example, Administrator. In a new OTM installation, use any local Administrators group account, Administrator for example, for your initial log in.

After logging in to OTM for the first time, you can set up additional users and user groups. To add user groups, select Security > User Groups from the OTM Navigator window, and then select Configuration > Add User Group... from the User Groups window. See “Creating a User Group” on page 139 for detailed

instructions on adding OTM user groups. To add users, select Security > Users from the OTM Navigator window, and then select Configuration > Add User... from the OTM Users window. See "Adding a user" on page 142 for detailed instructions on adding OTM users.

Note: Users that are not created from within OTM, Administrator for example, will not appear in the OTM Users window.

Site and system administration

The system administrator defines the sites and systems that appear in the Navigator window. Sites and systems must be defined before users can connect to a system and perform maintenance tasks. A site typically represents a physical location containing one or more systems. Systems are defined as Meridian 1 or Generic (non-Meridian 1 systems). Succession CSE 1000 systems are defined using the Meridian 1 system type. The Generic system configuration provides access through VT220 Terminal Emulation to systems such as Meridian Mail. Meridian Passport and MSL-100 are examples of additional systems that you can add to OTM (refer to the appropriate chapter within this user guide for more information). The Navigator Configuration menu allows the system administrator to add, change, and delete sites and systems.

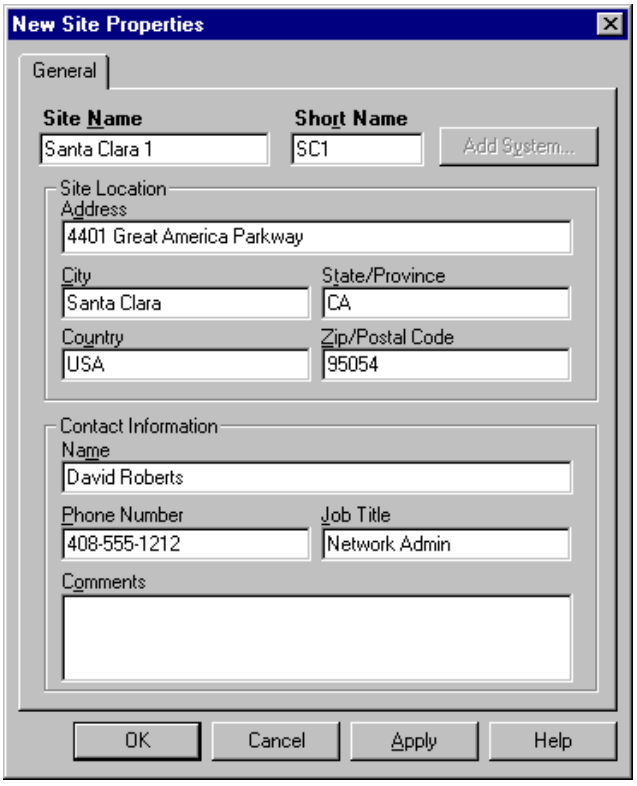
Note: For more information about the Navigator and System windows, see "OTM Windows Navigator" on page 65.

Adding a site

You can add up to 3000 sites to the Navigator window.

1 In the Navigator window, choose Configuration > Add Site. The New Site Properties dialog box appears (Figure 18).

Figure 18 New Site Properties dialog box



2 Enter the Site Name and Short Name (these are required fields).

The Site Name appears in the Navigator tree. The Short Name is an abbreviated site name that appears in the Alarm Banner.

3 In the Site Location box, fill in the site address information.

4 In the Contact Information box, fill in the contact name and related information. Click Apply.

5 To add a new system to this site:

a Click Add System.

b Follow the instructions for "Adding a Meridian 1 or Succession CSE 1000 Release 1.x system" next.

6 When you have finished entering Site information, click one of the following buttons to add the site to the Navigator tree:

- OK adds the site and closes the property sheet.
- Cancel closes the dialog box without adding the site.
- Apply adds the site and leaves the property sheet open allowing you to add another system to this site (you may repeat step 5 to add another system).

Adding a Meridian 1 or Succession CSE 1000 Release 1.x system

You can add as many as 256 systems (including non-Meridian 1 systems) to a site. You must have administrator privileges to add a system.

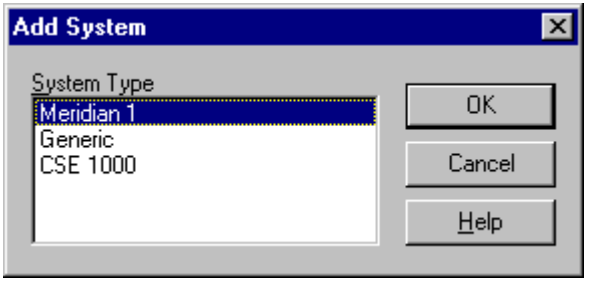
1 In the Navigator window, select the desired site.

Note: If you are adding a new system from within the New Site Properties window, skip to step 3 in this procedure.

2 Choose Configuration > Add System, or use the right mouse button pop-up menu.

The Add System dialog box opens (Figure 19).

Figure 19 Add System dialog box



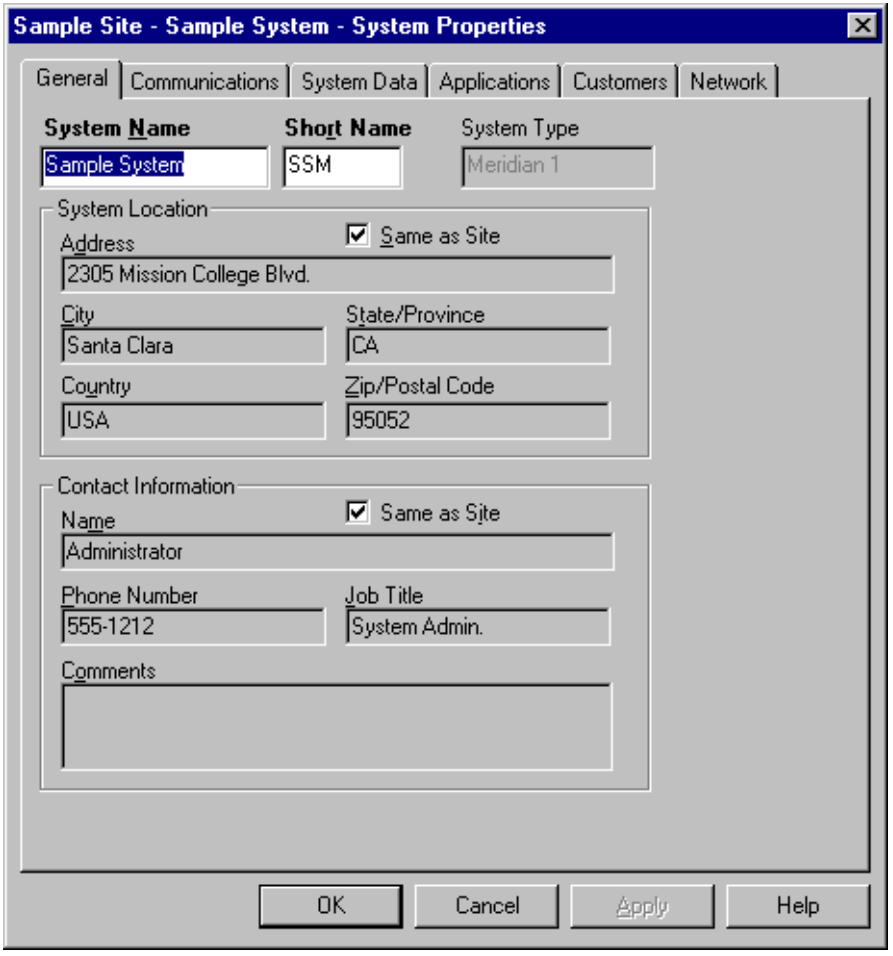
3 In the Add System dialog box, select Meridian 1, and then click OK.

Note: You must select Meridian 1 as the system type for Succession CSE 1000 Release 1.x systems.

Note: You may need to install additional software to enable other system types not listed in Figure 19. Follow the installation instructions included with your order.

The System Properties dialog box opens with the General tab displayed (Figure 20).

Figure 20 System Properties dialog box—General tab



4 Enter the System Name and Short Name (required fields) and other information as needed. Click Apply.

You can make system location and contact information the same as site information by clicking the Same as Site check box.

Note: Bold fields indicate required information. To change a value, edit the field. Some fields may have a list of predefined choices. An arrow within a field indicates a drop-down list of choices. Press the arrow to select from the list. For more detailed information, refer to the online Help.

5 To add a new communications profile, click the System Properties—Communications tab.

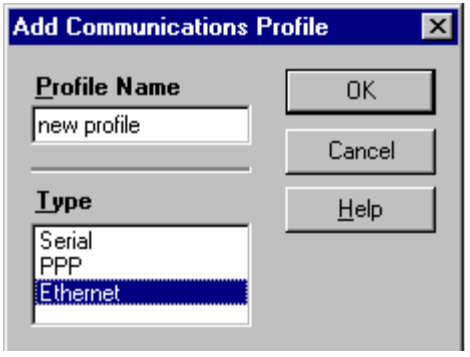
This tab defines the types of communications profiles that can be applied to system applications (one profile can be used for multiple applications).

Note: OTM is shipped with a default communication profile. The Default profile is an Ethernet profile, and it cannot be deleted.

6 Click Add.

The Add Communications Profile dialog box appears (Figure 21).

Figure 21 Add Communications Profile dialog box

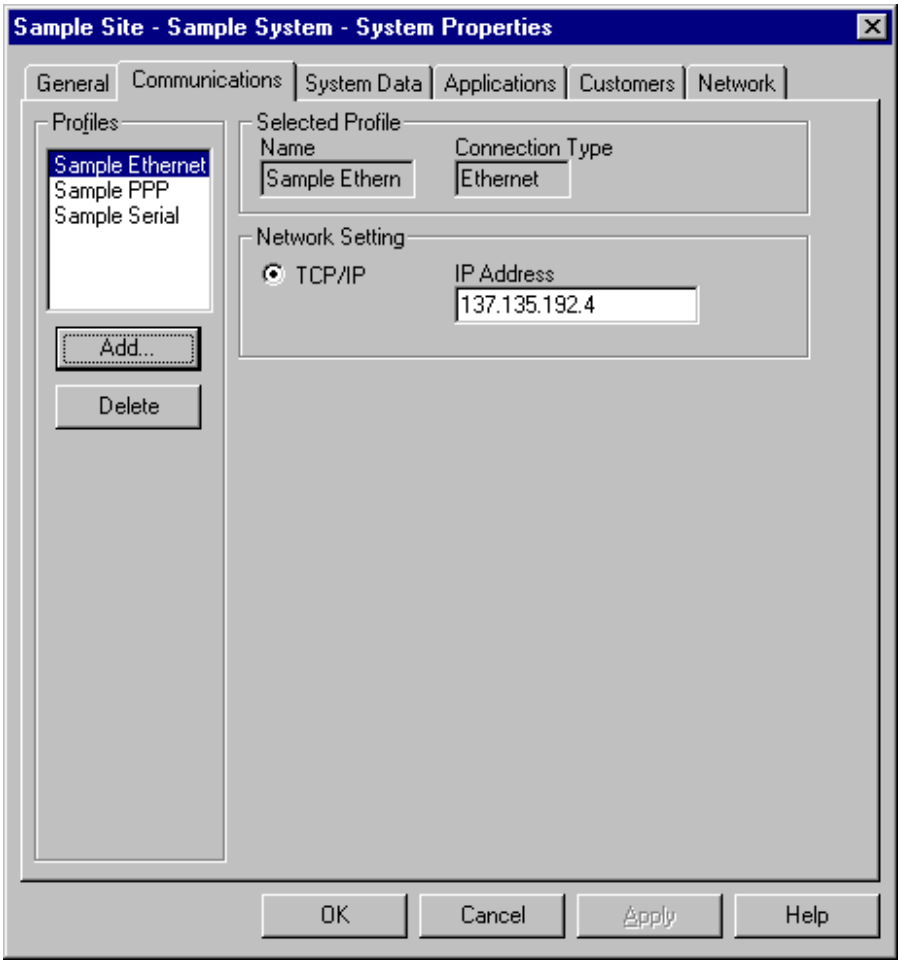


Select a communications type from the Type box and enter a Profile Name, and then click OK to go back to the Communications tab.

7 Fill in the communications information for the new profile:

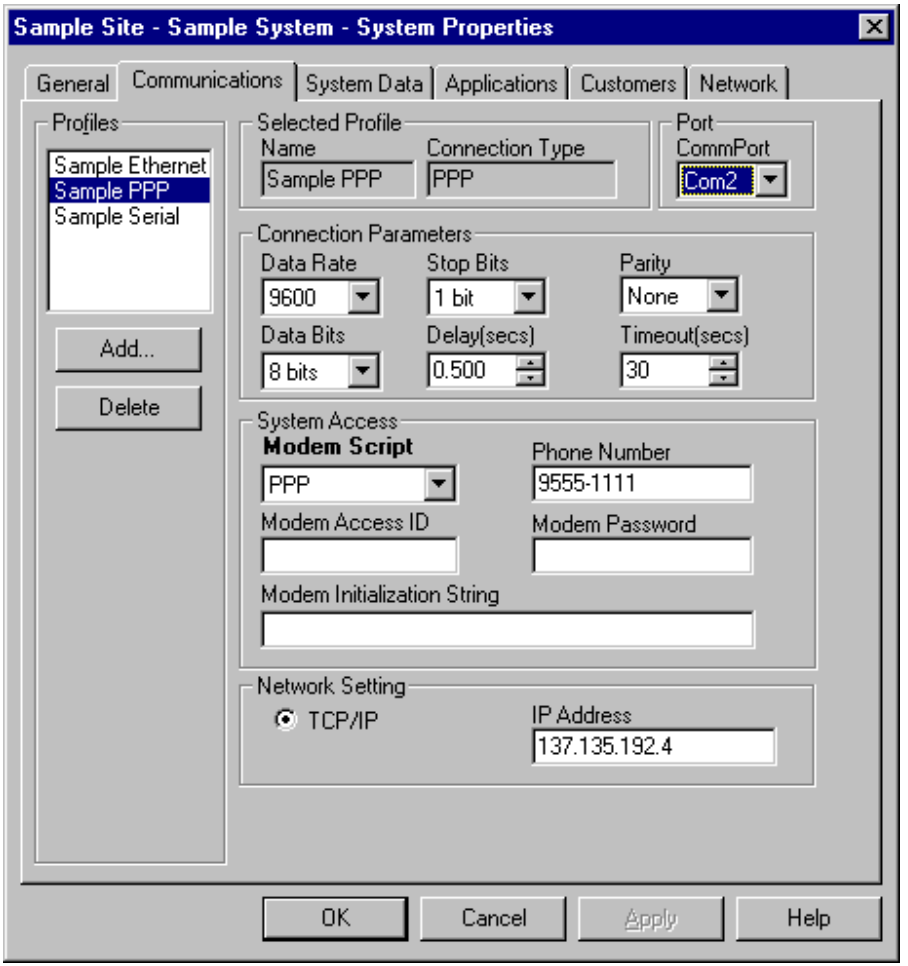
- For Ethernet (Figure 22):
  - — Select the appropriate network protocol.
  - — Enter the IP address that you configured on the Meridian 1 system.
  - — Click Apply.

Figure 22 System Properties—Communications tab—Ethernet Profile



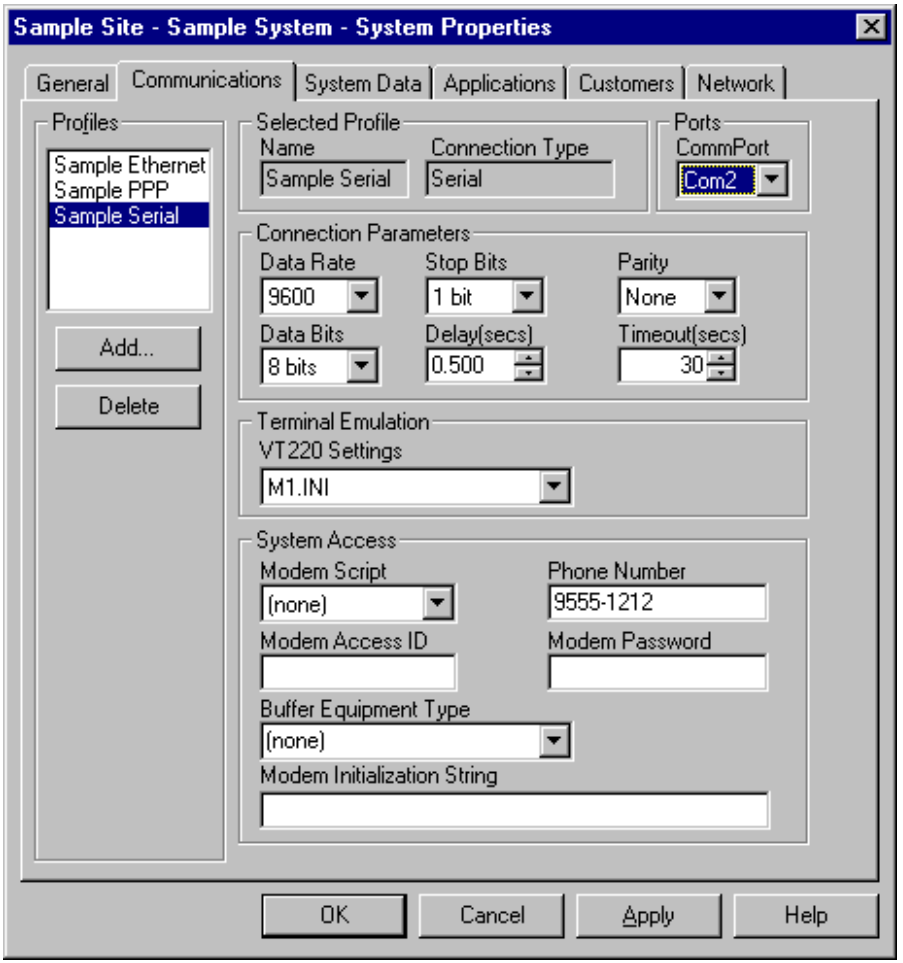
- For PPP (Figure 23):
  - — Enter all modem parameters and dial-up information.
  - — Select PPP in the Modem Script text box.
  - — Set the IP address to the local IP address, as configured on the Meridian 1 system.
  - — Click Apply.

Figure 23 System Properties—Communications tab—PPP Profile



- For Serial (Figure 24):
  - — Enter all modem parameters and dial-up information.
  - — Select the appropriate value in the Modem Script drop-down box. This will usually be “None” unless a specific value is defined for your system.
  - — Click Apply.

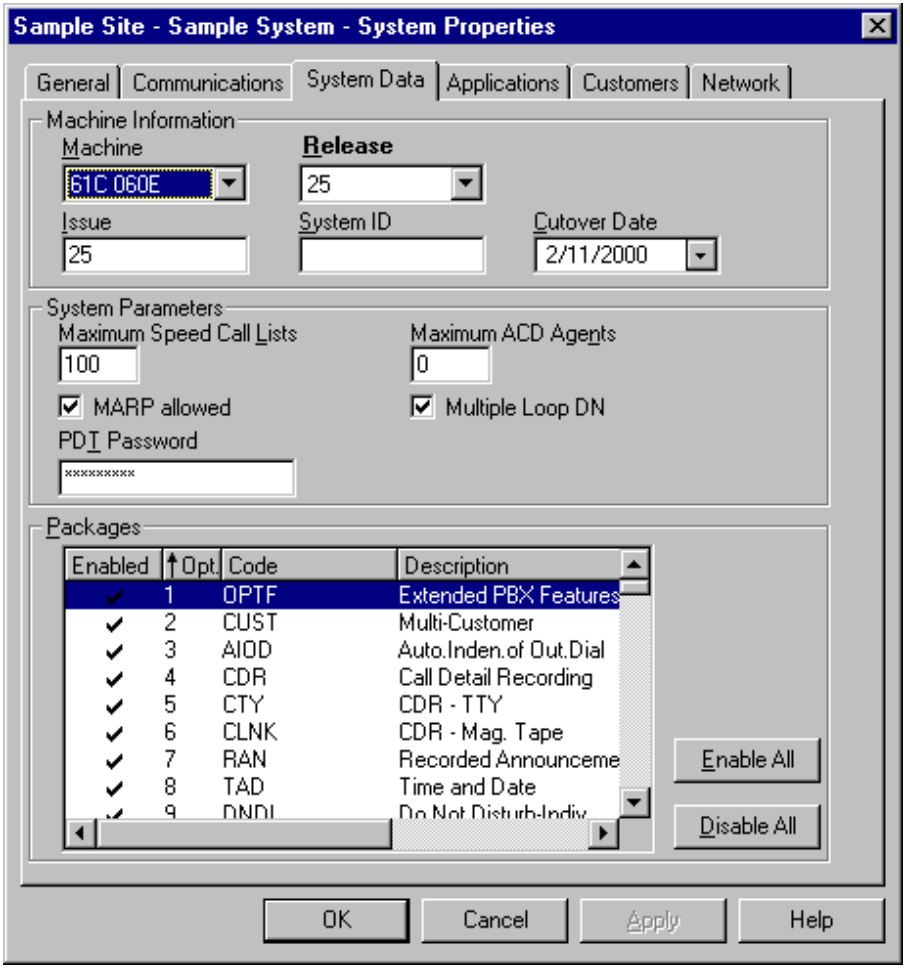
Figure 24 System Properties—Communications tab—Serial Profile



8 Click the System Data tab.

The System Properties dialog box—System Data tab appears (Figure 25). Enter the machine/system type and release version for the system, and enable or disable feature packages. For example, if your Meridian 1 is an Option 61C running X11 Release 25.25 software, use the drop-down boxes to select 61C in the Machine box and 25 in the Release box, and enter 25 in the Issue box. When you have finished entering the information in the System Data tab, click Apply.

Figure 25 System Properties dialog box—System Data tab



Note: For a Succession CSE 1000 Release 1.x system, select 11C as the machine type. Release 1.x systems are configured as Meridian 1 Option 11C systems, and their Media Gateways are configured as Survivable IP Expansion (SIPE) Cabinets.

Note: You can copy this data directly from an installed switch by scheduling an upload using File > Update System Data in the System window. Update System Data uses the communication profile for Station Administration. However, you should configure the Release number here first to allow available applications to show up properly in the Applications Tab.

Note: In the System Parameters box, the PDT Password edit box allows you to set the Level 2 password for the Problem Determination Tool (PDT). If you change this password, you must manually change the PDT password on the system so that they match.

9 Click the Applications tab.

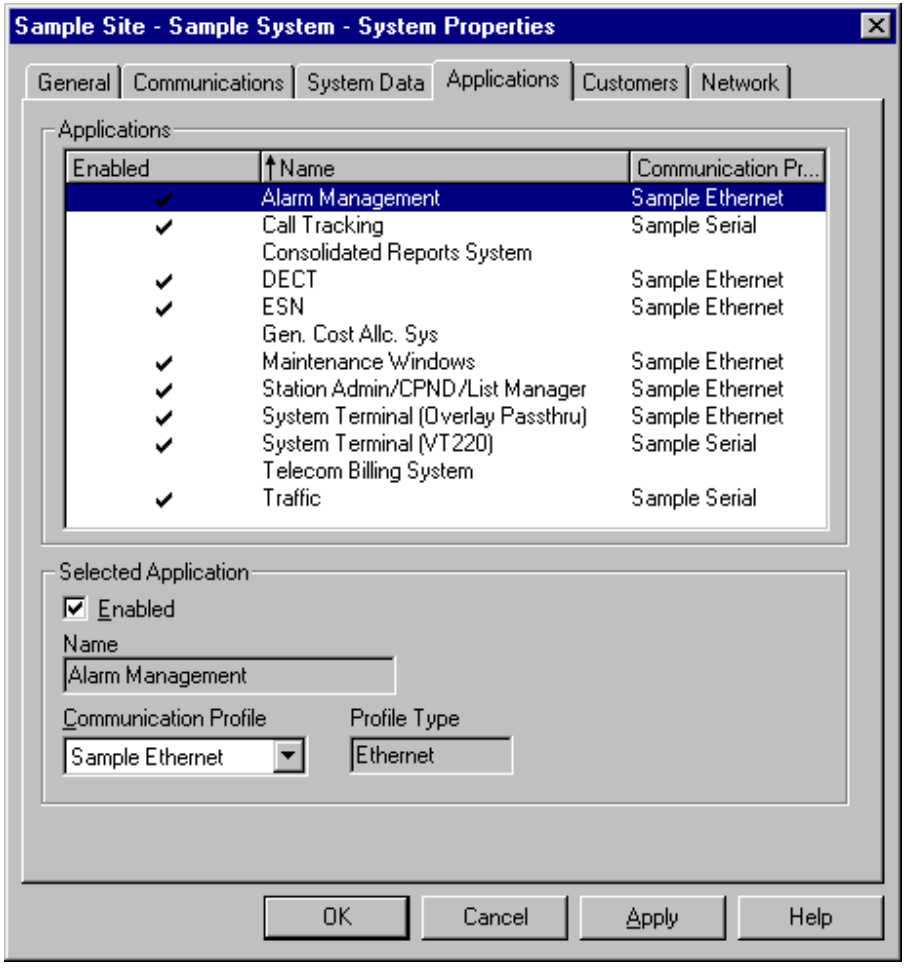
The System Properties dialog box—Applications tab appears (Figure 26).

This tab defines the OTM applications that appear in the System window and the communications profile to be used with each application.

Note: You must enable an application for it to be available in the System window.

Note: Communication profile settings are defined on a site/system basis and are shared by the OTM Server and its Clients. Consequently, if you define a serial communication profile for an OTM application, then both the OTM Server and OTM Client PCs must have a physical serial connection between the site/system and themselves. An OTM Client PC cannot use the COM ports of the OTM Server. Any communication task uses the resources of the PC on which it is running.

Figure 26 System Properties dialog box—Applications tab



To enable an application:

a Select the application in the Applications tab dialog box.

b Select a Communications Profile from the drop-down list in the Selected Application box.

A check mark appears next to the application and the Enabled box is also checked.

To disable an application:

a Select the application in the Applications tab dialog box.

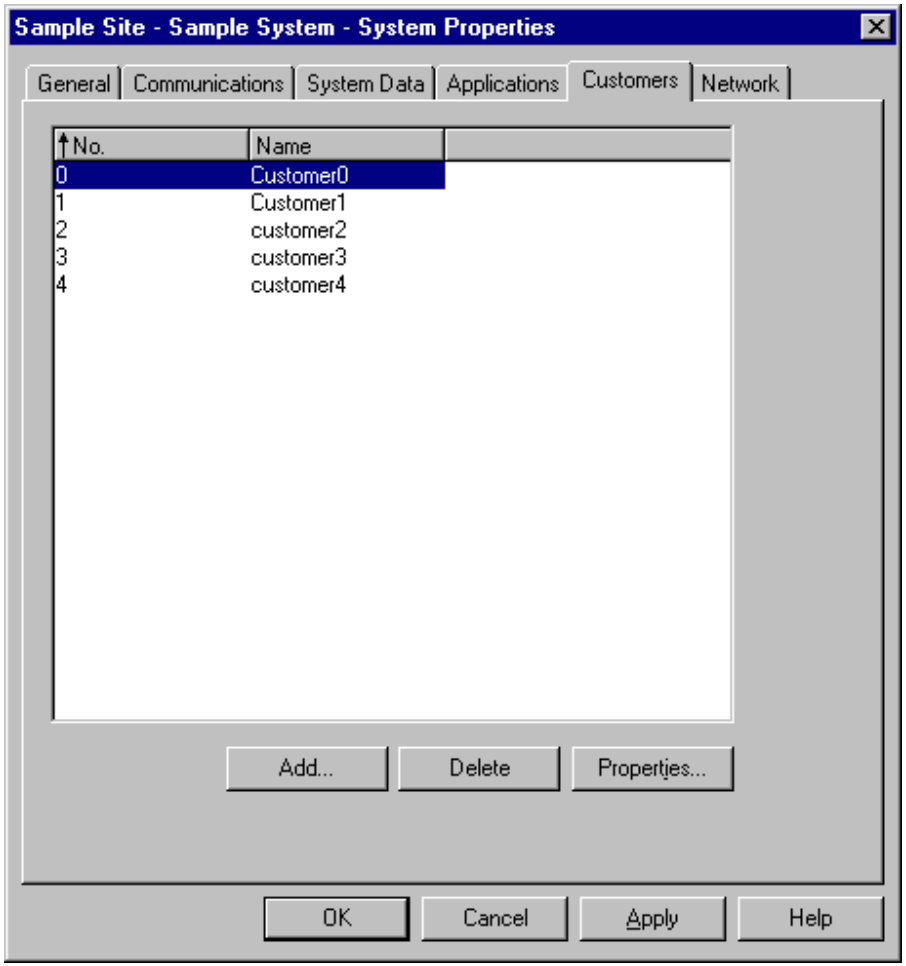
b In the Selected Application box, click the Enabled check box to remove the check mark.

When you have finished entering the information in the Applications tab, click Apply.

10 Click the Customers tab.

The System Properties dialog box—Customers tab appears (Figure 27).

Figure 27 System Properties dialog box—Customers tab



This tab lists the customers currently defined for this Meridian 1 system. You can add new customers, delete customers, or review the properties of a selected customer. When you add a new customer, you configure the Meridian 1 features and numbering plans that are available to the customer. This information is not automatically updated on the Meridian 1 system and must be updated by using the LD 15 customer overlay. LD 15 is the overlay interface that allows customers to configure their systems on the Meridian 1. For more information on overlay interfaces, see the System online Help.

Note: Customer information is required for Station Administration/ CPND and ESN applications.

11 To add a customer:

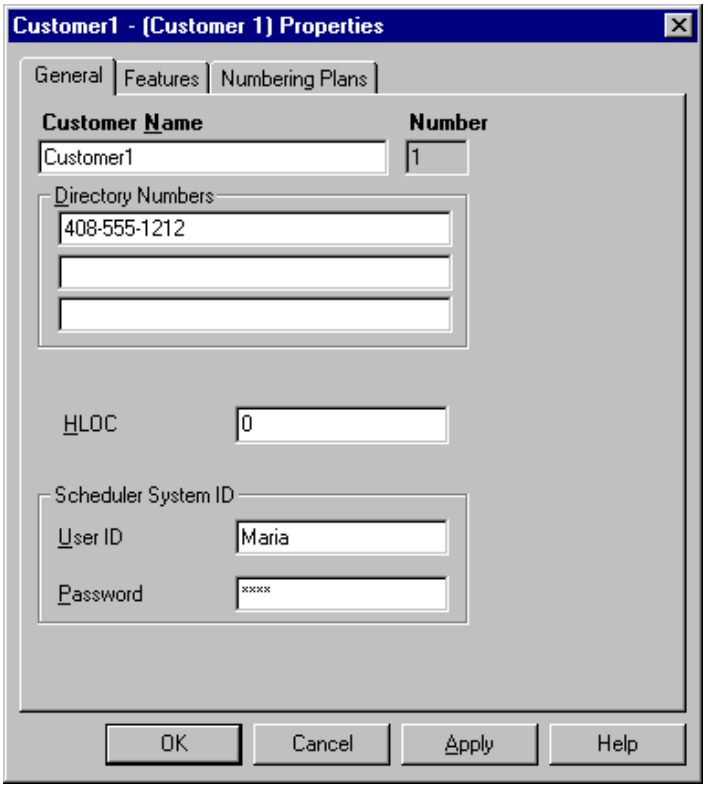
a Click Add in the System Properties dialog box—Customers tab.

b Select a Customer number.

c Click OK.

The Customer Properties dialog box opens with the General tab displayed (Figure 28).

Figure 28 Customer Properties dialog box—General tab



d Fill in the general information for the customer.

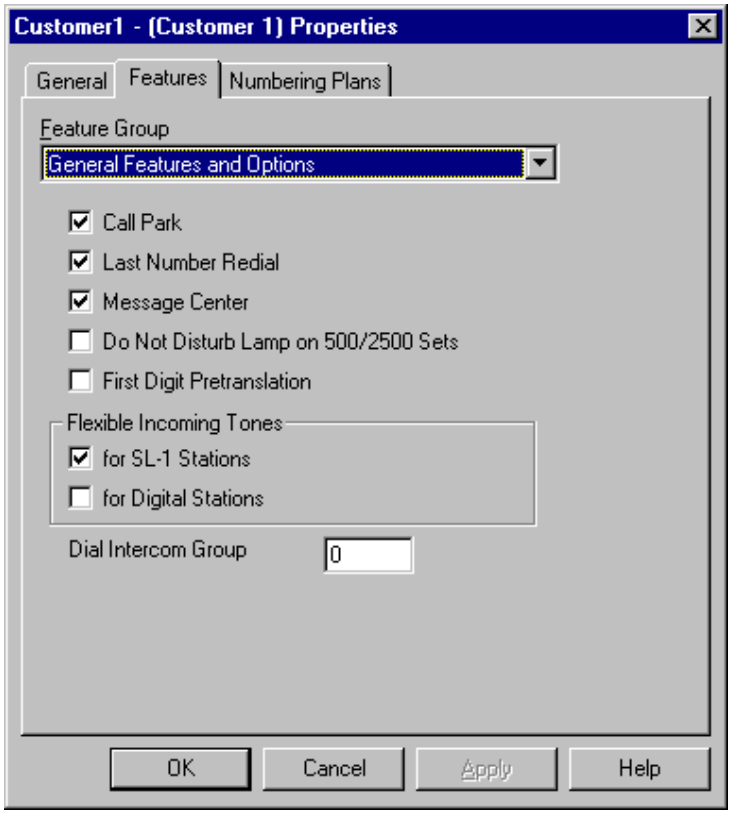
Note: You can copy this data directly from an installed switch by scheduling an upload using File > Update System Data in the System window. Update System Data uses the communication profile for Station Administration. However, you should configure the Release number in the System Data tab first to allow available applications to show up properly in the Applications Tab.

Note: Enter User information in the Scheduler System ID text box if you are using applications with scheduled activities, such as Station Administration/CPND, ESN, and Traffic Analysis.

e Click the Features tab.

The Customer Properties dialog box—Features tab appears (Figure 29).

Figure 29 Customer Properties dialog box—Features tab

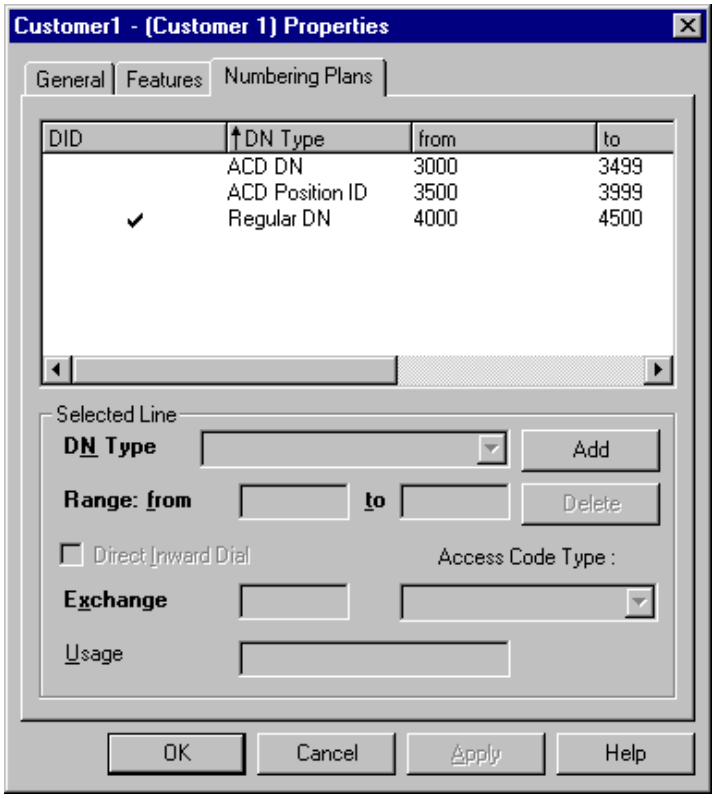


f Fill in the feature information for the customer.

g Click the Numbering Plans tab.

The Customer Properties dialog box—Numbering Plans tab appears (Figure 30).

Figure 30 Customer Properties dialog box—Numbering Plans tab



h Fill in the numbering plan information for the customer.

To make additional entries in the numbering plan:

— Click Add.

— Use the drop-down list to select the DN Type.

— Enter the range of DNs.

The numbering plan information is used to validate DNs in Station Administration.

i When you have finished entering the customer information, click one of the following buttons to save the information:

— OK adds the customer and returns to the System properties sheet.

— Cancel closes the dialog box without adding the customer.

— Apply adds the customer and leaves the Customer Properties dialog box open so that you may add other information for this customer.

12 To delete a customer, click Delete in the System Properties dialog box—Customers tab. A delete confirmation box opens. Click OK.

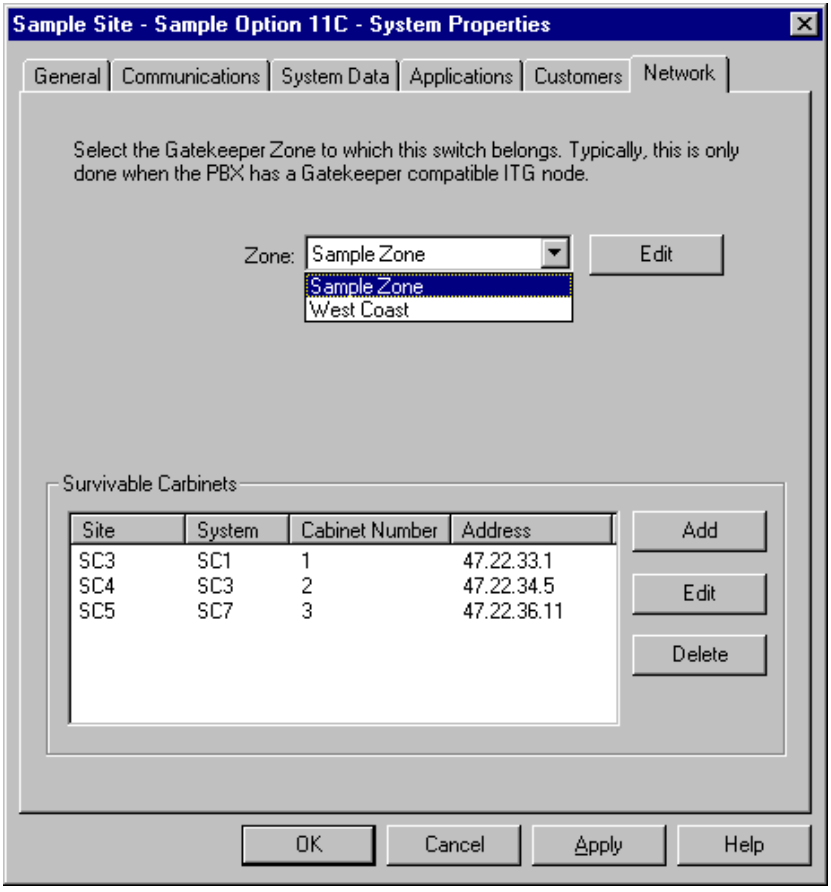
13 To modify customer information, click Properties in the System Properties dialog box—Customers tab. The Customer Properties dialog box opens with the General tab displayed. Modify information in the appropriate tabs, and then click OK.

14 Click the Network tab.

The System Properties dialog box—Network tab opens (Figure 27).

Note: The Network tab is used to both add and delete Survivable IP Expansion Cabinets and Survivable Media Gateways. On Meridian 1 systems, all SurvivableIP Expansion Cabinets must be deleted before the main Meridian 1 system can be deleted.

Figure 31 System Properties dialog box—Network tab



a If the system is a Succession CSE 1000 Release 1.x system or a Meridian 1 with a Gatekeeper compatible ITG node, select the Gatekeeper Zone from the drop-down list.

Note: If the system does not contain a Gatekeeper-compatible ITG Trunk node and you continue, you add the system to a Gatekeeper Zone for display in the OTM Windows and Web Navigators only.

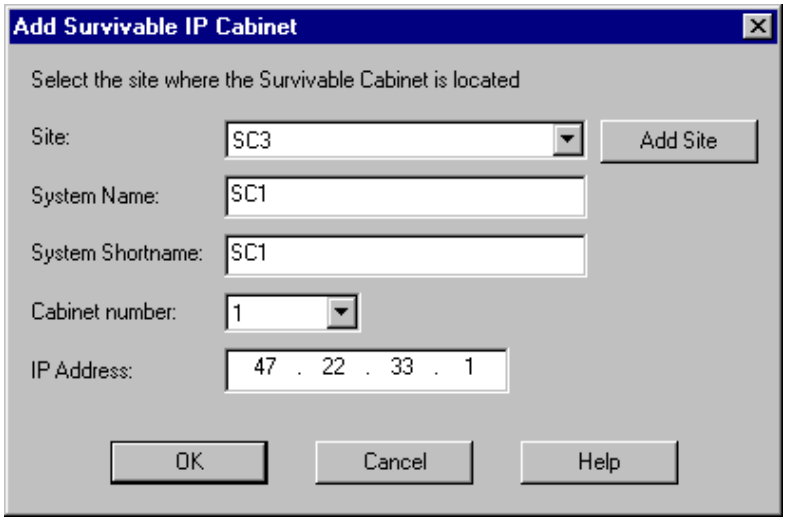
Note: For information on managing Gatekeeper Zones, see "Managing gatekeeper zones" on page 132.

b If the system is not a pre-Release 2.0 Succession CSE 1000 or a Meridian 1 Option 11C with Survivable IP Expansion cabinets, go to step 15.

c If the system is a pre-Release 2.0 Succession CSE 1000 or a Meridian 1 Option 11C that is being configured to support Survivable IP Expansion cabinets, click Add to add a cabinet.

The Add Survivable IP Cabinet dialog box opens (Figure 32).

Figure 32 Add Survivable IP Cabinet dialog box



d Select the Site and Cabinet number from the drop-down lists, and enter the System Name, System Shortname, and IP Address for this cabinet.

For additional information on Option 11C survivable expansion cabinets, see *Option 11C Planning and Installation* (553-3021-210).

For additional information on the Succession CSE 1000 Media Gateway, see *Succession Communication Server for Enterprise 1000 Planning and Installation* (553-3023-210).

e Click OK.

A new System Properties dialog box opens.

Note: The Applications tab settings are copied from the Main Cabinet system properties. If the Default Ethernet communication profile is selected for the applications on the Main Cabinet that are likely to be used by the Survivable IP Expansion Cabinets, you can click OK to add the SIPE Cabinet and return to the System Properties dialog box—Network tab for the Main Cabinet (step 14b).

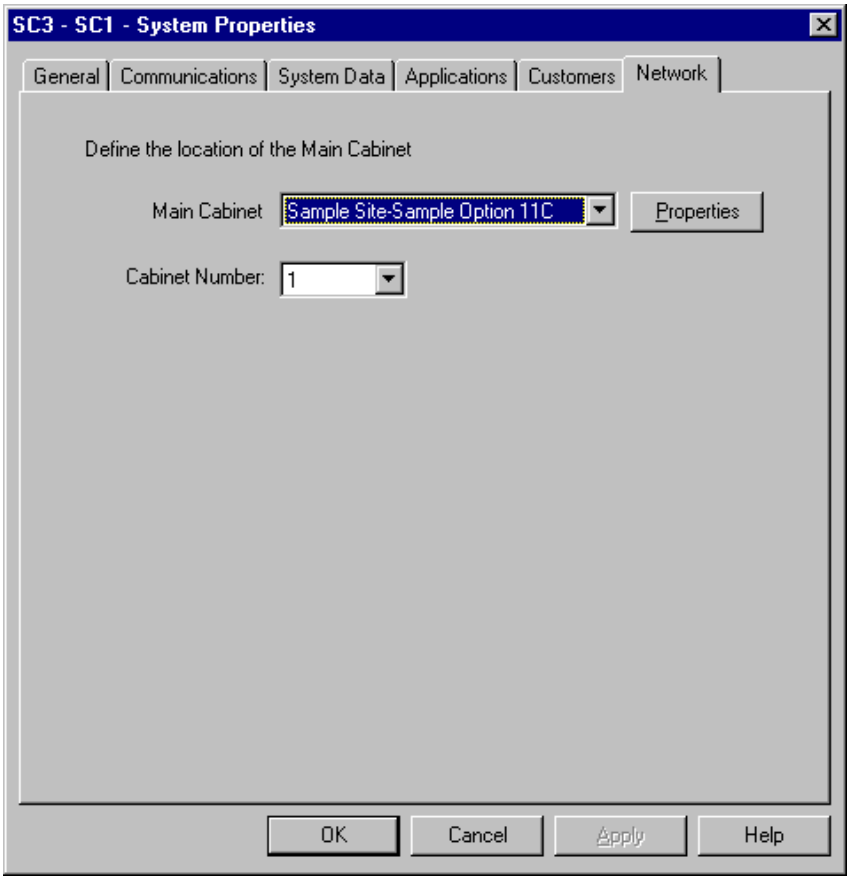
f Enter the requested information for the General and Communications tabs (see steps 4 through 7 in this procedure).

Note: The IP address entered in the Add Survivable IP Cabinet dialog box is copied into the default Ethernet communication profile.

Note: The System Data and Customers tabs are read-only. These tabs contain the information from the main cabinet.

g Click the Network tab. The System Properties dialog box—Network tab appears (Figure 33).

Figure 33 Survivable Cabinet System Properties dialog box—Network tab



h Select the Main Cabinet and the Cabinet Number from the drop-down lists.

i Click OK to close the System Properties dialog box for the Survivable IP Expansion cabinet and return to the System Properties dialog box—Network tab for the Main Cabinet.

15 In the System Properties dialog box, click one of the following buttons:

- OK adds the system and closes the dialog box.
- Cancel closes the dialog box without adding the system.
- Apply adds the system and leaves the dialog box open.
- Help provides online Help.

The new system is added to the tree under the selected site.

Adding a Release 2.0 and later Succession CSE 1000 system

Note: Pre-Release 2.0 Succession CSE 1000 systems that were added in an earlier version of OTM cannot be converted to a Succession CSE 1000 Release 2.0 system. You must delete the pre-Release 2.0 system and add a new Succession CSE 1000 Release 2.0 system.

You can add as many as 256 systems (including non-Succession CSE 1000 systems) to a site. You must have administrator privileges to add a system.

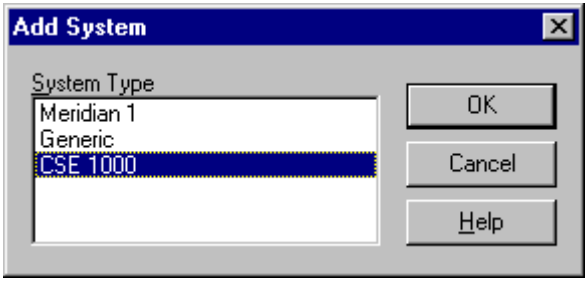
1 In the Navigator window, select the desired site.

Note: If you are adding a new system from within the New Site Properties window, skip to step 3 in this procedure.

2 Choose Configuration > Add System, or use the right mouse button pop-up menu.

The Add System dialog box opens (Figure 34).

Figure 34 Add System dialog box

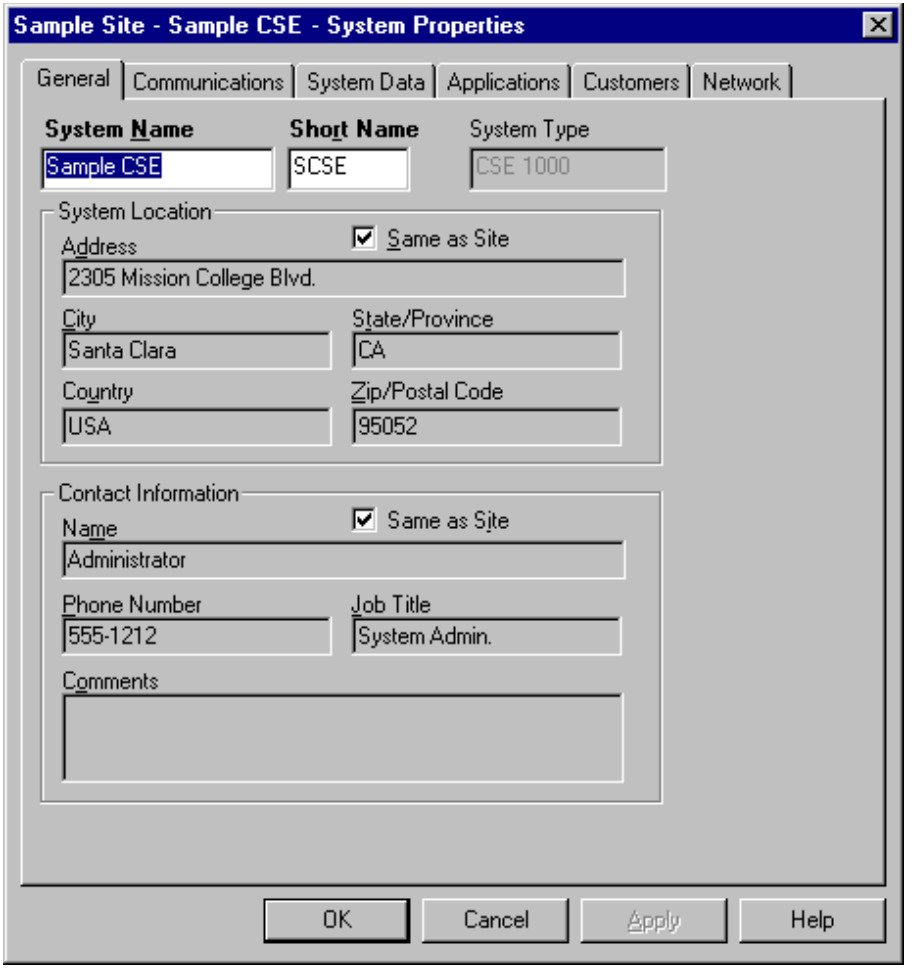


3 In the Add System dialog box, select CSE 1000 and click OK.

Note: You may need to install additional software to enable other system types not listed in Figure 34. Follow the installation instructions included with your order.

The System Properties dialog box opens with the General tab displayed (Figure 35).

Figure 35 System Properties dialog box—General tab



4 Enter the System Name and Short Name (required fields) and other information as needed. Click Apply.

You can make system location and contact information the same as site information by clicking the Same as Site check box.

Note: Bold fields indicate required information. To change a value, edit the field. Some fields may have a list of predefined choices. An arrow within a field indicates a drop-down list of choices. Click the arrow to select from the list. For more detailed information, refer to the online Help.

5 To add a new communications profile, click the System Properties dialog box—Communications tab.

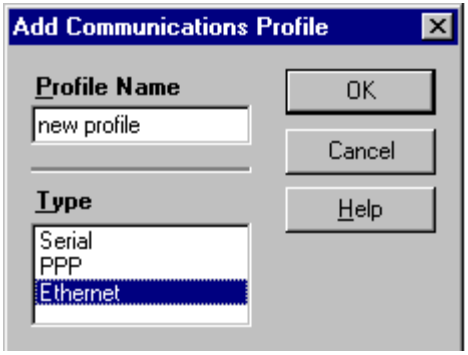
This tab defines the types of communications profiles that can be applied to system applications (one profile can be used for multiple applications).

Note: OTM is shipped with a default communication profile. The Default profile is an Ethernet profile, and it cannot be deleted.

6 Click Add.

The Add Communications Profile dialog box appears (Figure 36).

Figure 36 Add Communications Profile dialog box

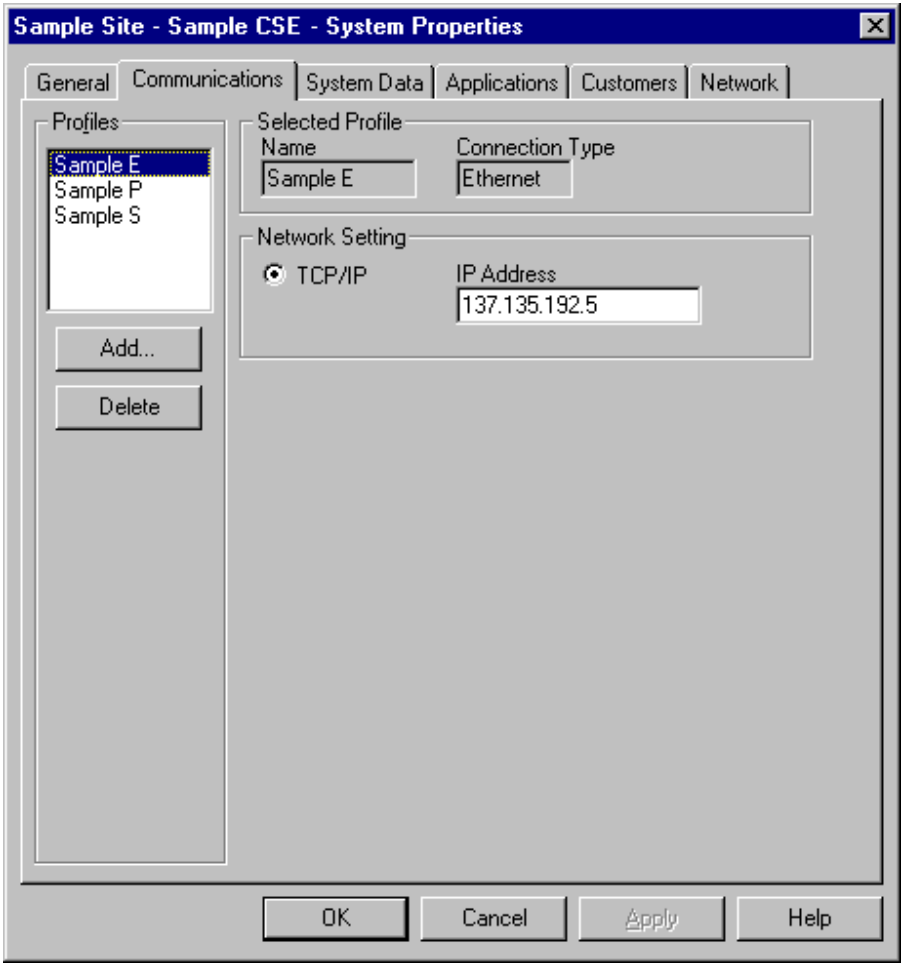


Select a communications type from the Type box, enter a Profile Name, and then click OK to return to the Communications tab.

7 Fill in the communications information for the new profile:

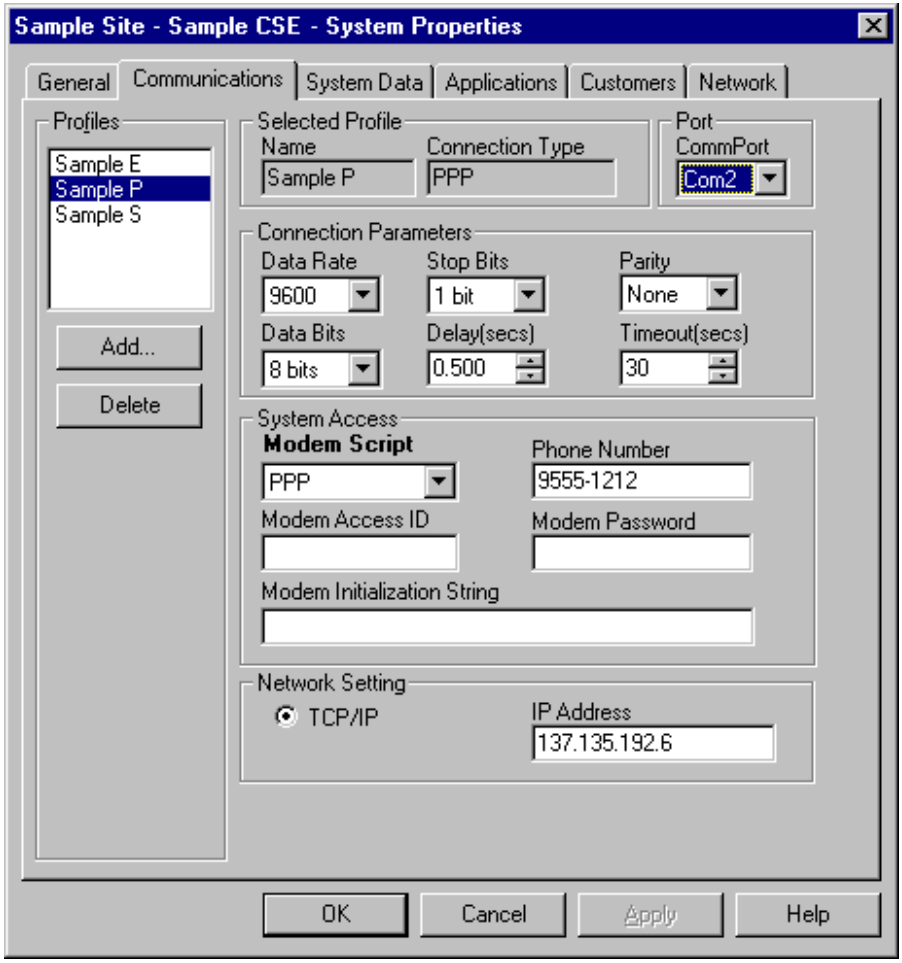
- For Ethernet (Figure 37):
  - — Select the appropriate network protocol.
  - — Enter the IP address that you configured on the Succession CSE 1000 system.
  - — Click Apply.

Figure 37 System Properties—Communications tab—Ethernet Profile



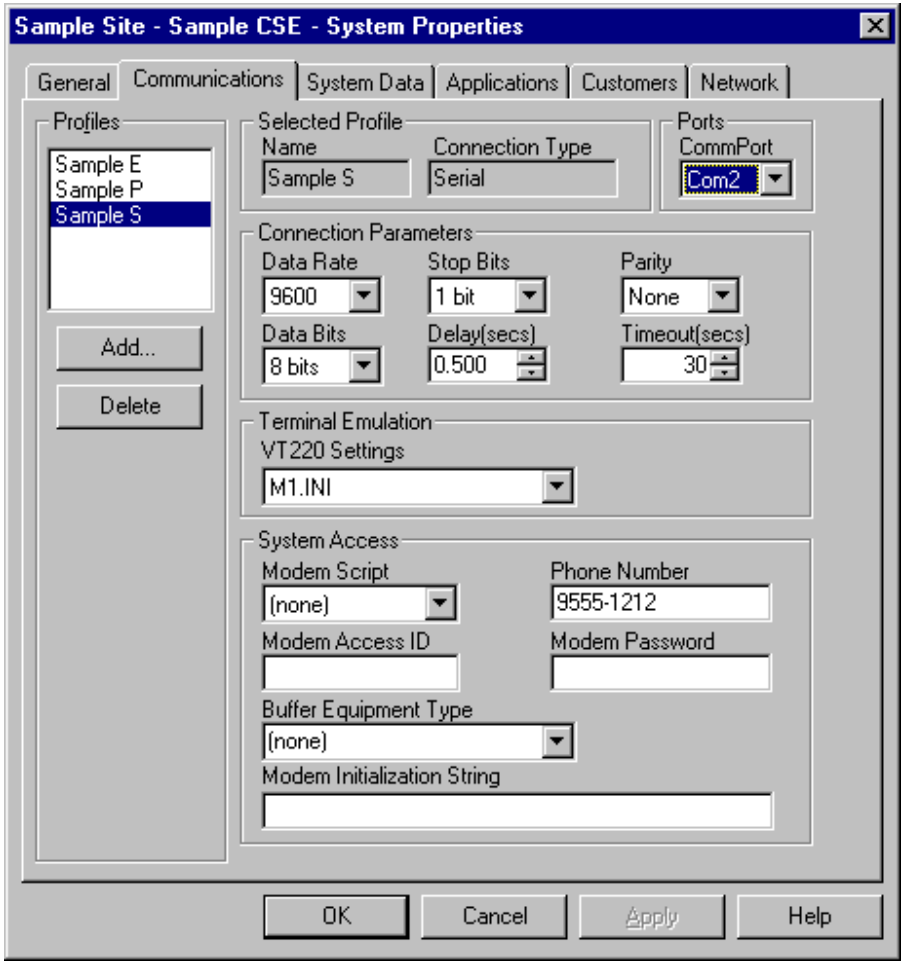
- For PPP (Figure 38):
  - Enter all modem parameters and dial-up information.
  - Select PPP in the Modem Script text box.
  - Set the IP address to the local IP address, as configured on the Succession CSE 1000 system.
  - Click Apply.

Figure 38 System Properties—Communications tab—PPP Profile



- For Serial (Figure 39):
  - — Enter all modem parameters and dial-up information.
  - — Select the appropriate value in the Modem Script drop-down box. This is usually “None” unless a specific value is defined for your system.
  - — Click Apply.

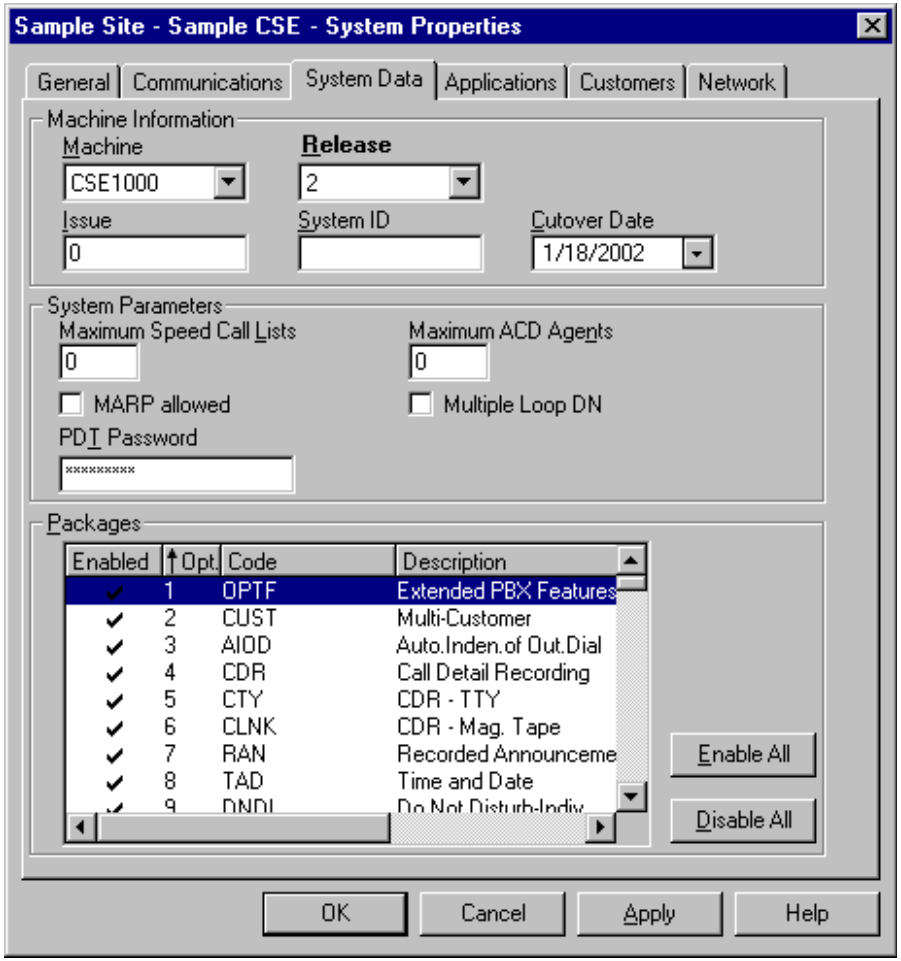
Figure 39 System Properties—Communications tab—Serial Profile



8 Click the System Data tab.

The System Properties dialog box—System Data tab appears (Figure 40). Enter the machine/system type and release version for the system, and enable or disable feature packages. For example, if your system is a Succession CSE 1000 Release 2.0, use the drop-down boxes to select CSE 1000 in the Machine box and 2 in the Release box. When you have finished entering the information in the System Data tab, click Apply.

Figure 40 System Properties dialog box—System Data tab



Note: You can copy this data directly from an installed switch by scheduling an upload using File > Update System Data in the System window. Update System Data uses the communication profile for Station Administration. However, you should configure the Release number in the System Data tab first to allow available applications to show up properly in the Applications Tab.

Note: In the System Parameters box, the PDT Password edit box allows you to set the Level 2 password for the Problem Determination Tool (PDT). If you change this password, you must manually change the PDT password on the system so that they match.

9 Click the Applications tab.

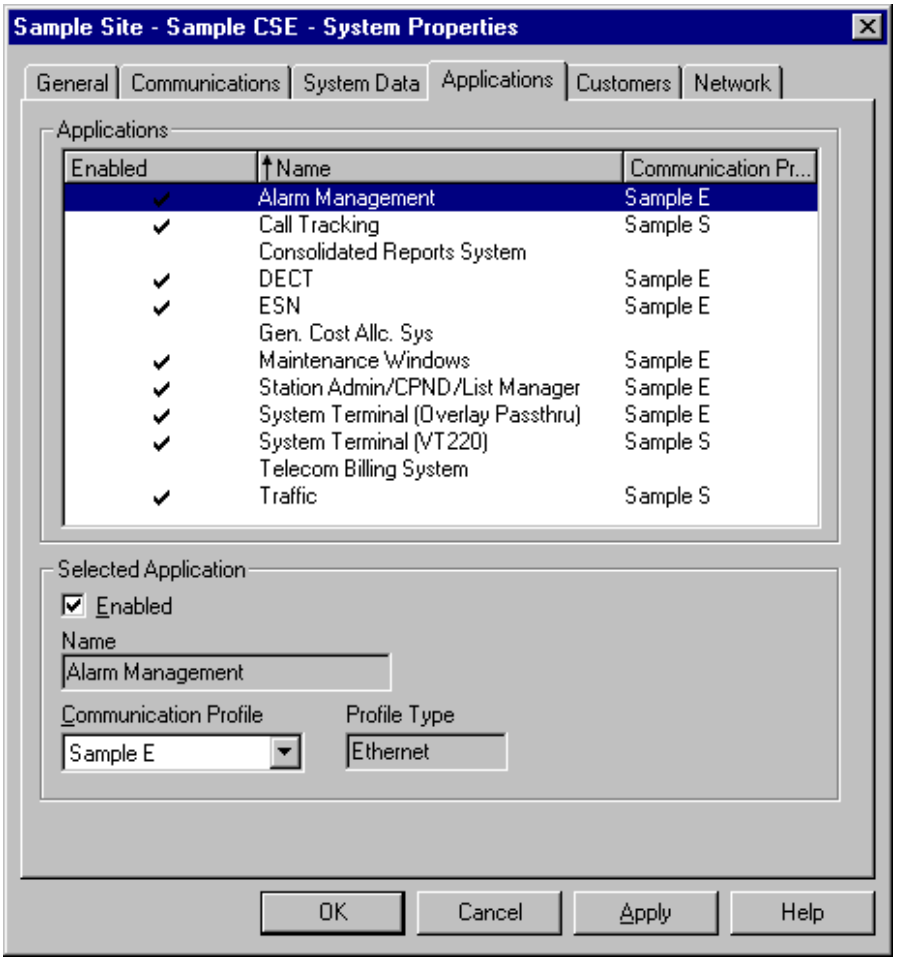
The System Properties dialog box—Applications tab appears (Figure 41).

This tab defines the OTM applications that appear in the System window and the communications profile to be used with each application.

Note: You must enable an application for it to be available in the System window.

Note: Communication profile settings are defined on a site/system basis and are shared by the OTM Server and its Clients. Consequently, if you define a serial communication profile for an OTM application, then both the OTM Server and OTM Client PCs must have a physical serial connection between the site/system and themselves. An OTM Client PC cannot use the COM ports of the OTM Server. Any communication task uses the resources of the PC on which it is running.

Figure 41 System Properties dialog box—Applications tab



To enable an application:

a Select the application in the Applications tab dialog box.

b Select a Communication Profile from the drop-down list in the Selected Application box.

A check mark appears next to the application, and the Enabled box is also checked.

To disable an application:

a Select the application in the Applications tab dialog box.

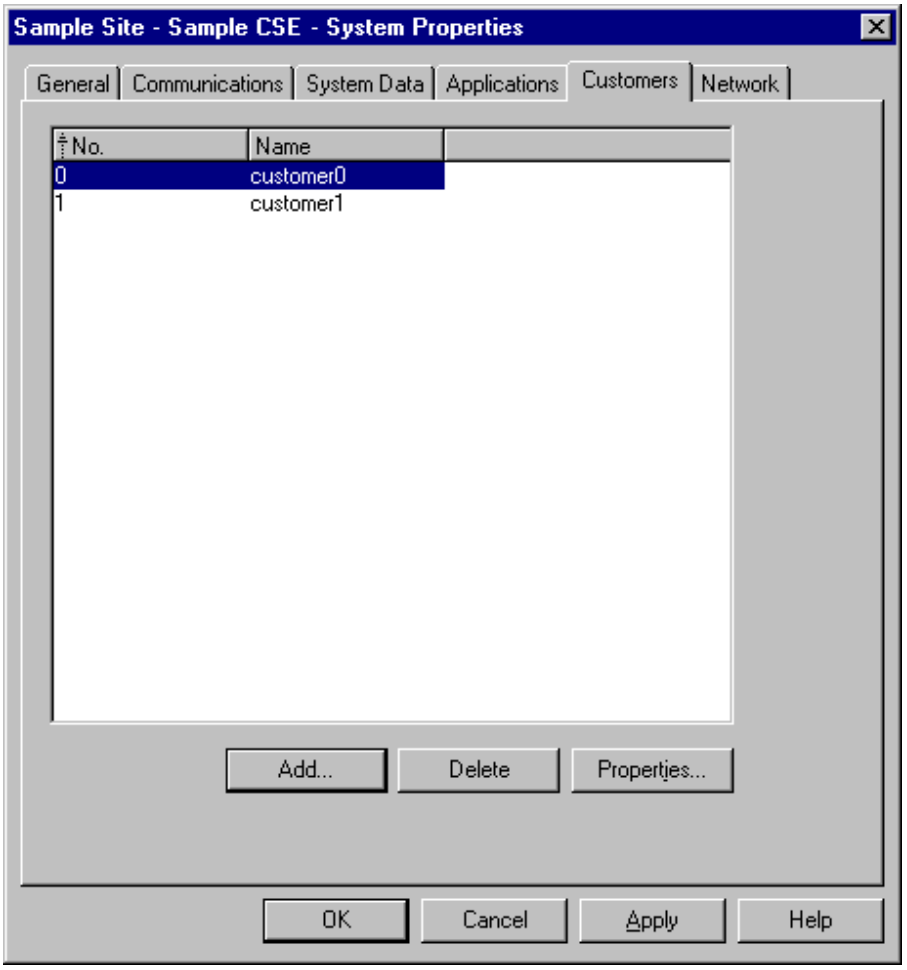
b In the Selected Application box, click the Enabled check box to remove the check mark.

When you have finished entering the information in the Applications tab, click Apply.

10 Click the Customers tab.

The System Properties dialog box—Customers tab appears (Figure 42).

Figure 42 System Properties dialog box—Customers tab



This tab lists the customers currently defined for this Succession CSE 1000 system. You can add new customers, delete customers, or review the properties of a selected customer. When you add a new customer, you configure the Succession CSE 1000 features and numbering plans that are available to the customer. This information is not automatically updated on the Succession CSE 1000 system and must be updated by using the LD 15 customer overlay. LD 15 is the overlay interface that allows customers to configure their systems on the Succession CSE 1000. For more information on overlay interfaces, see the System online Help.

Note: Customer information is required for Station Administration/ CPND and ESN applications.

11 To add a customer:

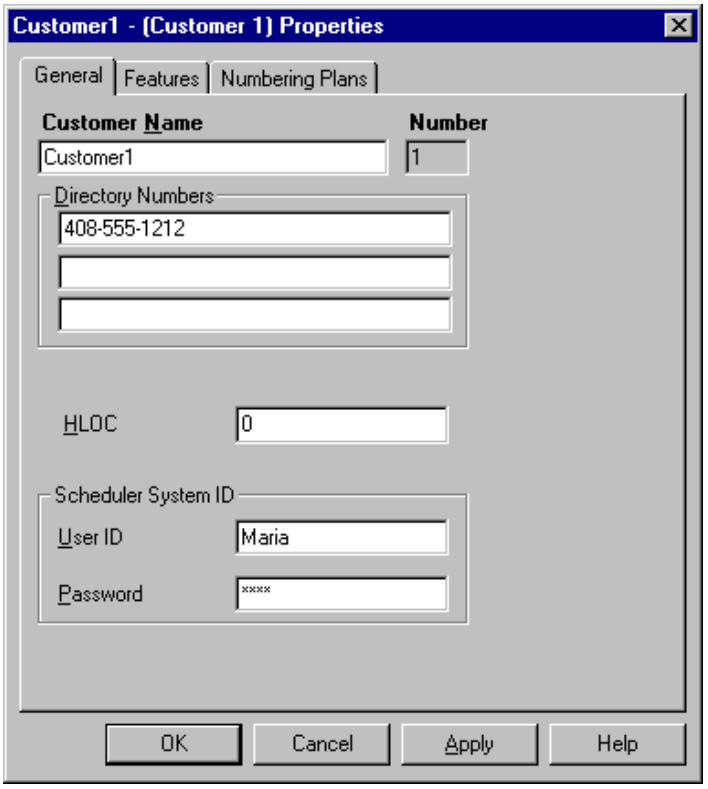
a Click Add in the System Properties dialog box—Customers tab.

b Select a Customer number.

c Click OK.

The Customer Properties dialog box opens with the General tab displayed (Figure 43).

Figure 43 Customer Properties dialog box—General tab



d Fill in the general information for the customer.

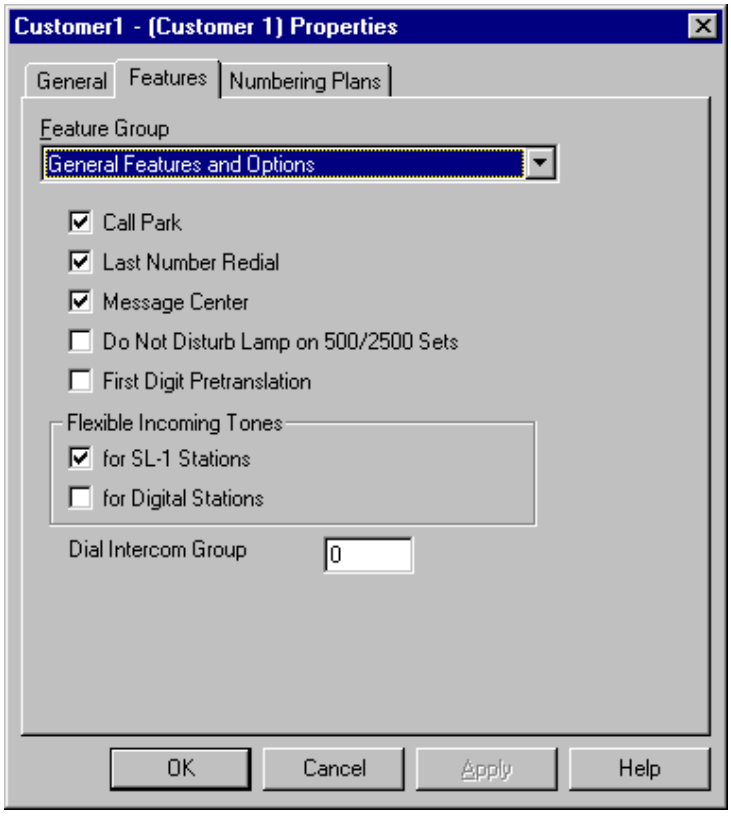
Note: You can copy this data directly from an installed switch by scheduling an upload using File > Update System Data in the System window. Update System Data uses the communication profile for Station Administration. However, you should configure the Release number here first to allow available applications to show up properly in the Applications tab.

Note: Enter User information in the Scheduler System ID text box if you are using applications with scheduled activities, such as Station Administration/CPND, ESN, and Traffic Analysis.

e Click the Features tab.

The Customer Properties dialog box—Features tab appears (Figure 44).

Figure 44 Customer Properties dialog box—Features tab

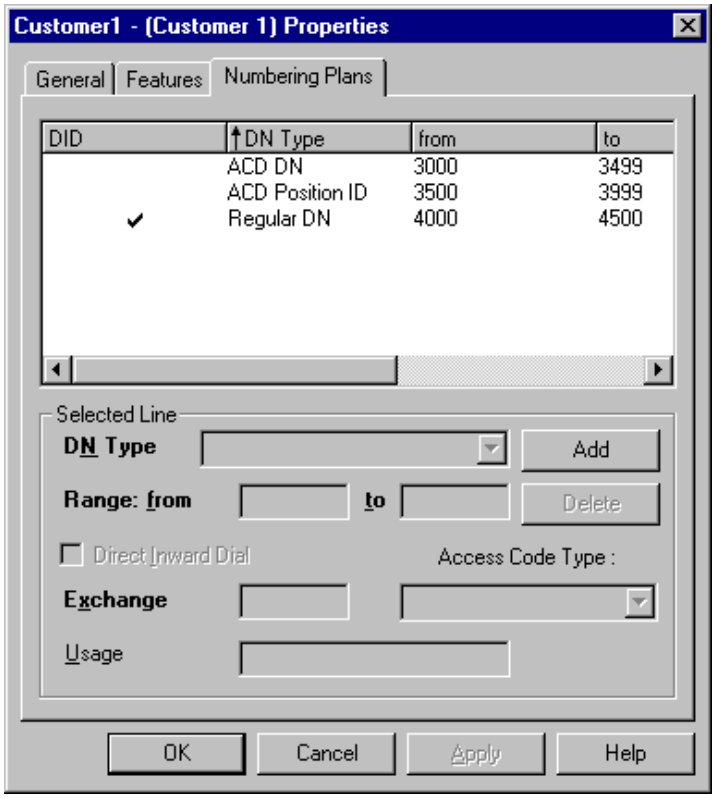


f Fill in the feature information for the customer.

g Click the Numbering Plans tab.

The Customer Properties dialog box—Numbering Plans tab appears (Figure 45).

Figure 45 Customer Properties dialog box—Numbering Plans tab



h Fill in the numbering plan information for the customer.

The numbering plan information is used to validate DNs in Station Administration.

12 When you have finished entering the customer information, click one of the following buttons to save the information:

- OK adds the customer and returns to the System properties sheet.
- Cancel closes the dialog box without adding the customer.
- Apply adds the customer and leaves the Customer Properties dialog box open so that you can add other information for this customer.

13 To delete a customer, click Delete in the System Properties dialog box—Customers tab. A delete confirmation box opens. Click OK.

14 To modify customer information, click Properties in the System Properties dialog box—Customers tab. The Customer Properties dialog box opens with

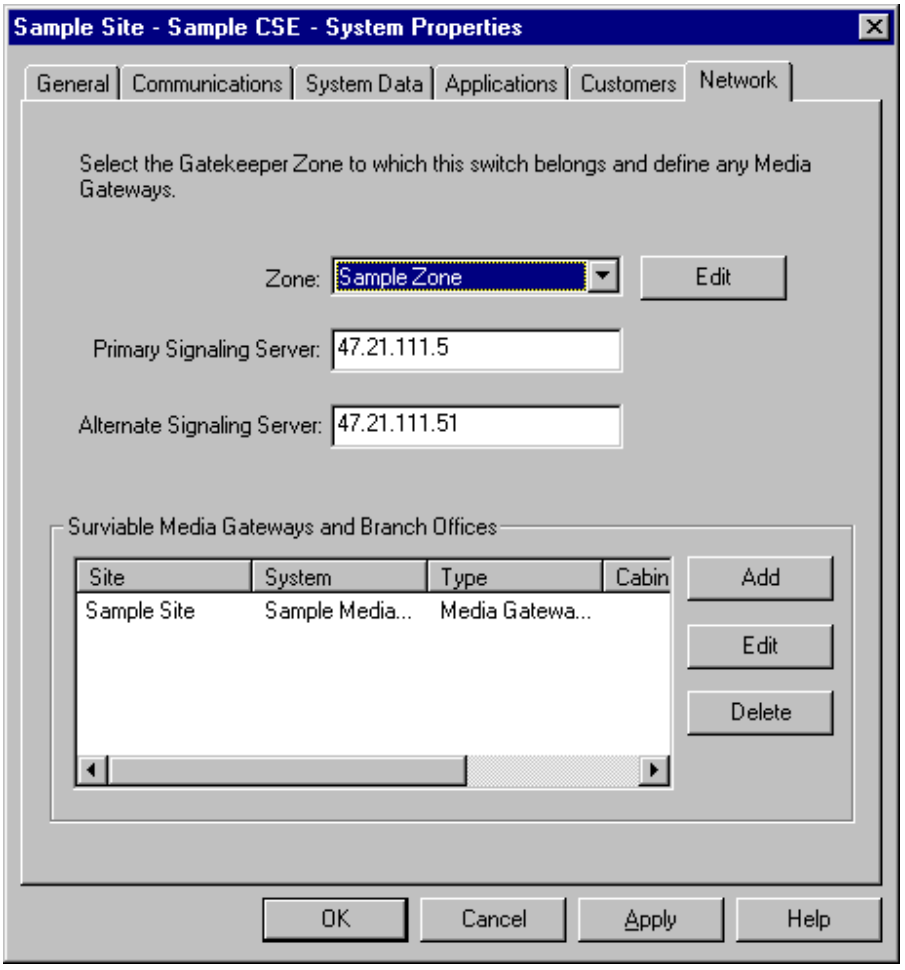
the General tab displayed. Modify information in the appropriate tabs and click OK.

15 Click the Network Tab.

The System Properties dialog box—Network tab opens (Figure 46).

Note: The Network tab is used to both add and delete Survivable Media Gateways and Branch Offices.

Figure 46 System Properties dialog box—Network tab



a Select the Gatekeeper Zone from the drop-down list, and enter the IP address or host name for the Primary Signaling Server. You can also define an Alternate (redundant) Signaling Server.

Note: For information on managing Gatekeeper Zones, see "Managing gatekeeper zones" on page 132.

b To add a Survivable Media Gateway or Succession Branch Office, click Add.

The Add Associated Equipment dialog box opens (Figure 47).

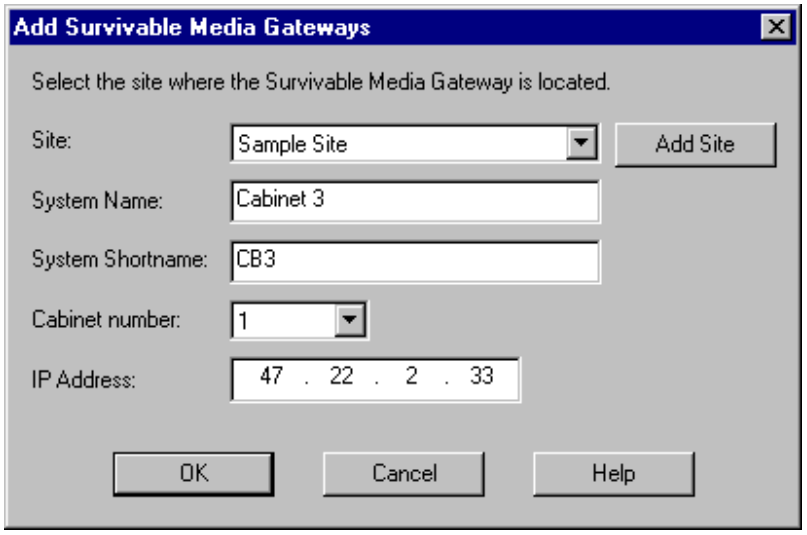
Figure 47 Add Associated Equipment dialog box

c To add a Survivable Media Gateway:

Select Survivable Media Gateway and click OK.

The Add Survivable Media Gateways dialog box opens (Figure 48).

Figure 48 Add Survivable Media Gateways dialog box



Select the Site and Cabinet number from the drop-down lists, and enter the System Name, System Shortname, and IP Address for this Media Gateway.

Click OK.

For additional information on the Succession CSE 1000 Media Gateway, see *Succession Communication Server for Enterprise 1000 Planning and Installation* (553-3023-210).

d To add a Succession Branch Office:

In the Add Associated Equipment dialog box (Figure 47 on page 128), select Succession Branch Office and click OK.

A new System Properties dialog box opens (Figure 49).

Note: A Branch Office contains a call processor for connection to the local PSTN and for analog devices such as FAX machines. IP telephones are located at the Branch Office; however, under normal conditions, call processing for these telephones is handled by the Call Server at the main office. The Branch Office and the Main Office are connected by IP Trunks, Virtual Trunks, or through trunks to the PSTN.

Note: IP telephones must be configured on both the Main Office and the Branch Office. Use Station Administration to add the telephones to both systems. You can copy and paste a telephone from one system to the other.

Enter the information in the System Properties dialog box—General, Communications, System Data, Applications, and Customers tabs as outlined in steps 4 through 13 of this procedure

Note: Unlike a Media Gateway, a Branch Office has its own copy of call processing code, and may be running a different version of system software. For this reason, you need to configure the System Data and Applications tabs as you do for a Call Server.

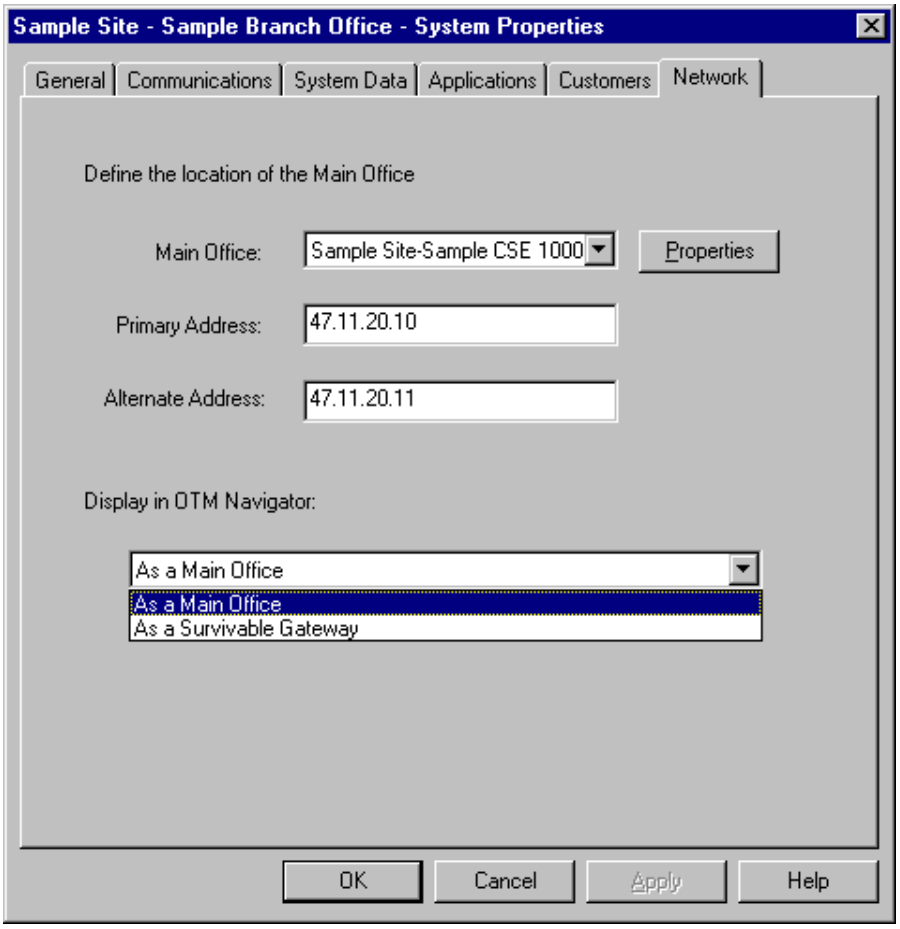
Note: A Branch Office must be associated with a Succession CSE 1000 Main Office and both must be in the same Gatekeeper Zone.

For additional information on the Branch Office feature, see *Succession Communication Server for Enterprise 1000 Branch Office Guide* (553-3023-221).

Click the Network tab.

The System Properties dialog box—Network tab opens (Figure 49).

Figure 49 Branch Office System Properties dialog box—Network tab



Select the Main Office from the drop-down list.

Note: You can click Properties to display the System Properties of the selected Main Office.

Click the Signaling Server radio button and enter the IP address or host name for the Signaling Server. You may also define an Alternate (redundant) Signaling Server.

Use the drop-down list to select whether this Branch Office should be displayed as a Main Office or a Survivable Gateway in the OTM Windows and Web Navigators.

Click OK.

16 In the System Properties dialog box, click one of the following buttons:

- OK adds the system and closes the dialog box.
- Cancel closes the dialog box without adding the system.
- Apply adds the system and leaves the dialog box open.
- Help provides online Help.

The new system is added to the tree under the selected site.

Managing gatekeeper zones

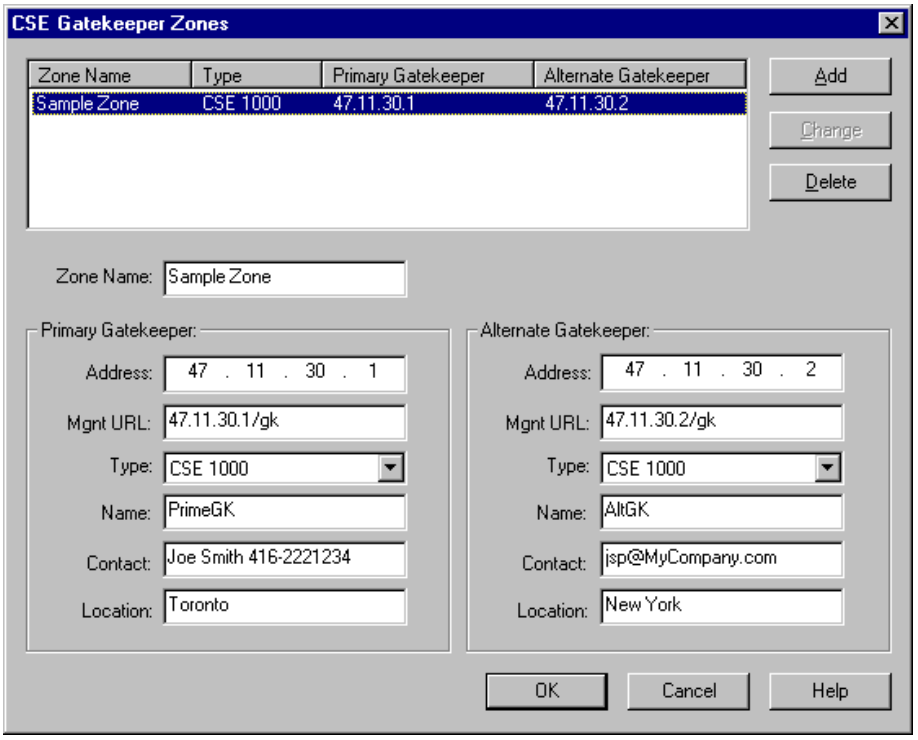
The Gatekeeper Zones dialog box is used to add, delete, and change gatekeeper zones.

To add a gatekeeper zone:

1 In the System Properties dialog box—Network tab for a Meridian 1 system (Figure 31 on page 109) or a Succession CSE 1000 Call Server (Figure 46 on page 127), click Edit located next to the Gatekeeper Zone drop-down list.

The Gatekeeper Zones dialog box opens (Figure 50).

Figure 50 Gatekeeper Zones dialog box



2 Enter a Zone Name. The Zone Name is required and must be unique. The Zone Name appears in the Windows and Web Navigators.

3 Enter the IP Address of the Primary Gatekeeper.

4 Enter the management URL for the Primary Gatekeeper.

5 Use the drop-down list to select the type of gatekeeper:

- CSE 1000 - for a Succession CSE 1000 call server
- CS 3000 - for a Succession CS 3000
- Other - for a third-party non-Nortel Networks gatekeeper

6 Enter a Name, Contact, and Location for the gatekeeper. These fields each have a maximum length of 30 characters. The Gatekeeper Name is required. The Contact and Location fields are optional.

7 If desired, you may assign an optional Alternate Gatekeeper to the zone by repeating steps 2 through 6 for the Alternate Gatekeeper.

8 Click Add to add the new gatekeeper zone to the list.

9 Click OK to close the Gatekeeper Zones dialog box and return to the System Properties dialog box—Network tab.

To modify the information on a gatekeeper zone:

1 In the System Properties dialog box—Network tab for a Meridian 1 system (Figure 31 on page 109) or a Succession CSE 1000 Call Server (Figure 46 on page 127), click Edit located next to the Gatekeeper Zone drop-down list.

The Gatekeeper Zones dialog box opens (Figure 50 on page 133).

2 Select a gatekeeper zone from the list.

3 Edit the fields as desired.

4 Click Change.

5 Click OK to close the Gatekeeper Zones dialog box and return to the System Properties dialog box—Network tab.

To delete a gatekeeper zone:

1 In the System Properties dialog box—Network tab for a Meridian 1 system (Figure 31 on page 109) or a Succession CSE 1000 Call Server (Figure 46 on page 127), click Edit located next to the Gatekeeper Zone drop-down list.

The Gatekeeper Zones dialog box opens (Figure 50 on page 133).

2 Select a gatekeeper zone from the list.

3 Click Delete.

4 Click OK to close the Gatekeeper Zones dialog box and return to the System Properties dialog box—Network tab.

Adding a Generic system or device

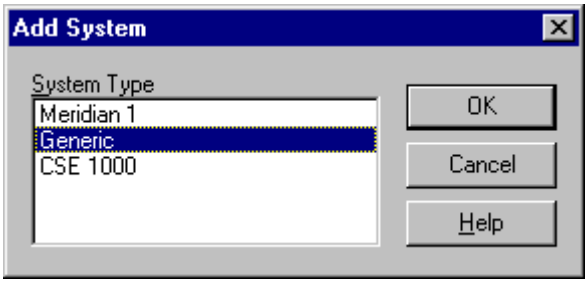
You can add as many as 256 systems (including non-Meridian 1 systems) to a site. You must have administrator privileges to add a system.

1 In the Navigator window, select the desired site.

2 Choose Configuration > Add System, or right-click and select Add System.

The Add System dialog box opens (Figure 51).

Figure 51 Add System dialog box—Generic



Note: You may need to install additional software to enable other system types not listed in Figure 51. Follow the installation instructions included with your order.

3 Select Generic in the System Type box.

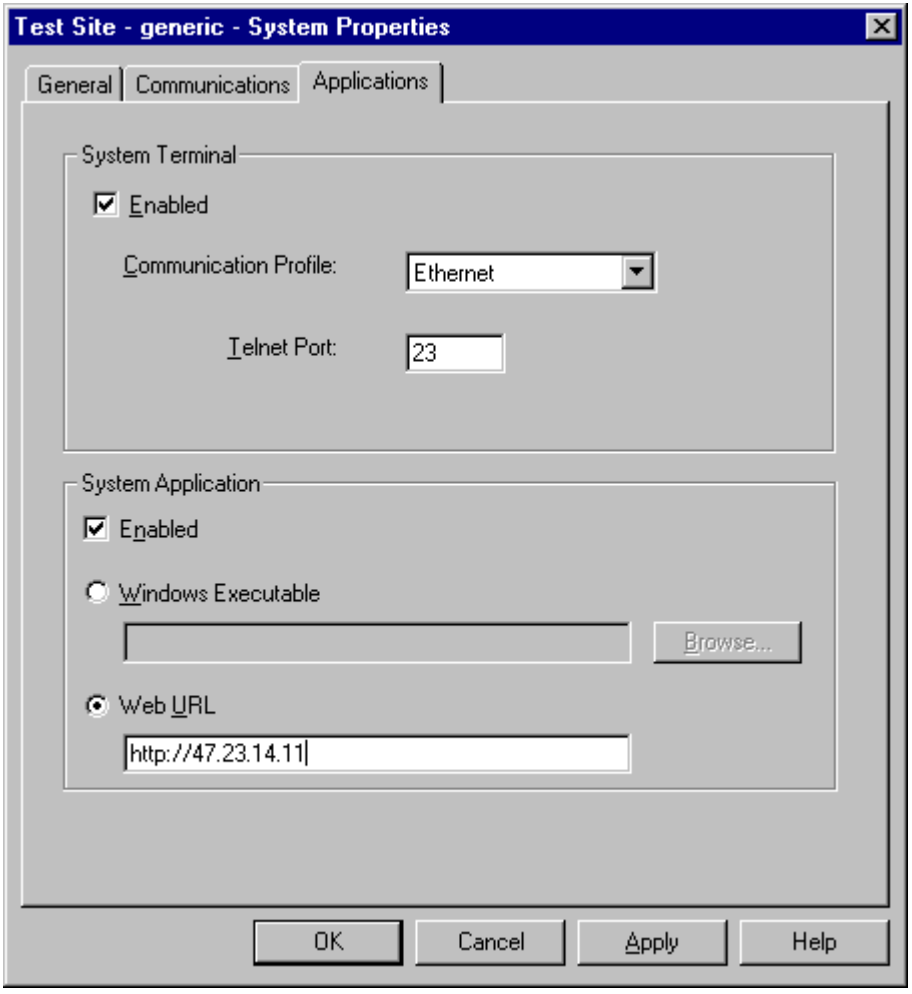
4 Click OK.

5 Complete the System Properties—General and System Properties—Communications dialog boxes as you do for a Meridian 1 or Succession CSE 1000 system. See "Adding a Meridian 1 or Succession CSE 1000 Release 1.x system" on page 94, or "Adding a Release 2.0 and later Succession CSE 1000 system" on page 113.

6 Click the Application tab.

The System Properties dialog box—Applications tab for non-Meridian 1 devices opens (Figure 52).

Figure 52 System Properties dialog box—Applications tab



7 In the System Properties dialog box—Applications tab, define the applications available for the device as follows:

- In the System Terminal section, select the communications profile. Typically, this is an Ethernet profile. Once defined, the user can double-click the system in the Windows Navigator to launch the Windows System Terminal, or open a Web-based terminal window from the OTM Web Navigator Systems page, or both.
- In the System Application section, you have the option of launching a Windows executable or Web browser page for managing the device.

If a Windows executable is selected, it can only be accessed from the Windows Navigator. If a URL is selected, the web site can be accessed from either the Windows or Web Navigators.

The availability of a terminal connection, executable, or Web site depends on the device.

Changing site information

You can change any information about a site, including the site name, address, and contact. You must have administrator privileges to change site information.

1. In the Navigator window, select the desired site.
2. Choose File > Properties, or use the right mouse button pop-up menu. The Site Properties dialog box opens with the General tab displayed.
3. Bold fields indicate required information. To change a value, edit the field. Consult the online Help for details on any field.
4. To add a new system to this site, click Add System, and fill in information for the new system. See "Adding a Meridian 1 or Succession CSE 1000 Release 1.x system" on page 94, or "Adding a Release 2.0 and later Succession CSE 1000 system" on page 113.
5. Click one of the following buttons:
   - OK saves the information and closes the dialog box.
   - Cancel closes the dialog box without saving.
   - Apply saves the information and leaves the dialog box open.
   - Help provides online Help.

Changing system information

You can change any information about a system or its communications connection. You must have Administrator privileges to change any system information.

1. In the Navigator window, select the desired system.
2. Choose File > Properties, or use the right mouse button pop-up menu.

   The System Properties window opens.

3 Select the tab containing the information that you want to change.

Bold fields indicate required information. To change a value, edit the field or select a different item from a field pop-up menu. An arrow within a field indicates a drop-down list of choices. Press the arrow to select from the list. Consult the online Help for details on any field.

4 Click one of the following buttons:

- OK saves the information and closes the dialog box.
- Cancel closes the dialog box without saving.
- Apply saves the information and leaves the dialog box open.
- Help provides online Help.

Moving an Option 11C or Succession CSE 1000 system

OTM does not allow you to move a Succession CSE 1000 system with associated Media Gateways from one site to another. This same limitation also applies to Option 11C systems with Survivable IP Expansion Cabinets. You must remove the Media Gateways (Succession CSE 1000) or Survivable IP Expansion Cabinets (Option 11C) before moving the Call Server (Succession CSE 100) or Main Cabinet (Option 11C).

Note: The Application data is not lost during this process.

Deleting a site or system

You must have administrator privileges to delete a site or system from the Navigator window. A record of the deletion is stored in the PC event file.

Warning: Deletion of a site also deletes all of its systems.

1 In the Navigator window, select the site or system.

To delete all sites and systems, select the Sites icon at the top of the tree.

2 Choose Edit > Delete.

3 Click OK to confirm.

Changing your password

You can change your password at any time. If your password has expired, OTM prompts you to enter a new password when you attempt to log in. Refer to "Changing the default login password (Windows 98 only)" on page 90.

Configuring OTM Navigator users

OTM allows you to create User Groups to speed the process of adding users accessing the OTM Windows Navigator and certain OTM Web-based applications. In the User Group Properties dialog box, you define most aspects of a certain kind of user, such as level of access to sites and systems, and automatic connection to particular systems. You can create as many User Groups as you need. You assign individual users to a User Group when you add users to the OTM database.

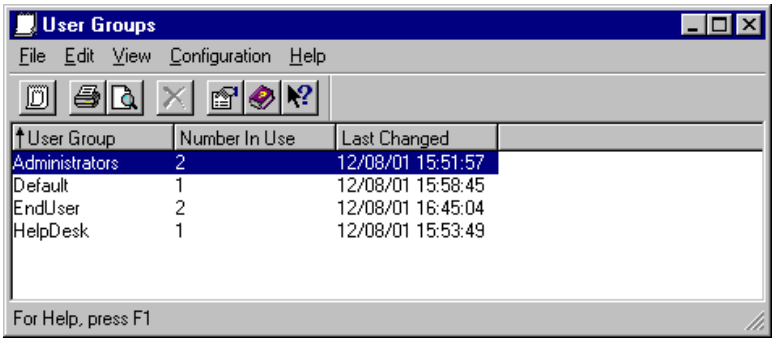
There are two types of users — local users and remote users. Local users have accounts on the OTM Server. When you add a new local user, an OTM user account and a local Windows NT/Windows 2000 user account are created and the account is assigned to the specified User Group. Deletion of a user removes the user account from the account list in Windows NT/Windows 2000, as well as from all relevant database tables. Remote users have accounts that exist on a domain controller or in an LDAP-compliant directory. For these users, OTM is used to assign the Login Name for the account to an OTM user group.

Note: Access to OTM Windows and Web applications is provided through the Windows NT/Windows 2000 server. A Windows NT Domain account or an LDAP-compliant directory can also be used to authenticate OTM users for Web Services. Refer to "Web Services" on page 317.

Creating a User Group

1 In the Navigator window, choose Security > User Groups to display the User Groups window (Figure 53).

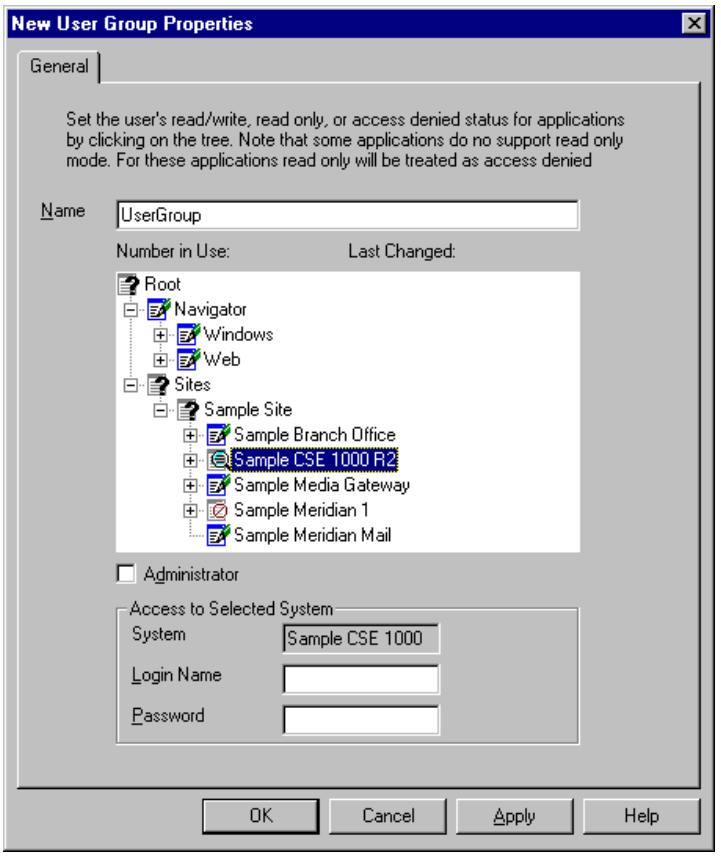
Figure 53 User Groups window



2 Choose Configuration > Add User Group. The new User Group is created with the same access privileges as the highlighted User Group. The New User Group Properties dialog box opens (Figure 54).

Note: The Administrators, Default, EndUser, and HelpDesk User Groups are always available and cannot be deleted. You can modify all groups except for Administrators. The Administrators User Group has access to all Windows-based and Web-based OTM applications.

Figure 54 New User Group Properties dialog box



3 Enter a name for this User Group.

4 For each site, system, and application in the tree, use the right mouse button to assign user privileges (Read-write, Read-only, or No Access). Each click of the right mouse button causes the access privileges and corresponding icon to change (Table 5). Select the Administrator box, if appropriate. The site and system icons change to reflect the access level.

Note: Access privileges defined for sites or systems at higher levels in the tree structure are applied to all subordinate items.

Note: The question mark icon indicates that the sub-items belonging to the item displaying the question mark icon have mixed access settings.

Table 5 Access privilege icons

Icon	Explanation
	Read and write access
	Read only access
	No access
	Indicates that the access privileges in the branch are mixed between one or more of the above levels

5 Enter values in the Login Name and Password text boxes to allow members of this user group to connect to this system without having to enter a Login Name and Password each time they connect.

6 Click OK to save changes and close the User Group Properties dialog box.

Adding a user

1 In the OTM Users window, choose Configuration > Add User.

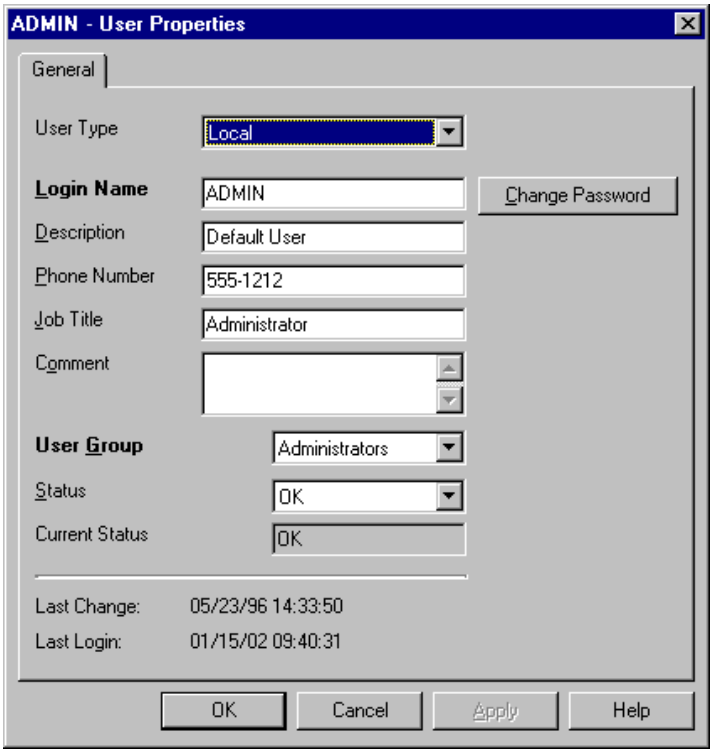
The User Properties dialog box opens (Figure 55).

Note: User accounts should be added here rather than through the Windows NT or Windows 2000 user management tools.

Note: The "Administrator" user account for the Windows NT or Windows 2000 OS does not appear in the OTM Users window. This is to prevent users from changing the Administrator account password from within OTM.

Note: Even though it is not listed in the Users window, the OS Administrator account can always be used to log in to OTM.

Figure 55 User Properties dialog box



2 Select a User Type from the drop-down list.

- Local - Users who are authenticated using an account on the OTM Server
- Remote - Users who are authenticated using either a Windows NT Domain account or LDAP

Note: When Remote is selected, the Change Password button, as well as the Status and Current Status controls, are disabled.

3 Enter a Login Name.

4 From the User Group drop-down list, select the group to which this user will be assigned.

5 Fill in other data as required.

6 Click Apply. OTM prompts you to enter a password.

7 Click Change Password to change the OTM login password for this user only.

8 Click OK. The new user appears in the OTM User window. Close the OTM User window.

Deleting a user group

You can delete a user group only after all associated members of that group are either deleted or reassigned to another user group.

Note: You cannot delete the account that you used when you logged in to your current session.

Restricting user access permission levels

You can restrict a user from having access to sites, systems, and applications. However, when a user is defined as being restricted from any access to all sites, systems and applications in the Navigator, the user can, in fact, see all the sites and systems in the Navigator tree and has read-only access to their properties. If restricted users try to open a system, they see a System Window with no applications visible.

Sites and systems displayed in user groups

When adding or modifying a user group, only systems that have applications enabled are presented. If no applications are enabled for the systems within a given site, the site and system(s) do not appear in the User Group Properties dialog box.

Note: For information on configuring End Users for access to the OTM Web site, see "Enable Web desktop access" on page 172.

User authentication

You can select any of the following three methods or combination of these methods to authenticate OTM users:

- Local OTM Server account

- Windows NT Domain account
- LDAP authentication

Note: The Administrator account is always authenticated through the local server account because it is a default account on all supported Windows platforms.

Note: The default authentication method is the Local OTM Server account. This method provides the best login performance because there is no requirement to search the OTM directory for the user's assigned User Group.

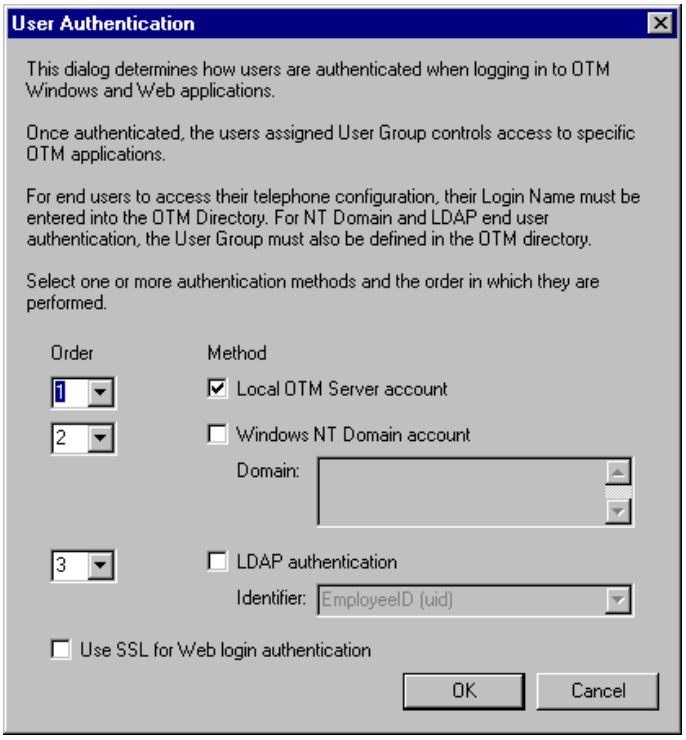
Note: You can also configure user authentication using the OTM Web Services. For information, see "User authentication" on page 356.

To configure authentication:

1 From the OTM Windows Navigator, select Security > User Authentication.

The User Authentication dialog box opens (Figure 56).

Figure 56 User Authentication dialog box



2 Use the check boxes to select one or more of the available authentication methods.

   a If you select Windows NT Domain account, enter one or more domains in the Domain text box. Separate the domain names with a comma.

   b If you select LDAP authentication, use the drop-down list to choose either EmployeeID (uid), or EMail (email).

3 Use the drop-down lists to assign the order in which the authentication methods are performed.

Note: If you choose multiple authentication methods, OTM respects the order configured; however, it should be noted that the best performance is achieved by using the "Local OTM Server account" method.

4 To use the secure socket layer (SSL) during the authentication process, click the "Use SSL for Web login authentication" check box.

Note: If the OTM Server has the required certificate installed, setting the encryption check box and protecting specific virtual directories on the OTM Server causes OTM to use SSL encrypted transport during authentication. In this case, Web login is performed using https:// rather than http://, and the traffic is encrypted. The OTM Server automatically switches to non-SSL transport once the user is successfully authenticated.

The selected method(s) are used to authenticate users on all OTM platforms: OTM Server, OTM Client, and OTM Web Client.

Maintenance tasks

The following guidelines and tables indicate suggested scheduling of various OTM operating procedures.

Telecom Billing System

Refer to *Using Optivity Telephony Manager Telemanagement Applications (553-3001-331)* for complete details of the schedules for data collection, database maintenance, and data management. The database maintenance schedules outlined in this chapter should also be used for OTM Corporate Directories.

Call Tracking

Table 6 provides guidelines for scheduling Call Tracking maintenance tasks.

Table 6 Call Tracking maintenance tasks

Maintenance task	Schedule
Data collection (real time)	Continuously
Data collection (from a file)	Hourly
Review Alarm Log	No set schedule. review as needed

Table 6 Call Tracking maintenance tasks (continued)

Maintenance task	Schedule
Backup and archive Call Tracking database	The main Call Tracking database is part of the site/system data files. This is backed up/archived with the other databases.
Restore Call Tracking database	As necessary

Traffic Analysis

Table 7 provides guidelines for scheduling Traffic Analysis maintenance tasks.

Table 7 Traffic Analysis maintenance tasks

Maintenance task	Schedule
Data collection (through direct connection to the Meridian 1 or Succession CSE 1000 system)	Hourly
Data collection (through buffer box or DBA)	Daily
Backup/Archive Traffic database	Archive the Traffic database monthly. Remember to purge old or unneeded data from the working directory during this Archive procedure.
Restore Traffic database	As necessary

OTM Site/System data

Table 8 provides guidelines for scheduling OTM Site/System data maintenance tasks.

Table 8 OTM Site/ System data maintenance tasks

Maintenance task	Schedule
Backup Employee database	Weekly
Backup all other databases (OTM Corporate Directories) for site/system	Monthly
Restore databases for site/system	As needed
Since the Employee database is usually edited more frequently, you should back up the database on a weekly instead of monthly basis (as with the other OTM databases).	

Compact and Repair Utility

The Compact and Repair Utility is usually not run on a set schedule. This utility is used to help repair and compact MS Access database files in OTM that may be corrupted or have taken too much disk space. You should, therefore, run this utility at any time you have deleted or purged a large number of records from one of the system databases. For example, if you deleted a large number of call records from the Call Database, or if you made major edits to the Employee Database (especially deletions), then you should run the Compact and Repair Utility databases. This optimizes your disk space and repairs any possible flaws in these MS Access database files.

Regional Settings

Currency Settings, located under Regional Settings, includes information about local and alternate currencies. The Optivity Telephony Manager (OTM) applications use this information to display costs.

Local Currency

The Local Currency tab contains information about the local currency that is used to display costs in the Optivity Telephony Manager (OTM) applications. This is useful in situations where a single system manages and processes data from many countries and you want to report costs in different currencies across different systems. Each system can represent sites in different countries. Their costs can then be expressed in their respective local currency.

Currency information, by default, is derived from the client PC's regional settings. However, there are cases where systems are required to operate with different currencies. To facilitate this, OTM allows you to define currency settings for any system as required. In addition, you can configure default settings from the OTM Navigator main window, which can also be used by the OTM systems. These default settings are used by any system that does not have its own settings defined. This is useful in an installation where the majority of systems are operating in a common currency and only a few are operating in a different currency. In this case, you can set the default currency settings for the majority of the systems, and you only need to configure the exceptions.

To define the local currency, select Configuration > OTM Regional Settings in either the OTM Navigator window or the system window. Select from the following options:

Use System Setting (Navigator level only): Turn on this check box to have OTM use the currency settings defined in the client PC's Windows Regional Settings. Notice that the remaining fields are updated with the Windows Regional Settings currency information and appear grayed (read-only). You cannot edit these fields if you select this option. Since this option is only available at the Navigator level, you can only select this option for the Navigator main window. By default, this option is enabled (the check box is checked).

Use Default Setting (System level only): Turn on this check box to have the system use the default currency settings that you defined in the Navigator window. Notice that the remaining fields are updated with this default (or shared) currency information and appear grayed (read-only). You cannot edit these fields if you select this option. This option is only available from a system window.

Enter the local currency values in the following fields:

Currency Name: In this field, enter a descriptive name of this currency (for example, US Dollars).

Appearance Samples: These read-only fields display samples of the costs based on the selected currency settings (for example, $123,456.78 and ($123,456.78)).

Currency Symbol: In this field, enter the symbol for this currency (for example, $). The symbol appears next to the cost values on report summaries. If your keyboard does not support the currency symbol that you want to use, then you may need to enter it using alternate key codes. For example, to enter the symbol for the Euro dollar, press and hold the [Alt] key and enter `0128` on your numeric keypad. The Euro dollar symbol appears. If a black square appears instead of the symbol, then your system font does not support this character. It should, however, still appear correctly on the printed report.

Position of Currency Symbol: From this drop-down list box, select how the currency symbol will appear next to cost values. The "*" represents where the symbol appears with respect to the value. For example, *1.1 indicates that the currency symbol will appear before the values (for example, $1.00).

Negative Number Format: From this drop-down list box, select how negative values will appear. For example, (*1.1) indicates that negative numbers appear with parentheses around them (for example, ($1.00)).

Decimal Symbol: In this field, enter the symbol that will be used for the decimal (For example, for the amount $1,000.00, enter `.`).

Number of Digits after Decimal: In this field, enter the total number of digits that will appear after the decimal (for example, for the amount $1,000.00, enter `2`).

Digit Grouping Symbol: In this field, enter the symbol that will be used to separate digit groups when displaying currency values (for example, for the amount $1,000.00, enter `,`).

Number of Digits in Group: In this field, enter the number of digits that will be separated by the digit grouping symbol (e.g., for the amount $1,000.00, enter: `3`).

Once you have entered these settings, click Apply to save them and remain in this tab. Click OK to save these settings and exit to the previous window.

Alternate Currency

The Alternate Currency tab contains information about any alternate currencies used when displaying costs in OTM reporting. This is useful in situations where you want to have reports display monetary values in two separate currencies. For example, European countries could display summary costs in their local currencies and in the new Euro currency.

You can either define the alternate currency settings for specific systems, or have them use the default settings defined in the Navigator level. The alternate currency defined in the Navigator window is used as the default alternate currency. Any systems that do not have alternate currency settings defined for them use the default currency settings defined at the Navigator level. As well, you can specify that a system should use the default currency settings.

To define the alternate currency, select Configuration > OTM Regional Settings from either the OTM Navigator window or the system window. Select from the following options:

Use Default Setting (System level only): Turn on this check box to have the system use the default alternate currency settings you entered in the Navigator window. Notice that the remaining fields are updated with this currency information and appear grayed (read-only). You cannot edit these fields if you select this option. This option is only available from a system window.

Enable Alternate Currency (Navigator and System level): Check this check box to enable alternate currency settings to appear on system billing reports. If you disable this option (that is, uncheck this check box), the remaining fields appear grayed (read-only), and the alternate currency is not included in your reports.

Enter the alternate currency values in the following fields:

Currency Name: In this field, enter a descriptive name of this currency (for example, US Dollars).

Appearance Samples: These read-only fields display samples of the costs based on the selected currency settings (for example, $123,456.78 and ($123,456.78)).

Currency Symbol: In this field, enter the symbol for this currency (for example, **$**). This appears next to the cost values on report summaries. If your keyboard does not support the currency symbol that you want to use, then you may need to enter it using alternate key codes. For example, to enter the symbol for the Euro dollar, press and hold the [Alt] key and enter **0128** on your numeric keypad. The Euro dollar symbol appears. If a black square appears instead of the symbol, then your system font does not support this character. It should, however, still appear correctly on the printed report.

Position of Currency Symbol: From this drop-down list box, select how the currency symbol will appear next to cost values. The "*" represents where the symbol appears with respect to the value. For example, *1.1 indicates that the currency symbol appears before the values (for example, $1.00).

Negative Number Format: From this drop-down list box, select how negative values will appear. For example, (*1.1) indicates that negative numbers appear with parentheses around them (for example, ($1.00)).

Decimal Symbol: In this field, enter the symbol that will be used for the decimal (for example, for the amount $1,000.00, enter **.**).

Number of Digits after Decimal: In this field, enter the total number of digits that will appear after the decimal (for example, for the amount $1,000.00, enter **2**).

Digit Grouping Symbol: In this field, enter the symbol that will be used to separate digit groups when displaying currency values (for example, for the amount $1,000.00, enter **,**).

Number of Digits in Group: In this field, enter the number of digits that will be separated by the digit grouping symbol (for example, for the amount $1,000.00, enter: **3**).

Currency Exchange Rate: In this field, enter the exchange rate for this currency against the local currency. For example, if the local currency is the U.S. dollar (US$), and the alternate currency is the Canadian dollar (Can$), and the exchange rate is 1.49, then enter **1.49** in this field. This means that US$1.00 is equivalent to Can$1.49.

Once you have entered these settings, click Apply to save them and remain in this tab. Click OK to save these settings and exit to the previous window.

Access Server

The Access Server provides a command line interface (CLI) for remote access to the OTM Server. From a remote terminal, you can dial in through a modem or through a direct serial connection to access the OTM Server.

Caution: Access Server must be run under the Windows NT or Windows 2000 Operating System, as it does not function properly under any other operating system.

Once successfully logged in, you can do the following:

- Change Windows NT user passwords.

- Connect to different sites and systems as configured in Virtual Terminal Service. See “OTM Web Virtual System Terminal” on page 370.

Note: CLI needs a dedicated modem. CLI cannot share the modem with Win NT RAS or other services.

Caution: If you are not using Access Server, be certain that the Auto Launch check box is unchecked (Figure 58 on page 156). This action prevents unnecessarily tying up a COM port on the server.

CLI status window

The CLI launches at OTM Server startup. The status window displays CLI status messages.

To view the CLI status window:

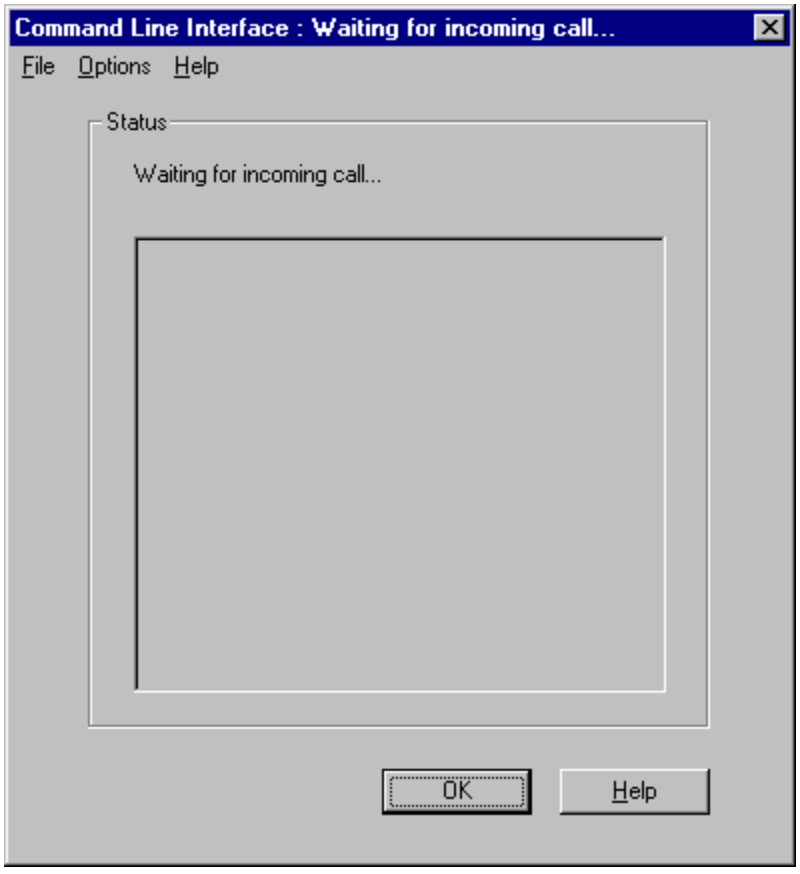
➔ From the Start menu, choose Programs > Optivity Telephony Manager > Command Line Interface.

The CLI status window opens (Figure 57).

The following status messages may appear in the CLI window:

- Waiting for incoming call
- Answer call and authentication process in progress

Figure 57 CLI status window



CLI configuration

The CLI configuration dialog box is used to define the following OTM Server COM port settings:

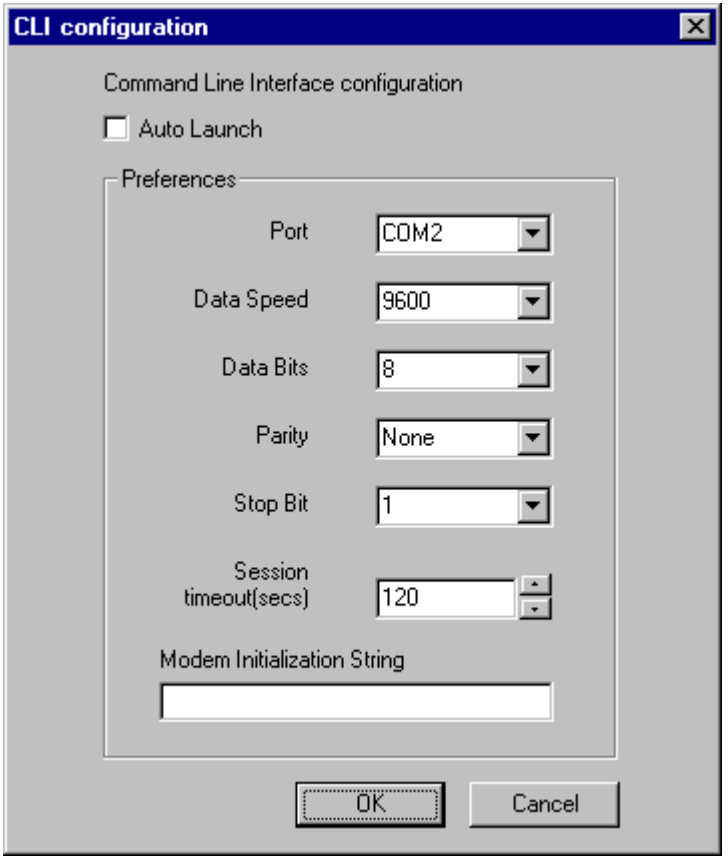
Port - list of COM ports on the OTM Server
Data Speed of COM port - 4800, 9600, 19,200, 38,400
Data Bits - 5, 6, 7, 8 bits
Parity - None, Odd, Even Mark, Space
Stop Bits - 1, 1.2, 2 bits
Session timeout (secs)- If current session is idle for the specified time, CLI disconnects the call.

To open the CLI configuration dialog box:

➔ Select Options > Configure... in the CLI status window.

The CLI configuration dialog box opens (Figure 58).

Figure 58 CLI configuration dialog box



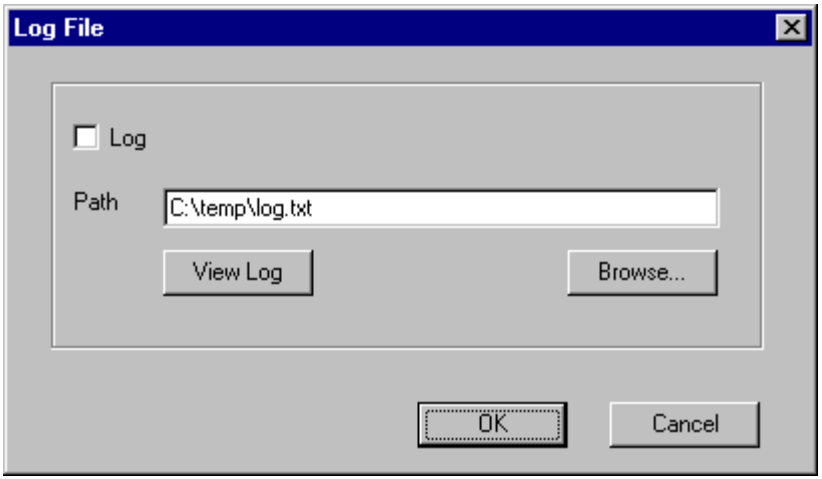
CLI Log File dialog box

The CLI Log File dialog box allows you to turn the log option on or off and specify the log file location (Figure 59). The Log File logs all activities: user login, commands, and so on.

To open the CLI Log File dialog box:

➔ Select Options > Log File... in the CLI status window.

Figure 59 CLI Log File dialog box



CLI Operation

From a PC other than the OTM Server, dial into CLI on the OTM Server using HyperTerminal or an equivalent Telnet application. Enter an OTM Login Name and Password to log in. Once logged in the following commands are available:

- Help or ?- lists all commands
- Status - lists all VTS ports associated with configured systems
- Connect - connects to a system
- Exit - disconnects

Figure 60 and Figure 61 show the CLI commands.

Figure 60 CLI Help commands

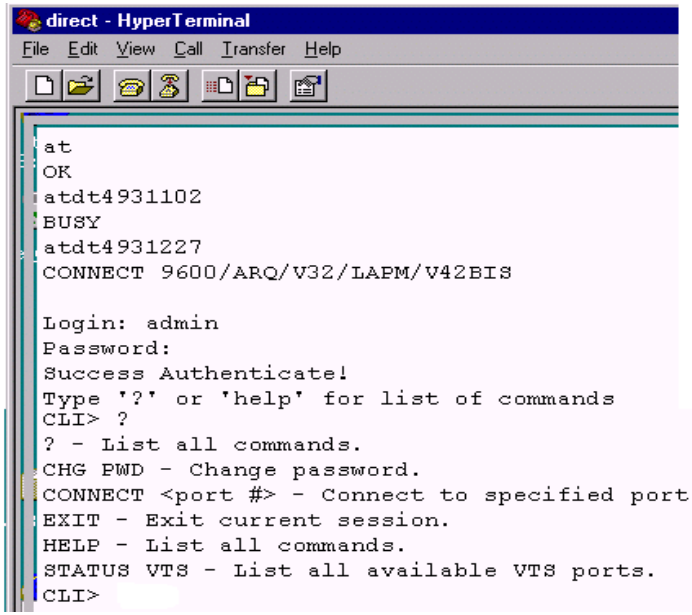
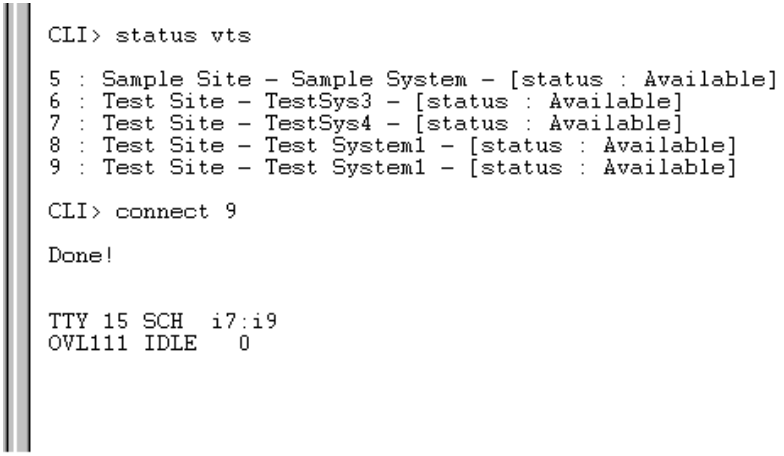


Figure 61 CLI Status and Connect commands



Communication

Both the Terminal Server (OTM Server) and Terminal Client (Remote PC) can detect when their TCP socket connection is lost. In that case, they log the error or notify the user, or both, and reset themselves for another connection.

The base port number determines the range of socket ports used to communicate with the Terminal Client. Under normal conditions, this should be left as is, and should not be changed unless the default port conflicts with another network application.

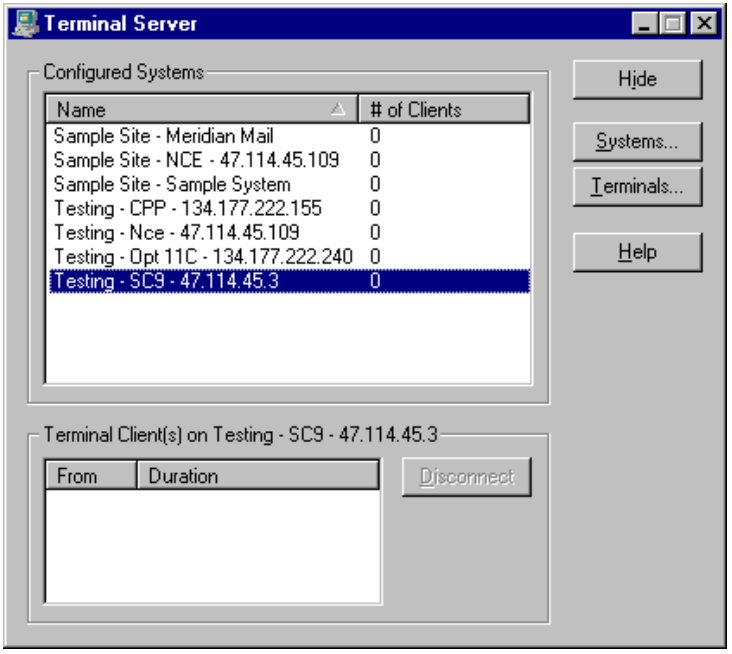
By default, the Terminal Server and Terminal Client communicate using network ports 4789 through 5045 (4789 to send connection requests, 4790-5045 for up to 256 terminal sessions). The number of ports actually used depends on the number of virtual ports configured.

To change the range of port numbers:

1 From the Start menu, choose Programs > Optivity Telephony Manager > Terminal Server.

The Terminal Server dialog box opens (Figure 62).

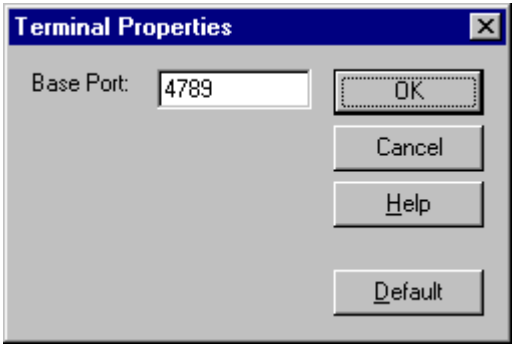
Figure 62 Terminal Server dialog box



2 Click Terminals... .

The Terminal Properties dialog box opens (Figure 63).

Figure 63 Terminal Properties Base Port parameter



3 Enter the new Base Port number, and then click OK.

4 Edit the HTML page containing the applet. Make sure the applet's Base Port parameter matches the one in the Terminal Properties (default = 4789).

Encryption

Data is encrypted, so that someone monitoring the network traffic does not see plain ASCII data (which may contain user login, password, or other sensitive information).

Every packet sent between the Terminal Server and the Terminal Client is 65 bytes, and contains data that is masked with a key. This ensures that data is not easily readable, while keeping the overhead low for constant character I/O.

Before sending a packet, the application picks a random location in a 256-byte key (known only to the server and the client), and uses the subsequent bytes to mask the character data. In essence, every packet is masked with one of 256 possible keys.

Directory Services

The OTM Directory feature allows you to input end user data through the OTM applications, such as Station Administration and Telecom Billing System, directly into the customer's server. OTM Directory contains employee and organization details, with a number of fields that are common to both Directory and Station Administration.

OTM Directory provides a number of tools to configure your company structure and create an employee database:

- An Organization Hierarchy editor to define your business organization
- An Employee Selector to manage user data
- An External Parties editor to configure external party records
- A Roles/Project editor to create role and project groups within the organization
- Synchronization utilities to update Station Administration with all the changes made to Directory data

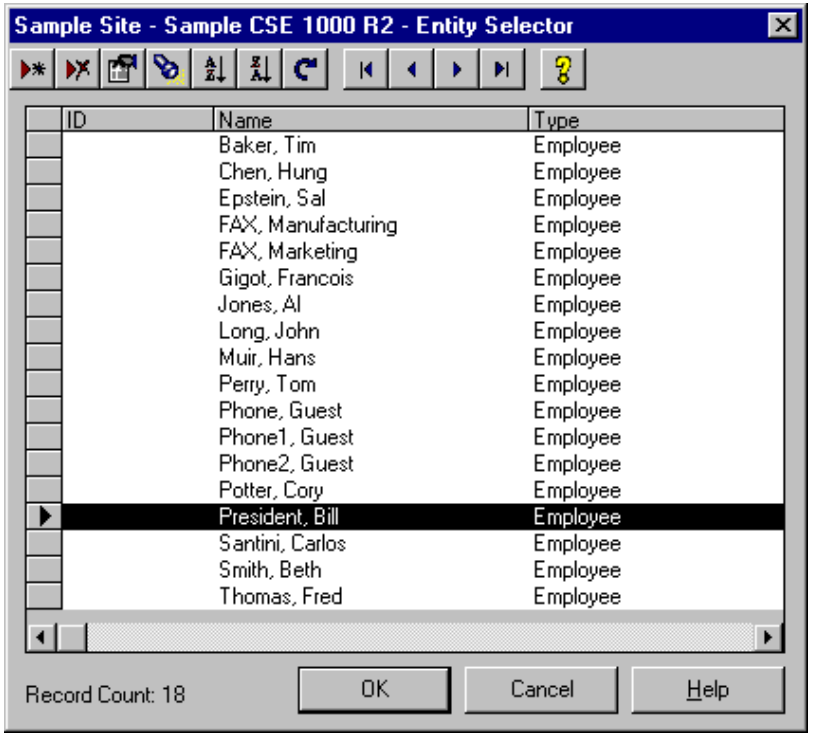
Note: The data is scheduled for synchronization from the Utilities menu in the Navigator window. See "LDAP Synchronization" on page 291.

Access OTM Directory

You access OTM Directory from within the Station Administration System window using one of the following methods:

- Choose Employee Selector, External Parties, Roles/Project, or Organizational Hierarchy in the View menu.
- Double-click an individual station in the Station Administration System window, and click Directory in the station graphic. The Entity Selector dialog box opens (Figure 64).

Figure 64 Entity Selector dialog box



- You may also access the OTM Directory from within the Telecom Billing System (TBS) Edit menu. For details, see "Telecom Billing System" in *Using Optivity Telephony Manager Telemanagement Applications* (553-3001-331).

Note: The links between Station Administration and OTM Directory are described in more detail in "Station Administration links to the OTM Directory" on page 482.

Organizational Hierarchy Editor

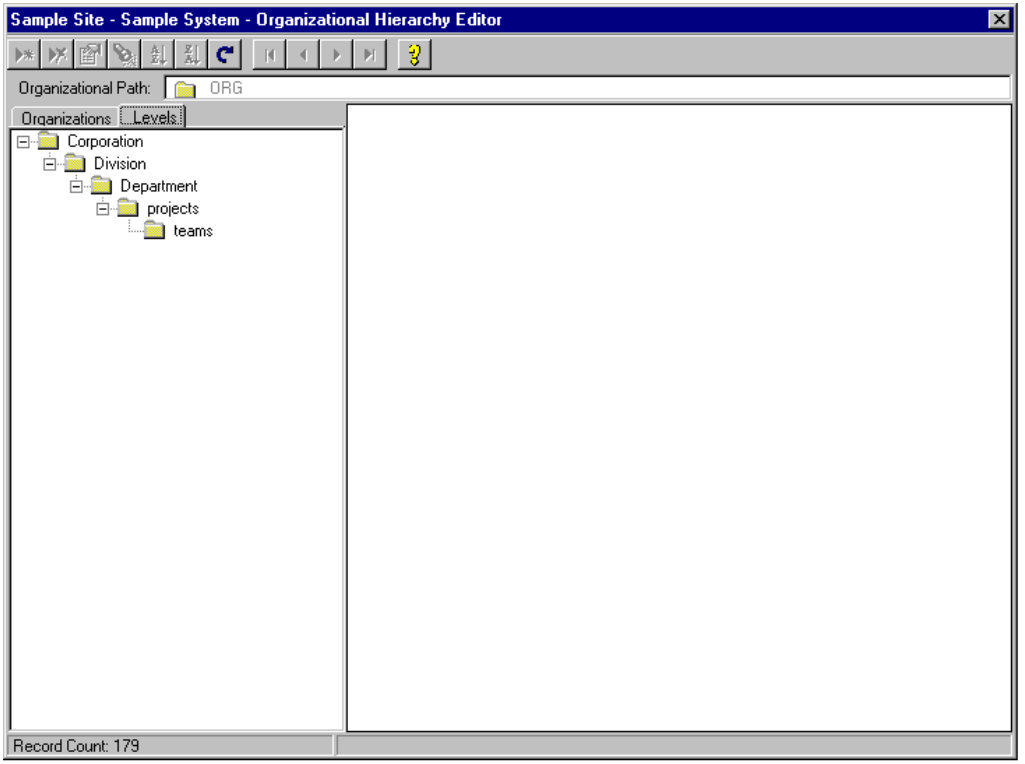
The Organizational Hierarchy Editor allows you to create and edit the structure of your company. You build an organization tree representing the different organization nodes in your corporation, such as divisions, departments, projects, and project teams. You can place each organization node at its level in the hierarchy. After defining an organization node in the structure, you can assign employees to the node using the Org. Path field in the Employee Editor.

Access the Organizational Hierarchy Editor

To access the Organizational Hierarchy Editor, select Organizational Hierarchy under the View menu in the Station Administration window.

The Organizational Hierarchy window is where you define the structure of your organization. The left side of the window shows the organization hierarchy tree. The right side of the window is the Employee Selector providing a list of employees related to the selected organization node.

Figure 65 Organizational Hierarchy Editor—Levels tab



Define organization levels

Before you begin adding organization nodes to the tree, define the levels of the organizations in your company. The levels represent the structure of your company. For example, the company can have divisions, departments within divisions, and projects within departments. You can define a maximum of 20 different levels.

1. Click the Levels tab. The tree displays the levels defined for the structure. If you have not yet entered the structure for your organization, the window contains a default menu tree with the Organization, Division, and Department levels.
2. Click the level where you want to define a new level.
3. Right mouse click to open the Add New Level dialog box.
4. Type the name of the new level and click OK.

To delete a level, select the entry and click the Delete key on the toolbar.

As shown in the example in Figure 65, the levels are defined as:

- Corporation
- Divisions within the corporation
- Departments within the division
- Projects within the department
- Employee teams within the project

Add an organization node

To add an organization node:

Note: You must define an organization level before you can add an organization node at that level. See “Define organization levels” on page 164.

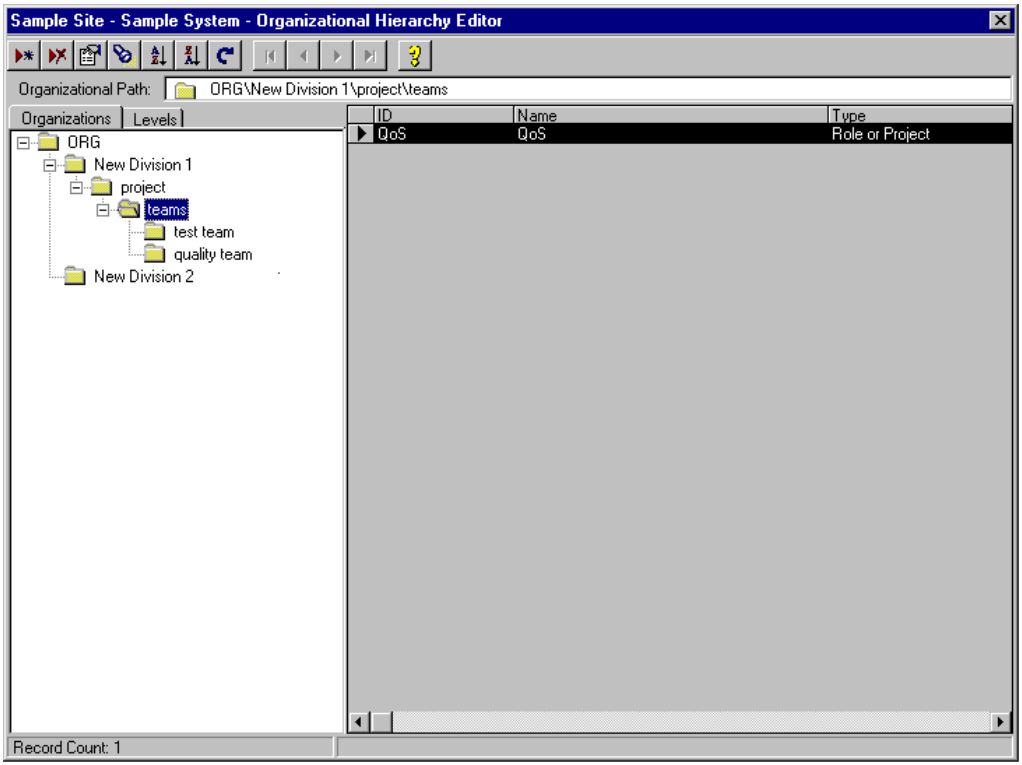
1. Select the Organizations tab (Figure 66).

2 Select the name of the organization in the tree where you want to add a new organization node. For example, if adding a new department to a division, select the name of the division.

3 Click the right mouse button and select Add New Node, or click the Add icon (the toolbar button with the plus sign). The new node appears in the tree. For example, if adding a new division, Division appears in the tree.

4 Click the right mouse button and select Rename to give the new node a name. Type over the name.

Figure 66 Organizational Hierarchy Editor—Organizations tab



Delete an organization node

To delete an organization node:

1 Select the organization node in the tree.

2 Click Delete (toolbar button with the X). The node disappears from the tree.

Employee Selector Window

The right pane of the Organizational Hierarchy window consists of the Employee Selector window.

Note: The Employee Selector window also appears as an individual window by clicking Directory in the Station Set window.

This window displays the list of current Employee entities in the Directory database, and allows you to create a new employee entity, add it to your organizational node, and edit the details of an existing entity.

The icons in the Organization Hierarchy toolbar allow you to edit the Employee records listed or create new Employee, Roles/Projects, or External Parties records to be added to your organizational node. As they appear from left to right, they allow you to:

- **Add new record**: Select a record type (Employee, External Party, Role/Project) from the Entity Selector. You can then add a new Employee record to the database (which opens the Employee Editor), or add a new Roles/Projects record (which opens the Roles/Projects Editor) or a new External Party record (which opens the External Parties Editor).
- **Delete record**: Delete the selected record from the database. See “Delete employees” on page 167.
- **Edit Record**: Edit the selected record. This opens the Employee Editor window, in which you can edit the Employee details
- **Find**: Search for a specific record. Enter a text string and select a field from ‘ID’, ‘Entity Type’ or ‘Name’ by which to search the database. See “Search for an employee” on page 168.
- **Sort Ascending**: Sort the employee records in ascending order. See “Sort the employee list” on page 169.
- **Sort Descending**: Sort the employee records in descending order.
- **Refresh View**: Refresh the list following changes.
- **Move First/Previous/Next/Last**: Move the cursor to the top of the list, to the previous entity to the one selected, to the next entity to the one selected, or to the end of the list.
- **Help**: Consult the Online Help system.

Add an employee to an organization node

To add an employee to an organization node:

1. Select the organization node in the tree.
2. Click Add (the toolbar button with the plus sign). The Entity Type Selector window opens.
3. You have the option to add a new Employee, External Party or Role/Project. When you select a type, the Editor for that type appears. In this case, select Employee.
4. The Employee Selector window opens. Select the employee you want to assign to the selected organization node.

Edit employee data

To edit employee data:

1. Select the organization node in the tree. The names of the employees appear in the Employee Selector window.
2. Select the name of the employee you want to edit.
3. Click Edit (the toolbar button with the pencil). The Employee Editor opens. See “Edit employee data” on page 176.

Delete employees

To delete an employee from an organization node:

1. Select the organization node in the tree. The names of the employees appear in the Employee Selector window.
2. Select the employee you want to delete.

3 Click Delete (the toolbar button with the X). The employee disappears from the list.

Note: This action deletes the Employee from the Organizational Node, but the Employee Entity still exists in the OTM Directory database. The Entity can only be removed from OTM Directory through the Employee Selector window, as accessed through the Directory button in Station Administration. For more details on the link between Station Administration and OTM Directory, see "Station Administration links to the OTM Directory" on page 482.

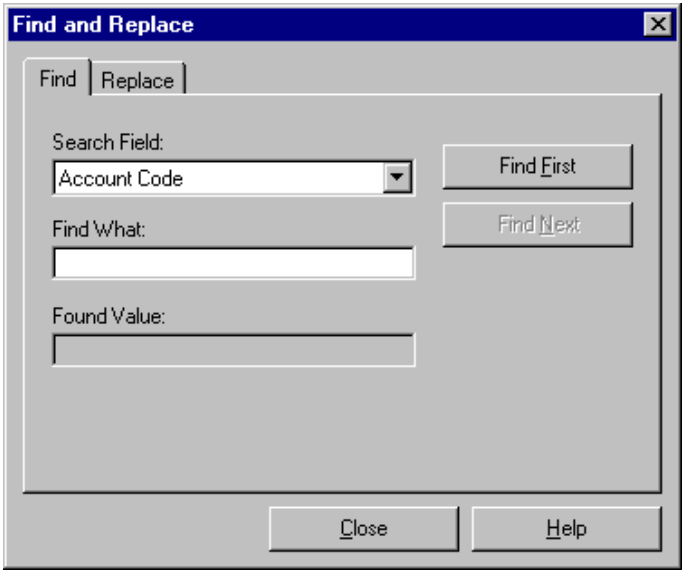
Search for an employee

To search for a specific employee:

1 Select the organization node in the tree.

2 Click Search (the toolbar button with the flashlight). The Find and Replace dialog box opens (Figure 67).

Figure 67 Find and Replace dialog box



3 Select the field you want to search from the drop-down list.

4 Enter the character string to search for in the Find What box.

5 Click one of the following buttons:

- Find First - Finds the first occurrence of the character string
- Find Next - Finds the next occurrence of the character string
- Close - Ends the search

If the search finds a match, the employee's name appears highlighted in the Employee Selector window.

Sort the employee list

To sort the employee list:

1 Select the organization node in the tree.

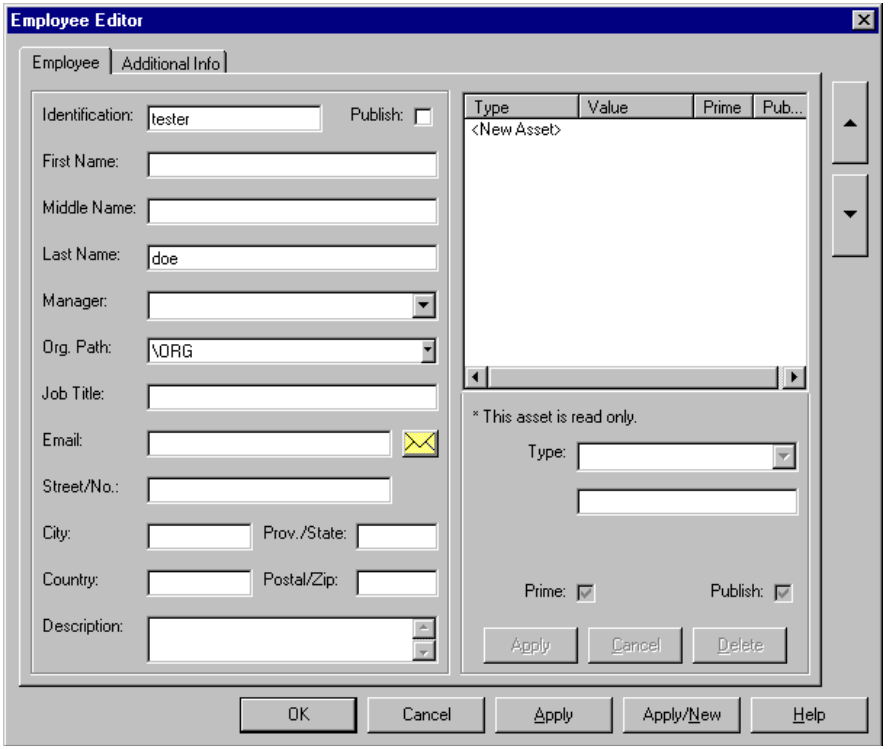
2 Click the column header of the column you want to sort in the Employee Selector window.

3 Click Sort Up or Sort Down (the toolbar buttons with AZ Up or AZ Down).

Employee Editor

The Employee Editor allows you to add new employees and update employee personal and job related data. The tabs on the right side of the window allow you to define the assets assigned to the employee. You can also define the property assigned to the employee, such as telephone and terminal numbers.

Figure 68 Employee Editor dialog box—Employee tab



Access the Employee Editor

There are several ways to access the Employee Editor:

- Click the Add or Edit button in the Organizational Hierarchy Editor window.
- Double-click an employee's name in the Employee Selector window.

To add a new employee:

1 The Employee Editor dialog box opens with the Employee tab selected. The fields are blank. Enter the employee data as follows:

- Enter the employee information in the appropriate fields.

- How you access the Employee Editor determines if the Org. Path field shows a drop-down selection box or not. If the drop-down box is active, the organization structure tree displays. Select the organization node for the employee from the tree. If the drop-down box is not active, type the path to the organization node for the employee.
- The Manager field has a drop-down box where you select the employee's manager.
- Click the envelope icon next to the Email field to enter the employee's default e-mail address or type the e-mail address. This sends e-mail to the employee with a corporate LDAP compliant server.
- Click the Publish check box to share the employee information. Do not click the check box if the information is private.

Note: Click the Publish check box to enable synchronization with an LDAP-compliant server.

2 Enter the asset information as follows:

- Select New Asset in the Type column. The edit boxes below the grid become active.
- Select the type of asset from the drop-down list in the Type field.

  The asset types available identify the employee in the different OTM applications. Select from Account Code, Authorization Code, Extension, Phone Number, or Trunk Number. Based on the type selected, a corresponding field entry appears, into which you enter a value.
- If the employee will be the prime user of this asset, turn on the Prime check box. This allows several employees to use the same asset, while one employee in particular is the main owner of the asset and is assigned the cost.
- Click the Publish check box to share the employee asset information. Do not click the check box if the information is private
- Click Apply.

Click one of the following buttons:

- OK - Saves the employee information and closes the window.
- Apply - Applies the information configured.

- Apply/New - Saves the employee information and leaves the window open. The window is blank so you can add another new employee.
- Cancel - Closes the window without saving the employee information.
- Help - Accesses the online Help system.

Enable Web desktop access

You can give EndUsers an account on the OTM Server using the same process that is used to allow Administrators and HelpDesk users to access the Windows and Web Navigators; however, EndUsers are typically authenticated through a Windows NT domain account or LDAP. EndUsers do not normally have accounts on the OTM Server. For information on configuring User Groups for Web access, see "User Groups" on page 359. When the Windows NT domain or LDAP authentication method is used, use the OTM directory to map the following attributes:

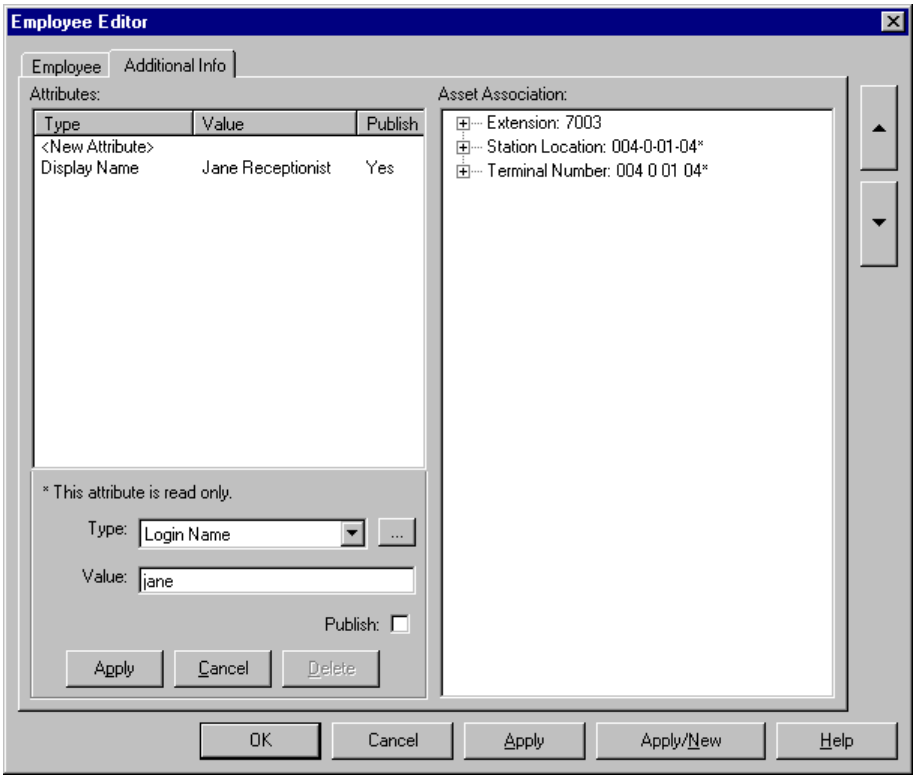
- Login Name - Required to associated users with their telephones
- User Group - Determines what the user can see and changes that they can make on their telephones
- Web Reporting Access Rights - Controls access to Web TBS billing reports

To enable Web desktop access:

1. From Station Administration, select View > Employee Selector.
2. Double click an employee's name in the Employee Selector window.

   The Employee Editor window for the selected employee opens.
3. Click the Additional Info tab in the Employee Editor dialog box. The Employee Editor dialog box—Additional Info tab opens (Figure 69).

Figure 69 Employee Editor dialog box—Login Name attribute



4 Select <New Attribute> in the Attributes pane.

5 Select Login Name from the Type drop-down box.

6 Enter the user's Windows NT Login Name for the attribute Value (If NT is the authentication method chosen for desktop users).

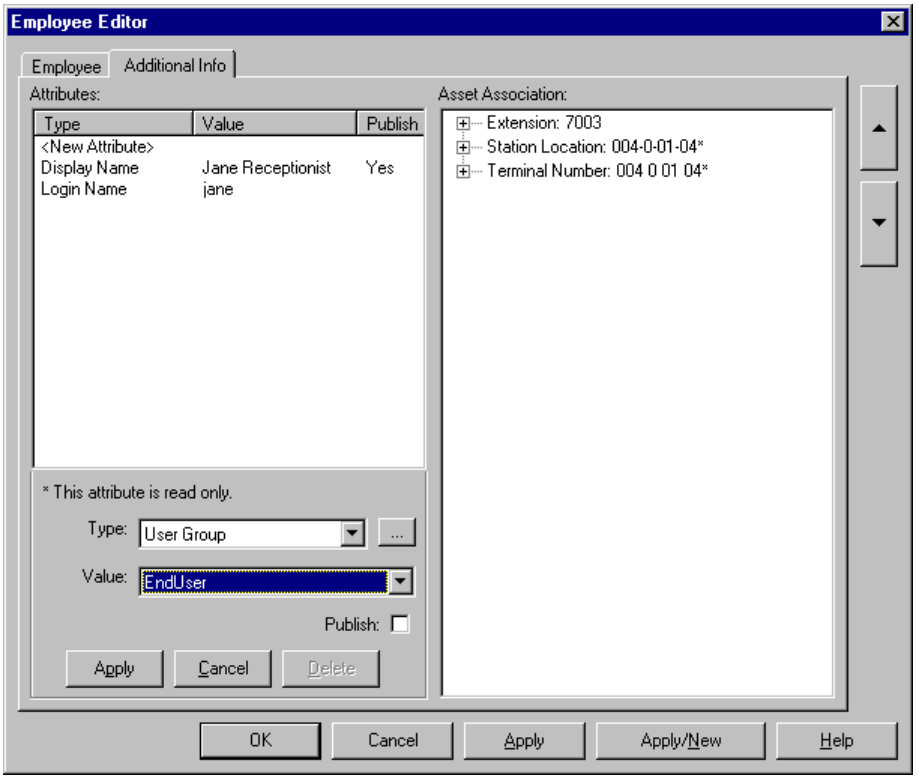
7 Click the Publish check box to enable synchronization with an optional LDAP compliant server.

8 Click Apply in the Attributes pane.

9 Select <New Attribute> in the Attributes pane.

10 Select User Group from the Type drop-down box (Figure 70).

Figure 70 Employee Editor dialog box—User Group attribute



11 Select “EndUser” from the drop-down box for the attribute Value to enable End User Web desktop user access - both for LDAP and Windows NT access.

Select “HelpDesk” from the drop-down box for the attribute Value to enable Help Desk Web desktop user access - both for LDAP and Windows NT access.

12 Click Apply in the Attributes Pane.

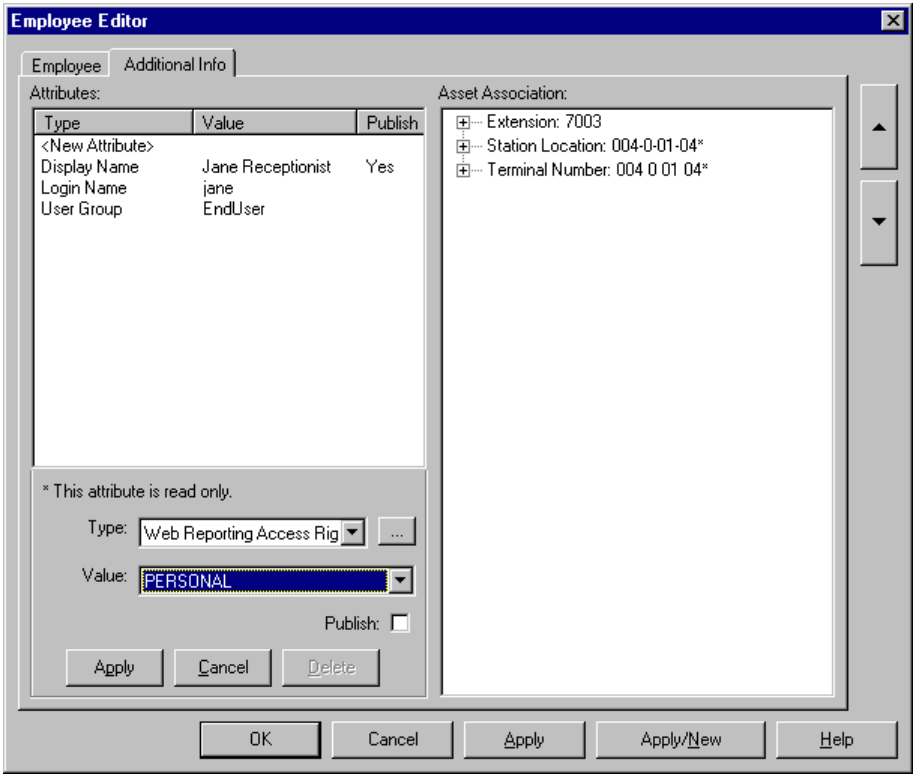
13 Select <New Attribute> in the Attributes pane.

14 Select Web Reporting Access Rights from the Type drop-down box (Figure 71).

15 Select one of the following access levels from the drop-down box for the attribute Value:

- All - Users assigned this role have the authority to view all the reports for the site/systems to which they are assigned. This is the access level that you typically assign to an Administrator.
- Peer - Users assigned this role have the authority to view the reports for all the entities in the same node in the Organizational Hierarchy and all its sub-nodes. See “Organizational Hierarchy Editor” on page 162. This is the access level that you typically assign to a person who manages several departments.
- Managed - Users assigned this role have the authority to view their own reports and the reports for all of the entities in the subnodes below their organization node in the Organizational Hierarchy. See “Organizational Hierarchy Editor” on page 162. This is the access level that you typically assign to a department manager.
- Personal - Users assigned this role have the authority to view their own data. This is the access level that you assign to a non-managerial employee.
- No Access - If no role is assigned for a user, their reporting access rights default to No Access.

Figure 71 Employee Editor dialog box—Web Reporting Access Rights attribute



Edit employee data

To edit employee data:

1. Click the Employee tab in the Employee Editor window. The selected employee data appears.
2. Edit the employee data as follows:
   - Edit the employee information in the appropriate fields.
   - How you access the Employee Editor determines if the Org. Path field shows a drop-down selection box or not. If the drop-down box is active, the organization structure tree displays. Select the organization node for the employee from the tree. If the drop-down box is not active, type the path to the organization node for the employee.

- The Manager field has a drop-down box where you select the employee's manager.
- Click the envelop icon next to the Email field to automatically enter the employee's default e-mail address or type the e-mail address.
- Click the Publish check box to share the employee information. Do not click the check box if the information is private.

Click one of the following buttons:

- OK - Saves the employee information and closes the window.
- Apply/New - Saves the employee information and leaves the window open. The Up and Down arrows appear on the right side of the window. Use these arrows to scroll to another employee record for updating.
- Cancel - Closes the window without saving the employee information.

3 Edit the property information as follows:

- Select the property you want to edit from the list of property in the grid at the right of the window. The edit boxes below the grid display the current values.
- Change the information in the edit boxes. If the property is new, the system automatically checks the Prime field
- Click Update.

Delete employee property

To delete property assigned to an employee:

1 Select the property you want to delete from the list of property in the grid at the right of the Employee Editor window.

2 Click the Delete key located below the grid.

Excess DN report

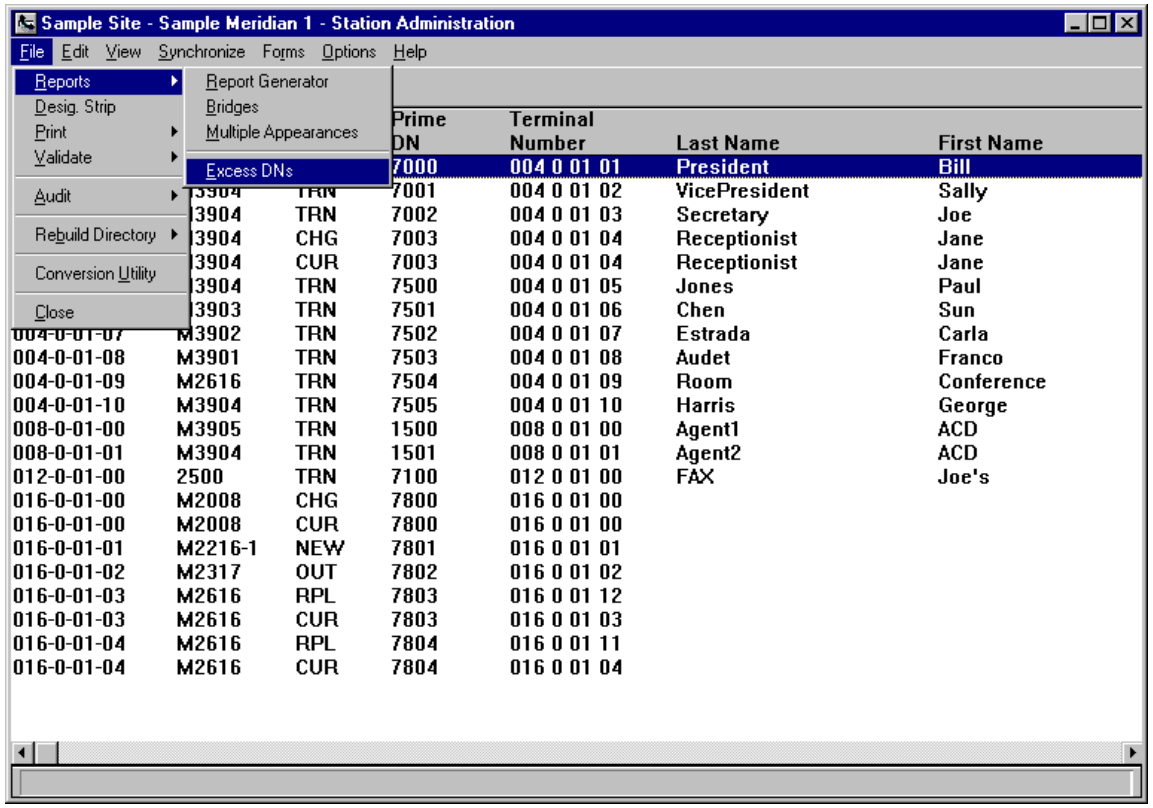
An employee listing in the Directory lists all the extensions associated with the employee. Normally, each of these extensions matches a DN in Station Administration. However, when a set (and with it the DN) is deleted from Station Administration, the corresponding entry in the Directory is not removed. The old

extensions remain in the Directory to provide information to billing department. Thus there is a possibility that some of the extensions in the Directory do not match with any DNs in Station Administration. These extensions are termed Excess DNs.

Station Administration has a facility to print off a report which lists these excess DNs against their owner employee.

This report can be run by selecting File > Reports > Excess DNs in the Station Administration window (Figure 72).

Figure 72 Excess DNs menu



Corporate Directory

OTM's Corporate Directory is a flexible tool for defining and generating reports of station data associated with a terminal number. Report data is provided by Station Administration. Data can include about 100 different data fields, including the name, extension, location, and department associated with each terminal number.

Note: Corporate Directory requires that you have Station Administration and Microsoft Excel 95 or later.

Defining and generating reports

To access the Corporate Directory tool:

➔ Select Utilities > Corporate Directory in the Navigator window.

The Corporate Directory window appears where you can view and manage reports.

You can use predefined reports or define new reports.

To define a report:

➔ Select Configuration > Add Report.

The New Report property sheet appears, where you can define data fields, column names, column order, and directory location for the report.

To generate a report:

1 Select File > Generate Report.

2 Choose one of the following:

- Select Now to immediately display the report in a Microsoft Excel window, print the report, or save it to a file.
- Select Schedule to have the report automatically generated to a printer or Excel file at a later time.

You may highlight a report, and select File > Generate > Open to display the most recently generated version of that report.

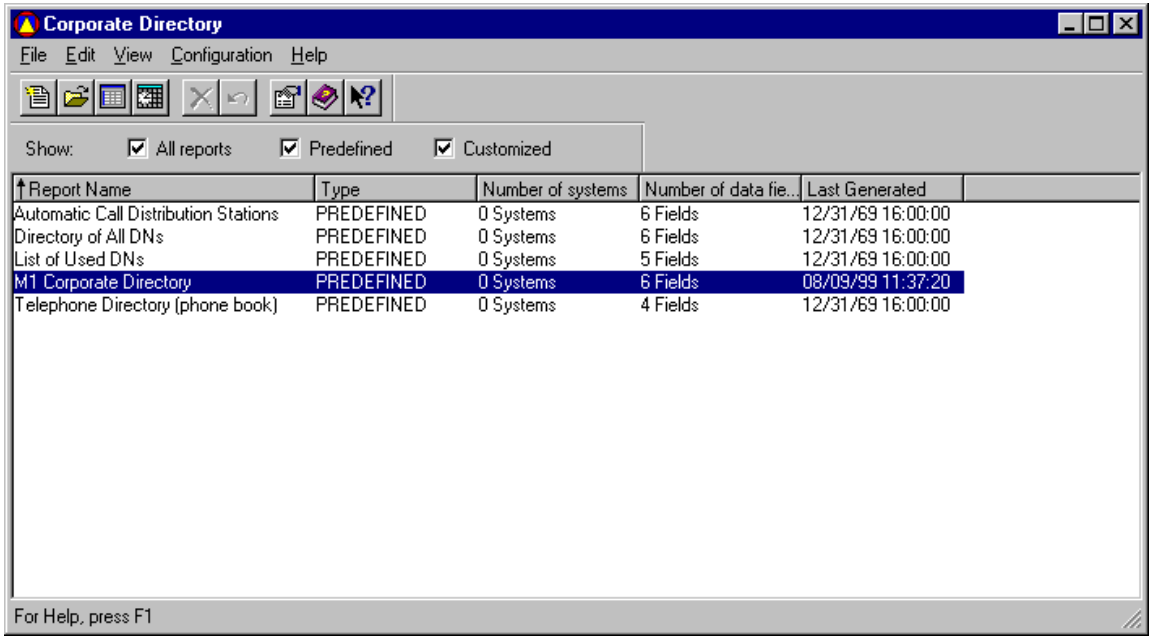
Note: Before you can generate reports, Station Administration data must be downloaded from the switch and you must have at least one customer configured for each system.

See "Generating reports" on page 583 for more information.

Corporate Directory window

The Corporate Directory main window presents a graphical way to work with station information. Use this window's commands from the drop-down menus or the toolbar to view, manage, and generate your reports. You see a list of predefined report formats the first time the main Corporate Directory window is launched (Figure 73).

Figure 73 Corporate Directory Window



Each report format has the following attributes, as noted by the column headers:

- Report Name - Names of available reports
- Type - Notes if the report is either predefined or customized
- Number of systems - Number of systems for which the report will be generated
- Number of Data Fields - Number of data fields in the report
- Last Generated - Date and time when the report was last generated

Note: Double-click a report name to display that report's property sheet. See "Report properties" on page 188.

Working with the Corporate Directory window

Use this window's commands from the drop-down menus or the toolbar to view, manage, and generate your reports.

Menu selections

Commands in Corporate Directory are available from the pull down menus. The tables below describe the available commands.

Table 9 File menu selections

Selection	Description
Generate Report/ Now	Shows a dialog box where the user selects a display method for the report. The user may display a report in a spreadsheet, print it to a default printer, or save it to a text file.
Generate Report/ Schedule	Shows a dialog box where the user selects a report destination and a specific date and time and other scheduling properties for the report.
Generate Report/ Open	Opens a previously generated and saved report for the selected item and displays it in a spreadsheet format. If no such report is available, a message box appears asking the user to verify the path and file name of the export file or regenerate the report.

Table 9 File menu selections (continued)

Selection	Description
Properties	Opens the property sheet for the selected report and allows the user to configure the report.
Close	Saves the window's current settings and exits the application.

Table 10 Edit menu selections

Selection	Description
Undelete Report	Recovers the last deleted user-customized report.
Delete Report	Removes the selected user-customized report. Predefined reports cannot be deleted.

Table 11 View menu selections

Selection	Description
Toolbar	Displays or hides the tool bar. The menu shows a check mark next to the item when the toolbar appears.
Status Bar	Displays or hides the status bar. The menu shows a check mark next to the item when the status bar appears.
Filter Toolbar	Displays or hides the filter bar. The menu shows a check mark next to the item when the filter bar appears.

Table 12 Configuration menu selections

Selection	Description
Add Report	Displays a new report property sheet. Use this to create a customized report.
Column Name	Displays a dialog box where the user defines column names for data fields.

Table 13 Help menu selections

Selection	Description
Help Topics	Displays the index of Help topics.
What's This	Provides context-sensitive Help on the next item you select. Click anywhere else to go to the first topic in the Help topic list.
About Corporate Directory	Displays information about the application.

Toolbar

The toolbar provides another way of executing menu commands. Common tasks are available from the toolbar (Figure 74).

Figure 74 Corporate Directory toolbar

Table 14 describes the function of each button.

Table 14 Toolbar buttons

Button	Description
	Add Report
	Open Report
	Generate Report
	Schedule Report
	Delete Report

Table 14 Toolbar buttons (continued)

Button	Description
	Undelete Report
	Properties: Displays information about the application
	Help Topics: Displays the index of Help topics
	Context Help: Provides context-sensitive help on the next item you select. Click anywhere else to go to the first topic in the Help topic list.

Filter bar

Use the filter bar to show reports in the Corporate Directory window, based on their type. The default setting displays all reports (Figure 75).

Figure 75 Filter toolbar

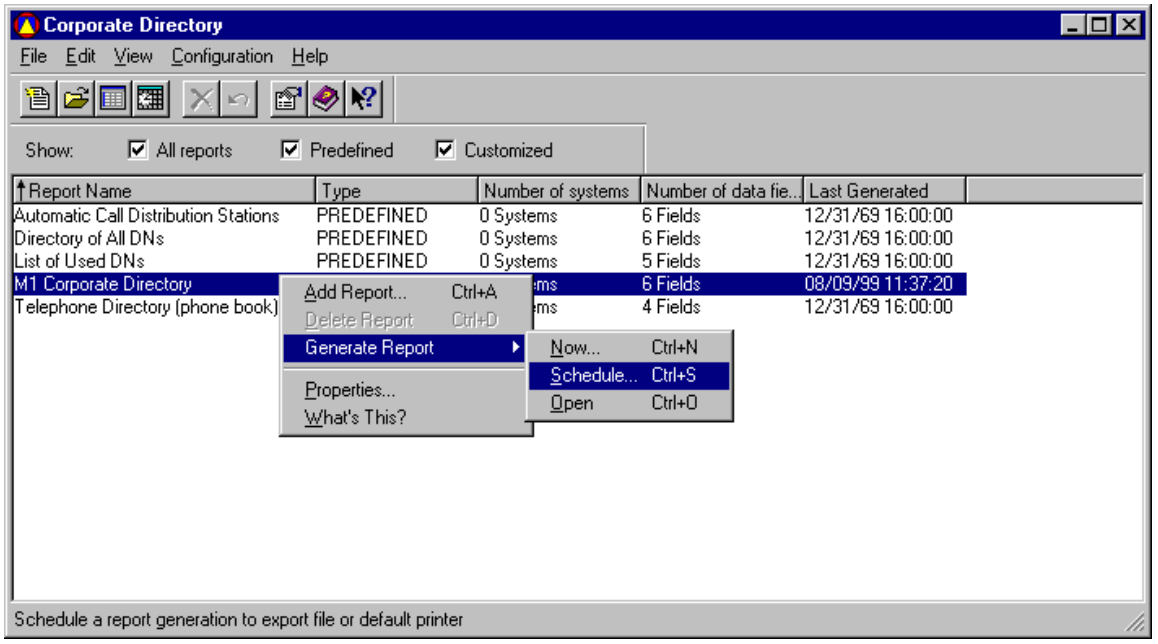
The available settings are:

- All Reports: Displays all reports, predefined and customized
- Predefined: Displays only the predefined reports
- Customized: Displays only the customized reports

Pop-up menus

Pop-up menus show the available commands for a selection. Pop-up menus are activated by clicking the right-mouse button while the cursor is in the report list portion of the Corporate Directory window. Unavailable commands are dimmed. Menu items from the pop-up menu behave identically to the menu items in the pull-down menus (Figure 76).

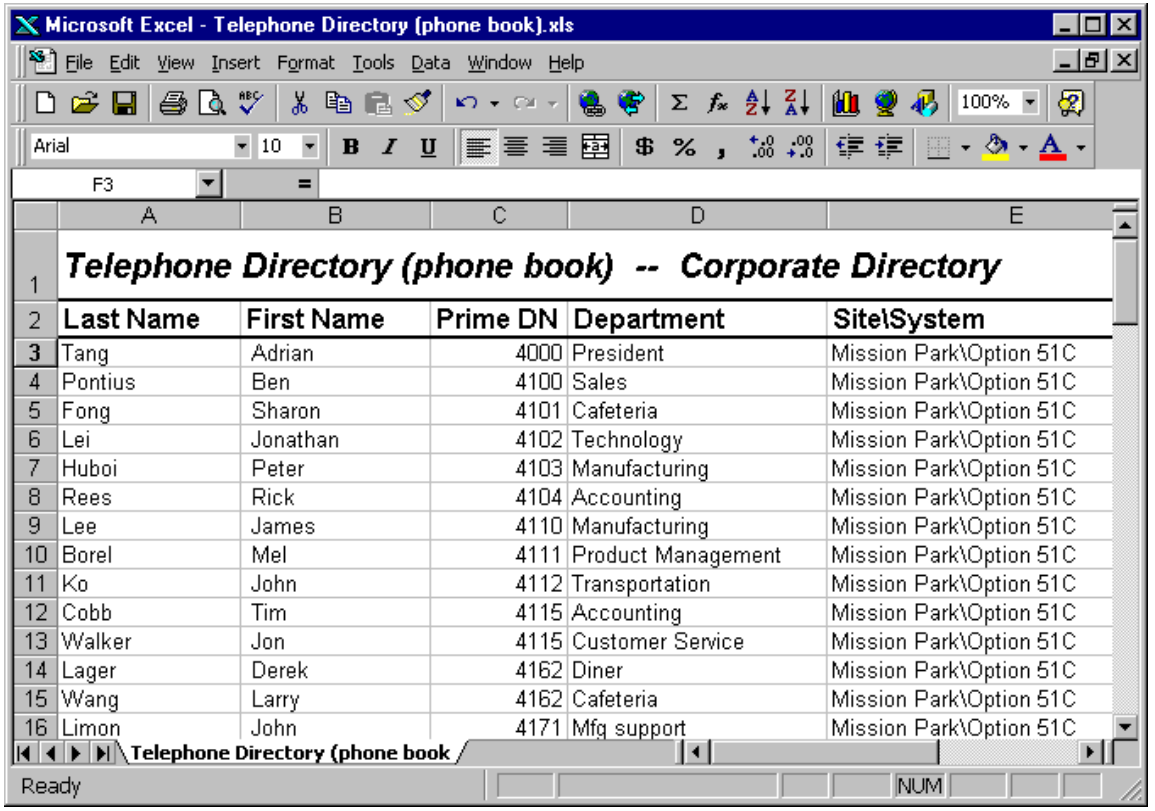
Figure 76 Pop-up menu



Generating reports

The Corporate Directory feature lets you view, manage, and generate reports using available station information from systems configured with at least one user. Reports can be viewed on screen, printed, or saved to a file. Report layout and formatting is done through Microsoft Excel. See Figure 77 for an example of a typical report format.

Figure 77 Typical report format



	A	B	C	D	E
1	*Telephone Directory (phone book) -- Corporate Directory*				
2	**Last Name**	**First Name**	**Prime DN**	**Department**	**Site\System**
3	Tang	Adrian	4000	President	Mission Park\Option 51C
4	Pontius	Ben	4100	Sales	Mission Park\Option 51C
5	Fong	Sharon	4101	Cafeteria	Mission Park\Option 51C
6	Lei	Jonathan	4102	Technology	Mission Park\Option 51C
7	Huboi	Peter	4103	Manufacturing	Mission Park\Option 51C
8	Rees	Rick	4104	Accounting	Mission Park\Option 51C
9	Lee	James	4110	Manufacturing	Mission Park\Option 51C
10	Borel	Mel	4111	Product Management	Mission Park\Option 51C
11	Ko	John	4112	Transportation	Mission Park\Option 51C
12	Cobb	Tim	4115	Accounting	Mission Park\Option 51C
13	Walker	Jon	4115	Customer Service	Mission Park\Option 51C
14	Lager	Derek	4162	Diner	Mission Park\Option 51C
15	Wang	Larry	4162	Cafeteria	Mission Park\Option 51C
16	Limon	John	4171	Mfg support	Mission Park\Option 51C

You can either generate a report immediately or with a defined schedule with specific dates, times, and intervals. Generated reports use the data extracted from the OTM data base. These reports are automatically saved with a system default name to the default location unless you specify another name or location. A total of ten reports can be automatically saved in this manner. Subsequent saved reports overwrite the earliest ones saved as the system recycles through its default names.

Generate reports now

To generate a report immediately, select the report name from the window and click on the Generate Report Now tool bar button. This displays the Generate Report dialog box. Select one of the three destination options. Click OK to start the report generation process or Cancel to abort the process (Figure 78).

Figure 78 Generate Report Now dialog box

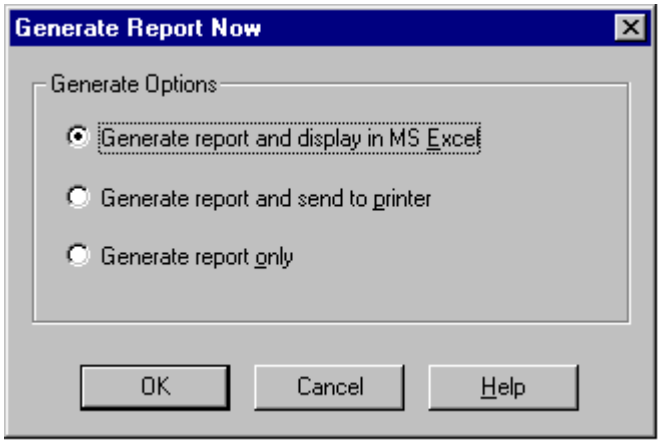


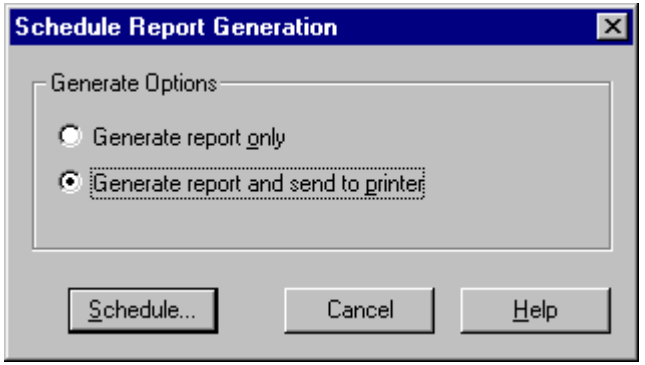
Table 15 Generate Report Now dialog box controls

Control	Description
Generate report and display in MS Excel	Generates a new report and displays it in MS Excel **Note:** You must have MS Excel installed and configured to use this option.
Generate report and send to printer	Generates a new report and sends it to a specified printer
Generate report only	Generates a report and saves it to disk
OK	Starts the report generation process and closes the window
Cancel	Exits the dialog box without generating a report
Help	Displays the online Help topic associated with this dialog box

Generate reports by schedule

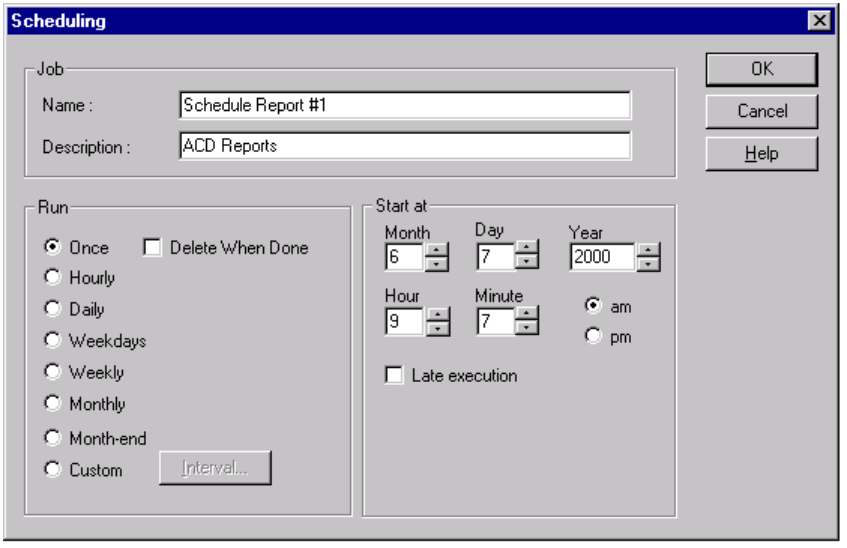
Select the report name from the window and click on the Schedule Report tool bar button. This displays the Schedule Report Generation dialog box. Use this dialog box to select one of two destination options (Figure 79).

Figure 79 Schedule Report Generation dialog box



Click Schedule in this window to open the Scheduling window. Use the Scheduling window to specify when and how often to generate the report.

Figure 80 Scheduling window



Report properties

Each report shows a specific set of station data. Corporate Directory provides a set of reports whose properties are already defined. See “Predefined reports” on page 195. You can create customized reports for your specific needs. See “Customized reports” on page 196.

View report properties by double-clicking or clicking the right mouse button and selecting Properties on an available report in the Corporate Directory window. This opens a property sheet with three tabs titled General, Data Fields, and Output. The property sheet contains information specific to the selected report.

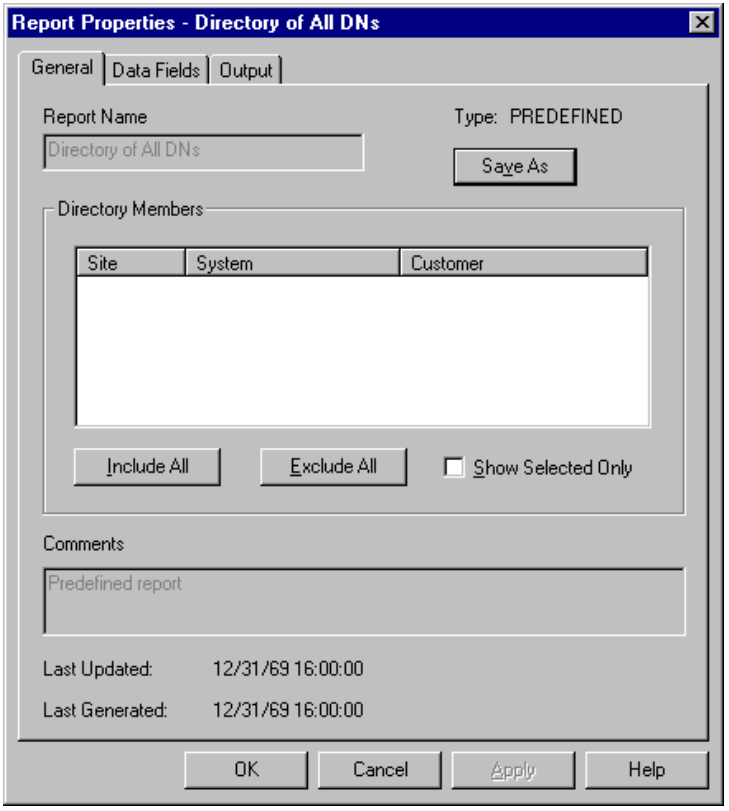
There are four buttons common to each property sheet:

- OK - Saves any changes and exits the property sheet
- Cancel - Exits the property sheet without saving any changes
- Apply -Saves the changes without exiting the property sheet
- Help - Displays Help topics for the property sheet

General tab

Use the General tab to view or define a report name. Additionally, use the General tab to specify multiple sites and systems for which the report will be generated. All available sites and systems are listed. Click on the check box next to an entry to include it in the report. Click on a marked check box to deselect it and exclude it from the report. Reports are generated with data from all included sites and systems (Figure 81).

Figure 81 General Tab in the Report Properties sheet



Controls in the General tab include:

- Report Name - Displays the report name. New report names are entered here. Users are limited to report names of up to 100 characters.
- Save As - Saves the current report as a new customized report. The “Type” notation automatically changes from Predefined to Customized as needed.

Note: The new report name must be unique. Otherwise, the Save As command fails.

- Directory Members
  - — Sites/System/Customer - Displays available sites and system names. Check boxes indicate if the site or system is included in the report.

— Include All - Selects all sites and systems; all boxes are checked.
— Exclude All - Deselects all sites and systems; all boxes are unchecked.
— Show Selected Only check box - Toggles the list to display selected items only or all items.

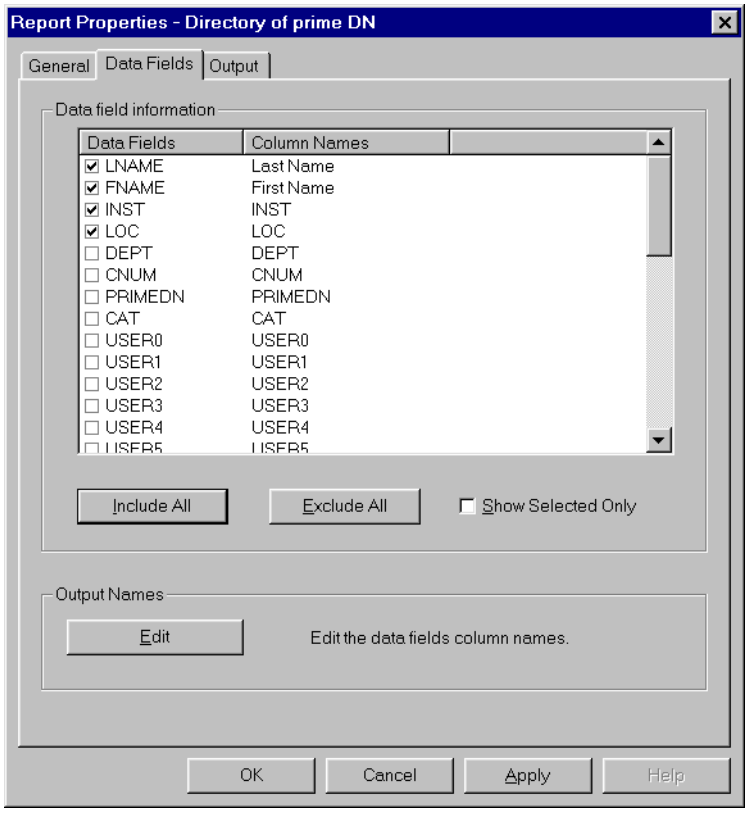
- Comments - Accepts user comments up to 256 characters for customized reports only.
- Last Updated - Displays when the last change was made to the report.
- Last Generated - Displays when the report was last generated. This field is empty if the report has never been generated.

Data Fields tab

Use the Data Fields tab to configure the report's data fields and column names. Supported station data fields appear. See "Supported data fields" on page 197.

Click the check box to include that particular field in the report. For each data field, you can specify a column name; otherwise the report uses the default mnemonic (Figure 82).

Figure 82 Data Fields tab in the Report Properties sheet



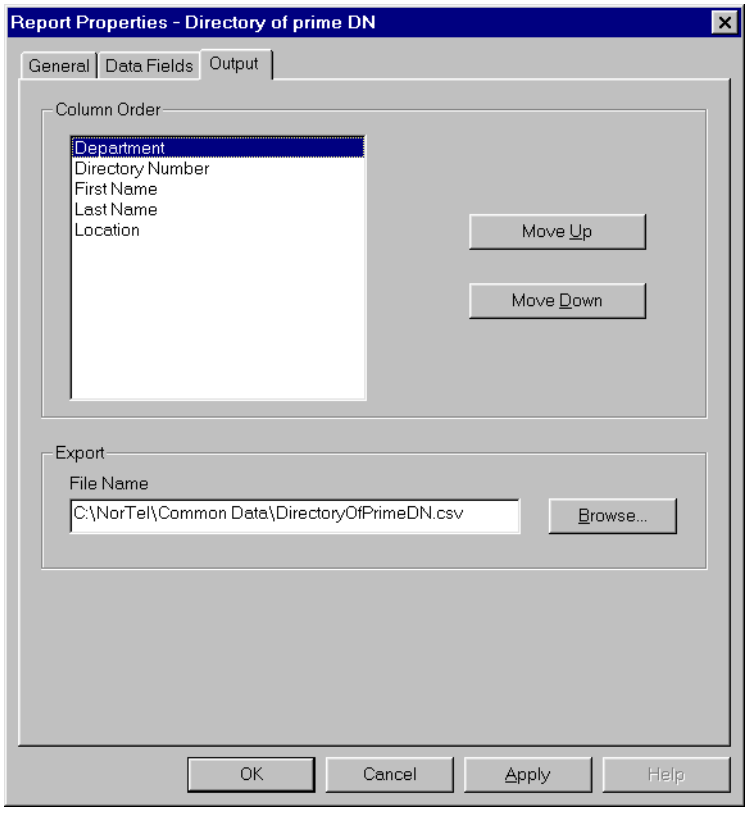
Controls in the Data Fields tab include:

- Data Fields - Lists all the available station data fields at the corporate level. Use the check box to select or deselect a data field.
- Include All - Selects all data fields; all boxes are checked.
- Exclude All - Deselects all data fields; all boxes are unchecked.
- Show Selected Only - Toggles the list to display selected items only or all items.
- Edit - Displays a dialog box to edit the column names for the data fields.

Output tab

Use the Output tab to define the report's output format and export destination for the results (Figure 83).

Figure 83 Output tab in the Report Properties sheet



The Output page displays the order the columns appear in the report (left to right). Additionally, it displays the file and path name to be used when the report is generated and saved to a file. Type the path and filename or use Browse to navigate the directory structure to find the desired file.

Controls in the Output tab include:

- Move Up - Moves the selected column name up the list by one position
- Move Down - Moves the selected column name down the list by one position
- File Name - Allows the user to enter the path and file name for the export file
- Browse - Allows the user to navigate the directory structure to search for a path and file name

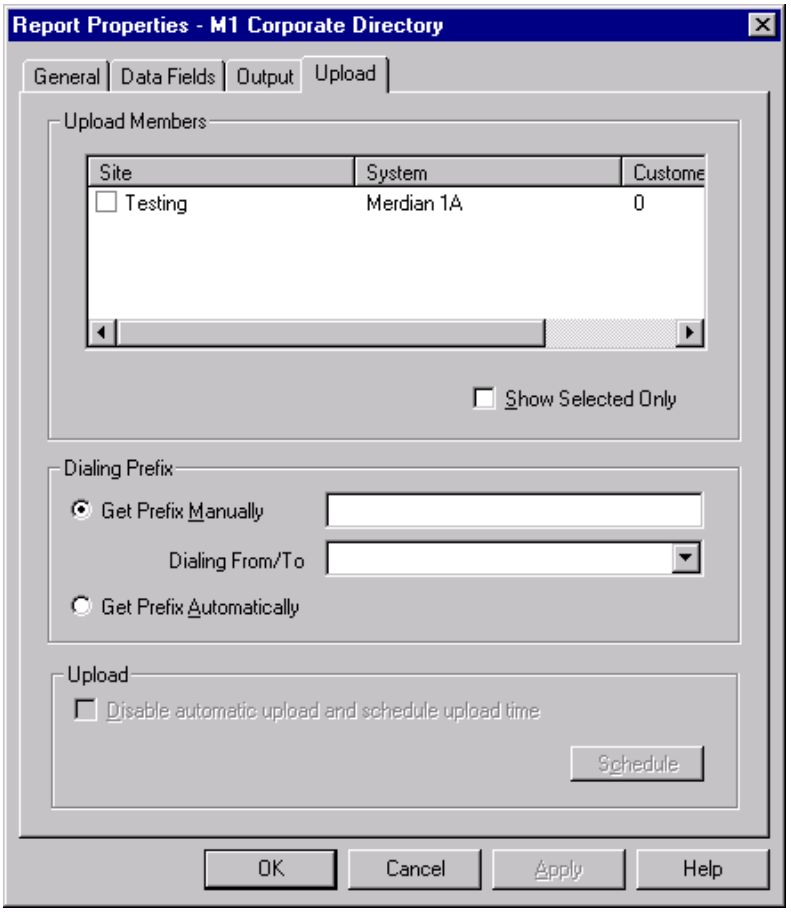
Upload tab

The Upload tab is used in conjunction with the Corporate Directory feature for M3900 Series and IP telephones. This tab only appears in the property sheet for the M1 Corporate Directory predefined report (Figure 84). Use the Upload tab to configure the target system, upload members, dialing prefix, and upload schedule. The Upload Members frame contains a list of available systems. Use the check boxes to select the systems that are to receive the corporate directory data. Once a system is checked, a Target Selection dialog box appears. This box contains a list of the available target systems. Use the check boxes to select the systems from which you want to collect the corporate directory data, and then click OK.

The Dialing Prefix frame allows you to set any access codes required for dialing between systems. Choose whether to obtain the dialing prefix directly from the Meridian 1 or Succession CSE 1000 system or to set the prefix manually. If you select the Get Prefix Manually option, you must then use the Dialing From/To drop-down box to select your systems and enter the dialing prefix. If no dialing prefix is required, you can leave this field empty. If you select Get Prefix Automatically, the dialing prefix is retrieved from the Meridian 1 or Succession CSE 1000 system.

The Upload frame allows you to schedule the upload of corporate directory data. If the Disable automatic upload and schedule upload time check box is not checked, the corporate directory data is uploaded automatically after the corporate directory report is generated. If this check box is checked, the Schedule button is enabled, and you can schedule the upload independent of the report generation.

Figure 84 Upload tab in the Report Properties sheet



Predefined reports

In addition to the M1 Corporate Directory predefined report, see "Corporate Directory feature for M3900 Series and IP telephones" on page 201. Corporate Directory includes four commonly generated reports as predefined reports. These are listed below, along with their data fields and column names:

- Automatic Call Distribution Stations report
  - ACS - Position IDT
  - CLS - Trunk/Call Type Access Restriction
  - SPID - Supervisor Position ID

  - LOC - Location
  - TN - Terminal Name
  - LNAME - Last Name
- Telephone Directory report
  - LNAME - Last Name
  - FNAME -First Name
  - PRIMEDN - Directory Number
  - DEPT - Department
- Directory of Prime DNs report
  - PRIMEDN - Directory Number
  - INST - Instrument Type
  - TN - Terminal Number
  - LOC - Location
  - LNAME - Last Name
  - FNAME - First Name
- Listing of Used DNs report
  - PRIMEDN - Directory Number
  - LNAME - Last Name
  - FNAME -First Name
  - LOC - Location
  - TN - Terminal Number

Customized reports

Use Corporate Directory to create new report formats for your specific reporting needs. On the Report Properties dialog box, select the data fields for the sites and systems.

You can create a customized report by starting with an existing report format. Use the Report Properties dialog box to revise the existing report. Be sure to save the customized report with a new name.

Click Add Report to create a new report. This command displays a blank Report Properties dialog box with all options set to “off” by default. The Report Name field is mandatory. The screen presents an error message if this field is left empty when you click OK or Apply.

Supported data fields

The table below lists the acronym and data fields supported by Corporate Directory:

Table 16 Supported data fields

Data field	Description
LNAME	Last Name
FNAME	First Name
INST	Instrument
LOC	Location
DEPT	Department
CNUM	Customer Number
PRIMEDN	Prime DN
CAT	Category
USER0	
USER1	
USER2	
USER3	
USER4	
USER5	
USER6	
USER7	
USER8	
USER9	
Comment	
EQUIPMENT	Equipment
SSTAT	Sync Status
AOM	Number of Add on Modules
ECOST	Equipment Cost
COSTID	Cost ID
DIV	Division
DIGS	Dial Intercom Groups

Table 16 Supported data fields (continued)

Data field	Description
ACDS	Key Assigned to Automatic Call Distribution (ACD)
ADN	All Directory Numbers
EHTK	External Hunt DN
EFDK	External Forward DN
AAA	Automatic Answer Back
AEFD	Alternate External Flexible Call Forward
AEHT	Alternate External Hunt DN
AGTA	ACD Agent Analog Telephone
AHNT	Alternate Hunt DN
ALDR	M3000 Directory Lock - Discontinued
AOS	observation of Supervisor
AUTU	Station Specific Authcodes
CCSA	Controlled Guest Telephone
CDEN	Card Density
CFHA	Call Forward/Hunt Override
CFTA	Call Forward by Call Type
CFXA	Call Forward External
CLS	Trunk/Call Type Access Restriction
CNDA	Call Party Name Display
CNIA	Call Number Information
CRCS	Flexible Code Restriction Class
CWA	Call Waiting - from Incoming Trunk
CWNA	ACD Call Waiting Notification Set
DDGA	Present/Restrict Calling Number
DDS	Digit Display
DELA	Dealer Allowed
DES	1–6 Character Designator
DIG	Dial Intercom Group<space>Member
DN	Station Directory Number
DNDA	Dialed Number Name Display

Table 16 Supported data fields (continued)

Data field	Description
DPUA	Directory Number Pickup
EFD	CFNA DN for External Calls with CFTA
EHT	Hunt DN for External Calls with CFTA
FBA	Call Forward Busy for DID Calls
FCAR	Force Charge Account
FDN	Flexible Call Forward No Ans DN
FNA	Call Forward No Answer
GPUA	Group Pickup
HBTA	Hunt by DID Call Type
HFA	Hands Free
HSPA	Hospital Room with DID Management
HTA	Hunting
HUNT	Hunt DN - All Calls, or Internal Calls Forward
IAMA	Intercept Computer Answering Machine
ICT	Intercept Computer Terminal/Printer
IPNA	Intercept Position
IRGA	Intercept Computer Interrogation Set
LANG	Language for Automatic Wake Up
LDN	Departmental LDN
LHK	Last Hunt Key for Short Hunt
LNA	Last Number Redial
LPA	Message Waiting Lamp
MCRA	Multiple Call Arrangement DN
MCTA	Malicious Call Trace
MLWU_LANG	Language for Automatic Wake Up
MRA	Message Registration
MTA	Maintenance Set
MWA	Message Waiting at Message Service
NAMA	Present/Restrict Calling Name
NCOS	Network Class of Service

Table 16 Supported data fields (continued)

Data field	Description
PDN	Calling Line ID from Prime DN
PRI	ACD Agent Priority Level
PUA	Call Pickup
RCC	Restricted from Receiving Collect Call
RNPG	Ringing Number Pick-up Group
RTDA	Call Redirection by Time of Day
SCPW	Station Control Password
SFA	Second Level CFNA
SFDN	Secretarial Forwarding DN
SFLT	Secretarial Filtering Boss/Secretary
SGRP	Scheduled Access Restriction Group
SPID	Supervisor Position ID
SPV	ACD Supervisor/Agent
SSU	System Speed Call List Number
TEN	Multi-Tenant Number
TENA	Tenant Service
TGAR	Trunk Group Access Restriction
TN	Terminal Number
TSA	Three Party Service
USMA	Meridian 911 Position
VISI	Visiting Portable
VMA	Virtual Message Agent
WRLS	Wireless
XLST	Pretranslation
XRA	Ring Again

Corporate Directory feature for M3900 Series and IP telephones

The Corporate Directory feature allows M3903, M3904, M3905 and IP telephone sets to display and access a corporate-wide directory. For this feature to function across a network of Meridian 1 and Succession CSE 1000 systems, each system must access corporate directory data from the other Meridian 1 and Succession CSE 1000 systems on the network. For a description on how to use the Corporate Directory feature on the M3903, M3904, and M3905 telephones, see *M3900 Series Meridian Digital Telephones; Description, Installation, and Administration* (553-3001-216). For information on IP telephones, see *Internet Terminals: Description* (553-3001-217).

OTM Corporate Directory supports combining station data from multiple Meridian 1 and Succession CSE 1000 systems, and uploading this data to a Meridian 1 or Succession CSE 1000 system. The Corporate Directory feature allows you to select from which systems the data will be collected, the "target" systems, and to which systems the data will be uploaded, the "upload members."

When a system is newly configured, the Corporate Directory database does not exist. You must use OTM to extract the Station Administration data from the OTM database to form a new database called the Corporate Directory database. Extract data from the following fields: name, phone number, listed directory number, customer number, and department number. The Corporate Directory database is then uploaded to the Meridian 1 or Succession CSE 1000 system where it becomes activated for use by that system's M3903, M3904, M3905, and IP telephone users. You should update the Corporate Directory database with the latest Station Administration data on a regular basis. Regular updates to the Corporate Directory database ensure that telephone user additions and deletions are captured. You can manually schedule the update for a predefined time, or to automatically occur after the OTM report is generated.

Requirements

1. Upload members (systems to which the corporate directory data will be uploaded), must be X11 Release 25 or higher for Meridian 1 systems. Upload members that are Succession CSE 1000 systems must be Release 2.0 or higher and must be equipped with IP Line 3.0.

2. Target systems can be Meridian 1 systems on any X11 release or Succession CSE 1000 systems. Station data from target systems will come from the OTM Station Administration database for those systems. Be sure the station data is synchronized with the Meridian 1 or Succession CSE 1000 system by retrieving station data from within Station Administration.

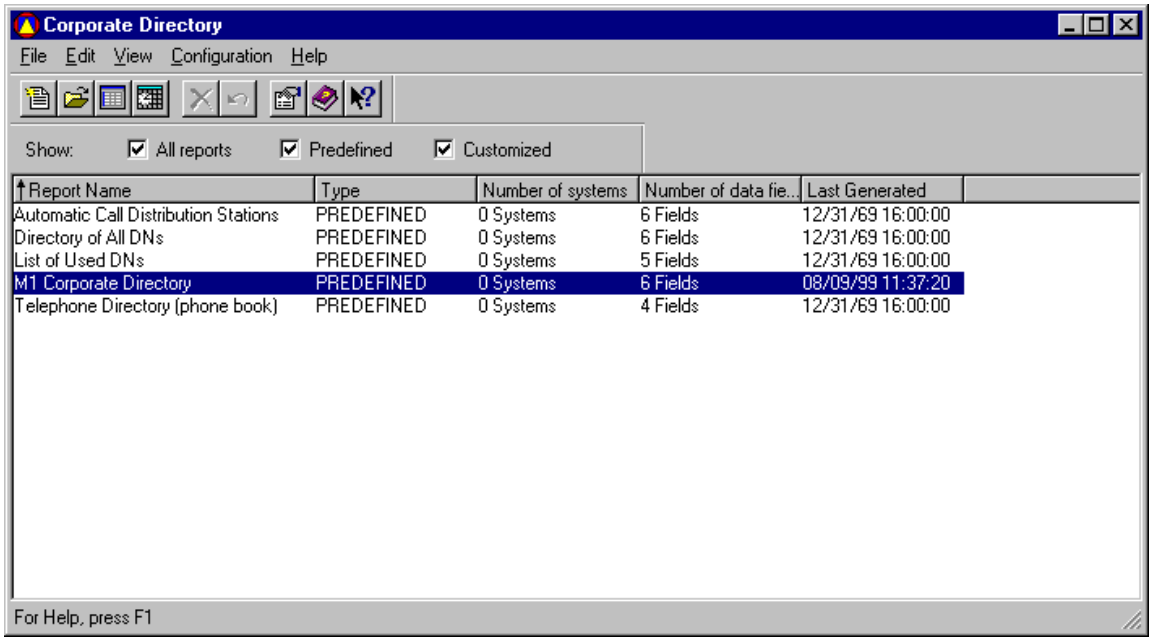
Upload configuration

The Corporate Directory upload is configured using the predefined M1 Corporate Directory report in OTM Corporate Directory. To configure the upload:

1 From the OTM System window, select Utilities > Corporate Directory.

The Corporate Directory window opens (Figure 85).

Figure 85 Corporate Directory window



2 In the Corporate Directory window, select the M1 Corporate Directory predefined report.

You cannot add a new field, modify the existing fields, or delete any fields in this report.

Note: It is very important that you select the M1 Corporate Directory Predefined report. This report is the only report that can be uploaded to Meridian 1 and Succession CSE 1000 systems for use with the Corporate Directory feature.

3 Use one of the following three methods to access the report properties window:

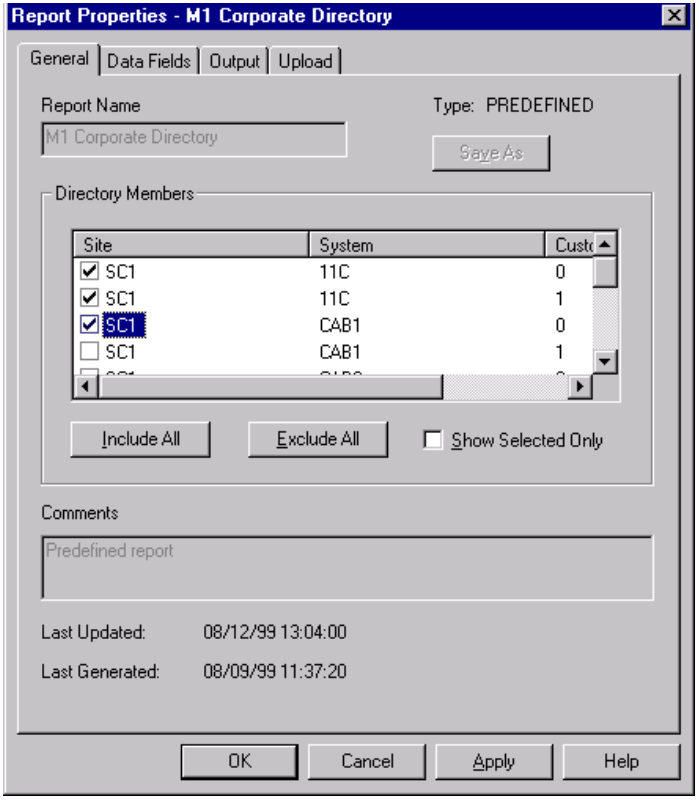
- Double-click on the highlighted line.
- Click on the properties button in the toolbar.
- Select File > Properties.

Any of these selections display the report properties.

4 Click the General tab.

The Directory Members list shows the systems that are available to configure (Figure 86).

Figure 86 General tab in the Report Properties sheet

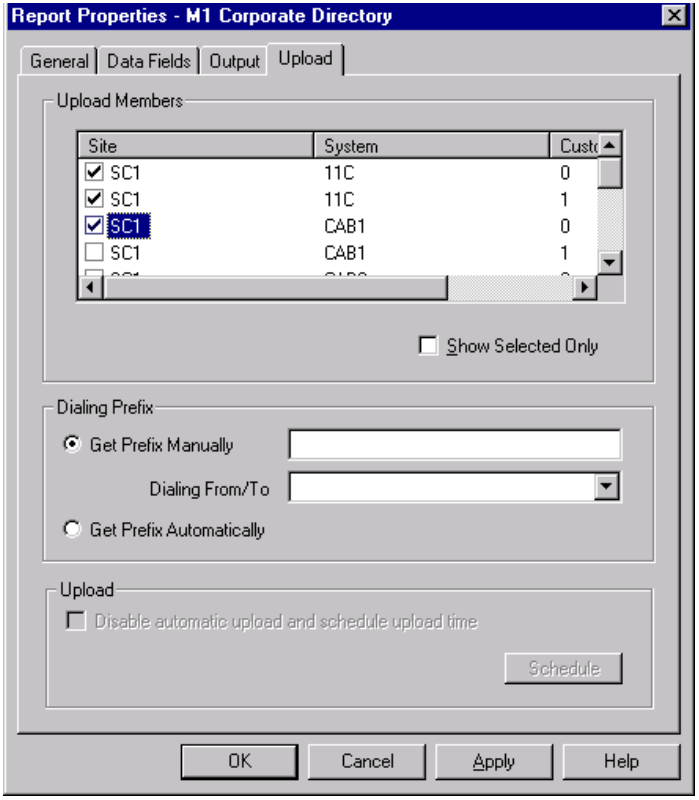


5 Check the boxes corresponding to the systems from which you will be collecting data.

Note: The Data Fields and Output tabs are fixed: you cannot change the information in these tabs.

6 Click the Upload tab to configure the upload members, target systems, dialing prefix, and upload schedule (Figure 87).

Figure 87 Upload tab in the Report Properties sheet

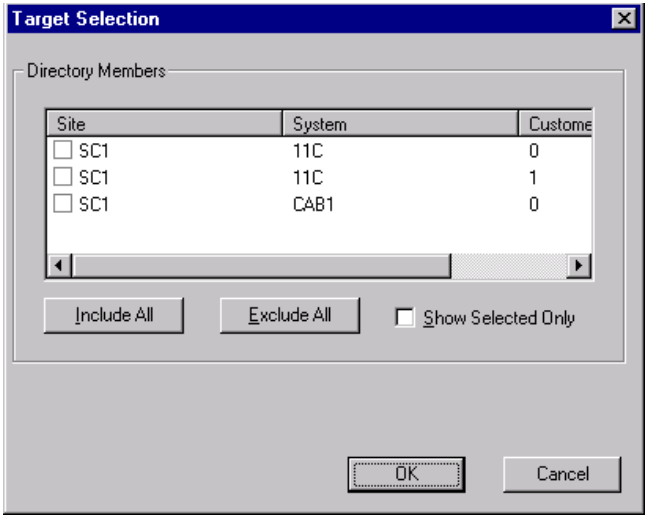


The Upload Members frame contains a list of available Meridian 1 and Succession CSE 1000 systems.

7 Check the boxes corresponding to the systems to which you want the corporate directory data uploaded.

Once a system is checked, a Target Selection dialog box appears with a list of available target Meridian 1 and Succession CSE 1000 systems (Figure 88).

Figure 88 Target Selection dialog box



8 In the Target Selection dialog box, check the Meridian 1 and Succession CSE 1000 systems from which you want to collect the corporate directory data.

9 Click OK.

The Dialing Prefix frame allows you to set any access codes required when dialing between systems.

10 Click the appropriate radio button to choose whether to get the dialing prefix automatically from the Meridian 1 or Succession CSE 1000 system, or to set the prefix manually.

- If you choose the Get Prefix Manually option, you must then use the Dialing From/To drop-down box to select your systems, and then type in the dialing prefix.

Note: If no dialing prefix is required, such as when you are using Coordinated Dialing Plan, where no extra digits are required to call between systems, you can leave this field empty.

- If you choose Get Prefix Automatically, the dialing prefix is retrieved from the system, but the upload may take longer than using the Get Prefix Manually option.

The Upload frame allows you to schedule upload of corporate directory data.

11 Determine whether you want to automatically upload data or schedule the upload to occur at a specific time:

- If the Disable automatic upload and schedule upload time check box is unchecked, the corporate directory data is uploaded automatically after the corporate directory report is generated.

Note: If automatic upload is not disabled, your request is sent to the scheduler queue after the report is generated. The scheduler executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

- If the Disable automatic upload and schedule upload time check box is checked, the Schedule button becomes enabled and you can schedule the upload to occur separately from the report generation.

Report Generation and Upload

To generate a corporate directory report and upload the data to the upload members:

➔ Choose File > Generate Report.

You can choose to run the report now or schedule the report to run later. If you have automatic upload enabled, the upload occurs when report generation completes.

Note: If you select Now, your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

Dialog boxes indicate the progress of report generation and upload as these tasks run. The amount of time it takes to upload the corporate directory data differs based on the number of stations you are uploading. Also, if you have chosen to get the dialing prefix automatically from the Meridian 1 or Succession CSE 1000 system, the upload takes longer than the manual method.

Once the upload is complete, open the file Uploader.log in the Local Data directory to check the upload status. The contents of this file indicate whether the upload was successful.

Event Log Viewer

This section contains a general overview of the Event Log Viewer. It describes its functions and purpose. For complete details on how to use the Event Log Viewer, refer to the online Help.

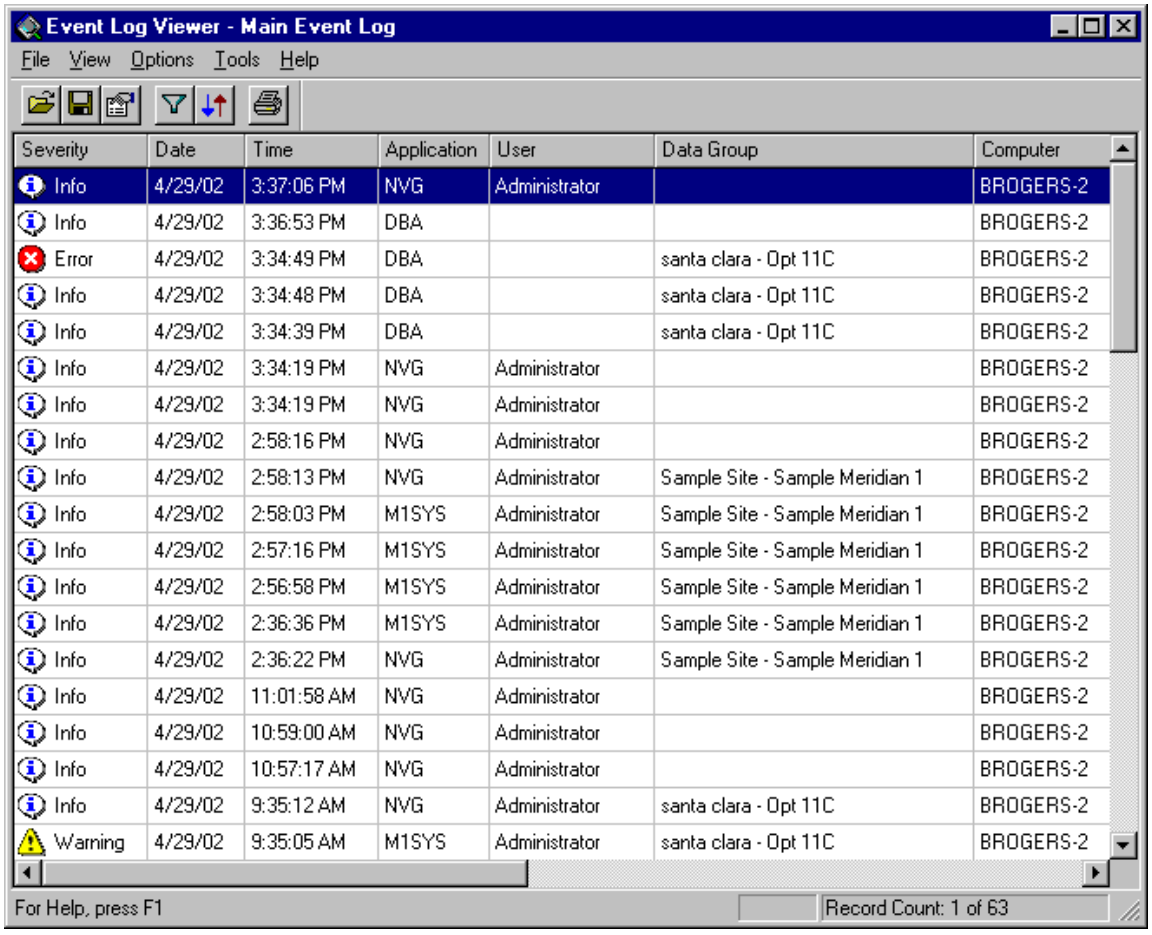
Overview

Use the Event Log Viewer to view the records of all operations that are run from the Optivity Telephony Manager. The Event Log Viewer displays the event records stored in the Event Log. The Event Log Viewer also has features such as event sorting and filtering.

Interface

Select Event Log Viewer from the Maintenance menu of the OTM Navigator window. The main window of the Event Log Viewer displays the Event Log data in a report layout (Figure 89). Column headings display text describing the meaning of the data it contains. You can change the size of columns by dragging on the divisions that separate the headings.

Figure 89 Event Log Viewer window



File menu

The File menu contains commands to open and close Event Logs, print Event Log reports, and maintain the Main Event Log.

View menu

The View menu commands allow you to change the way you view an Event Log.

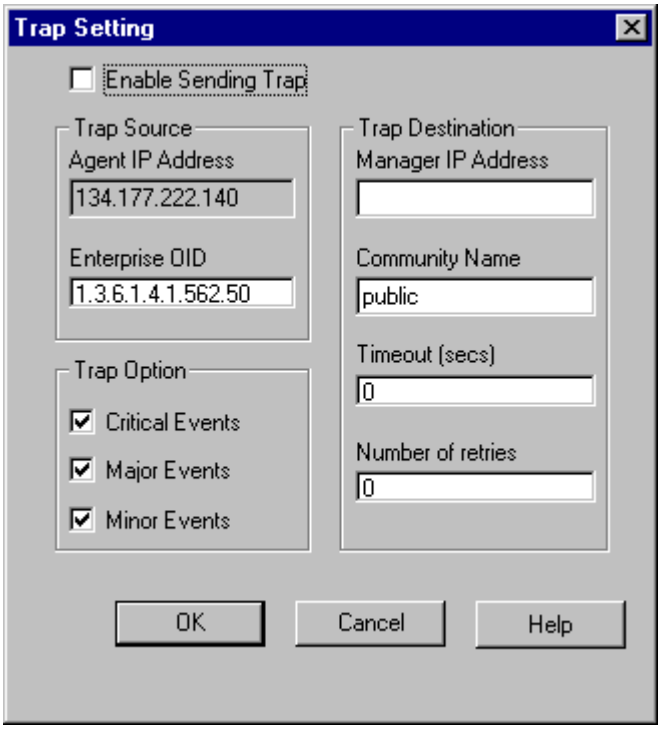
Options menu

The Options menu allows you to save the settings you entered in the File and View menus.

Tools menu

The Tools menu allows you to access the SNMP Trap Setting window (Figure 90).

Figure 90 SNMP Trap Setting window



The Trap Setting option enables SNMP Trap Setting and contains the following options:

Trap Source:

Agent IP Address: An agent is an SNMP entity located on the managed node. The Agent IP Address is the IP address of the agent entity (that is, the equipment sending the trap).

Enterprise OID: The Enterprise OID is a unique value assigned to your organization by the Internet Assigned Number Authority (IANA).

Trap Destination:

Manager IP Address: The Manager IP Address is the IP address of the PC that hosts the target SNMP Manager and receives the trap. The Manager IP address is typically the IP address of the OTM Server.

Community Name: This name identifies the community string. The default name is "Public."

Timeout: The Timeout value is a time interval in milliseconds and determines the length of time that applications wait for an SNMP agent entity to respond to a request.

Number of Retries: The number of times the system attempts to connect to the SNMP Manager.

Trap Option:

Critical Events: This error indicates that the event resulted in a loss of data or system functionality.

Major Events: This error indicates the termination of a process that can result in other processes being terminated (for example, a corrupt DLL).

Minor Events: This error indicates that the event was not necessarily significant but might point to possible future problems.

System Terminal

System Terminal helps you perform overlay-based tasks directly through the Meridian 1 TTY interface. System Terminal provides online, context-sensitive Help for overlays, prompts, and error messages. System Terminal also provides a terminal emulation capability.

In the Web environment, Terminal Client provides the same functionality as System Terminal. For information on Web Virtual System Terminal, see "OTM Web Virtual System Terminal" on page 370.

There are two versions of System Terminal to support two different connection types—Ethernet or PPP and Serial—as follows:

- Overlay Passthru is available on X11 release 22 and later systems connected to OTM using Ethernet or PPP. Overlay Passthru only supports access to the overlays.
- VT220 provides similar functions for any Meridian 1 system using serial connections, as well as terminal emulation for all application modules (such as Meridian Mail). VT220 is discussed in "VT220" on page 223.

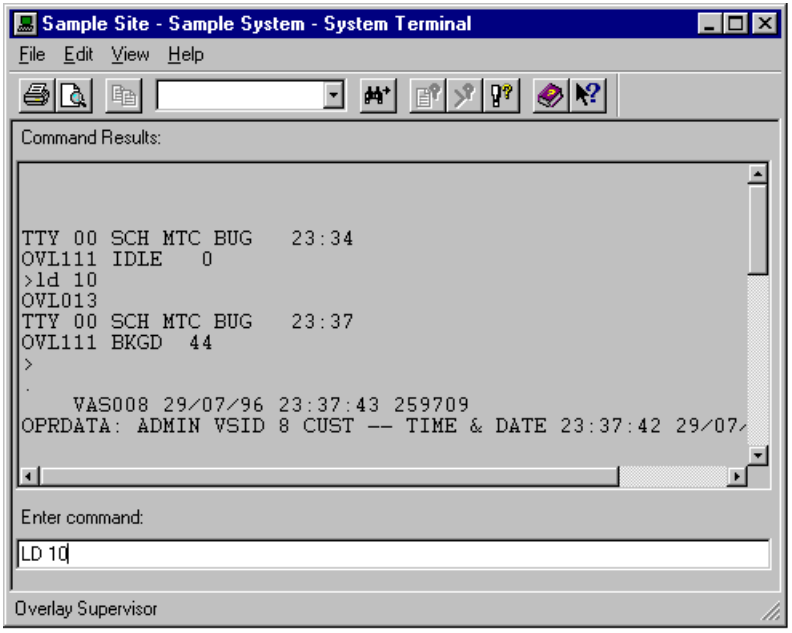
In Release 22 and later Meridian 1 systems, you access the overlays using the System Terminal (Ethernet or PPP required) and access the application modules via VT220. In pre-Release 22 Meridian 1 systems, you access both the overlays and application modules via VT220.

Launching System Terminal (Ethernet or PPP required)

Once you connect to the system of interest, to launch System Terminal:

1. Select System Terminal from the Maintenance menu or toolbar in the System window.
2. Enter your system Login Name and Password in the System Login dialog box. Figure 91 shows the System Terminal window.

Figure 91 System Terminal window



The System Terminal window displays all system events as they occur. It also gives you direct access to any overlay.

Note: For Ethernet or PPP connections, each active System Terminal connection requires a pseudo-TTY (PTY) port. PTYs are software-only I/O ports. The System Terminal and Maintenance Windows applications use these ports to access the overlays.

Note: Ethernet and PPP are available only for X11 Software Release 22 and above with packages 296 and 243 equipped.

Configuring a pseudo-TTY (PTY) port

OTM applications require that you configure a pseudo-TTY (PTY) port on the Meridian 1 or Succession CSE 1000 system for access to the overlays. TTY ports differ from PTY ports in that a TTY port has physical hardware that interfaces with an external device. A PTY port is a software emulation of a serial port connection to a device or application through an IP network.

Note: Physical TTY ports do not need to be installed to support PTY ports. There is no connection between these two types of ports. The primary requirement is that you have a device number (DNUM) available for configuring the PTY port.

To configure a PTY port in LD 17, you must have an unused device number (DNUM) available. There are 16 DNUMs available on the Meridian 1 or Succession CSE 1000 system that must be shared by all input/output devices. These device types include TTY, PRT, PTY, AML, and DCH.

Note: Option 11C and Succession CSE 1000 systems can be configured to support a maximum of four PTY ports.

To configure a PTY port with LD 17:

1. In the OTM system window, on the toolbar, click the System Terminal icon.

   The System Terminal Selection dialog box opens.

2. Click Ethernet/PPP (Overlay Passthru), and then click OK.

   The System Terminal window opens.

3. Log in with your administrator's Login Name and Password.

   You must have appropriate access privileges to use LD 17.

4. Enter:
   `ld 17`

   The system responds `REQ`.

5. Enter:
   `chg`

The system responds TYPE.

6 Enter:
cfn

The system responds ADAN.

7 Enter:
new tty <*n*>

where n is a device number between 0–15. The system responds TTY_TYPE.

8 Enter:
pty

The system responds PORT.

9 Enter:
<*n*>

where n is an available port between 0–15 for most large Meridian 1 systems. This range varies according to the system option and card/port type. For Option 11C and Succession CSE 1000 systems, this range is limited to 0–3. The system responds DES.

10 Enter:
ether

This is a suggestion. You can enter any name that you want to use to describe the port. The system responds FLOW.

11 Enter:
no

The system responds USER.

12 Enter:
mtc bug sch

The system responds TTYLOG.

Note: It does not matter which user types you enter. OTM makes any required changes when you establish a connection. For example, when the Station Administration application accesses a Meridian 1 over a PTY port, only the user type SCH is set for the PTY port.

13 Enter:
no

The system responds BANR.

14 Enter:
yes

15 Log out and close the system terminal window.

To determine how many PTY ports you need to support OTM, determine how many OTM clients need to access the Meridian 1 or Succession CSE 1000 system at the same time. In a normal environment, two or three PTY ports should be sufficient. If you have configured three PTY ports, and all three of the ports are in use, a fourth user attempting to access the system receives a message requesting that they try the connection later.

OTM has been designed to make efficient use of the available TTY ports. Most OTM applications access a system on an "as required" basis. These applications include Station Administration, CPND, ESN, Corporate Directory, Database Backup and Restore, and Traffic. The applications make an Ethernet connection to a system and set up a virtual serial connection for access to the system overlays as required.

Applications such as Alarm Banner, Event Browser, and DBA do not require a PTY port. A special interface exchanges data between the system and OTM for these applications. There are two exceptions: Overlay Passthru/Virtual Terminal and Maintenance Windows. For Overlay Passthru and Virtual Terminal, when a connection is requested, the connection is established between OTM and the PTY port on the system. This port is locked until the connection is terminated. Maintenance Windows does not require access to a PTY port when the application is launched. When you execute a maintenance overlay command, a connection is established to execute the command. Once the command has been executed, the connection is terminated.

OTM System Terminal window

The System Terminal window includes the following:

- An Enter Command edit box in which you type overlay commands
- A Command Results list box that displays your interaction with the overlays and the results

- Links to online Help are available for the following:
  - — Help on the current overlay
  - — Help on the current prompt
  - — Help on the last or selected error message
  - — One-line description of prompts in the status bar

You use overlays just as you did before a system management tool was available. The one minor difference is that you type into an edit box rather than the last line of the screen as with TTY and Terminal Emulation applications. You still use the <Enter> key to send the typed-in data (an overlay command or response to a prompt).

Using System Terminal

You can do the following from System Terminal:

- Load an overlay as you normally would on a TTY or Terminal Emulation application.
- Cut or copy system events or overlay command results to the clipboard.
- Save or capture the command results to a file.
- Get help on a Meridian 1 error message.
- Get help on an overlay.
- Get help on a prompt.
- Monitor system events.

Advantages over a TTY

You now have the following advantages over the old TTY:

- You can type in lower case and use the backspace key.
- Copy and Paste in the Enter Command box (useful for repeated commands with only a TN change).
- Scroll back in the command results.
- Copy and Print the command results.
- Capture output to a file as well as to the screen.
- Save the command results to a file.

Getting help on the current overlay

You can get more help on the currently loaded overlay using the Current Overlay command in the Help menu. The Help file is organized in a similar fashion to the Meridian 1 system's *Software Input/Output Guide* (553-3001-311 and 553-3001-511), and the Succession CSE 1000 system's *Software Input/Output Guide* (553-3023-311 and 553-3023-511).

Note: The Current Overlay button or menu item is disabled when you are not in an overlay.

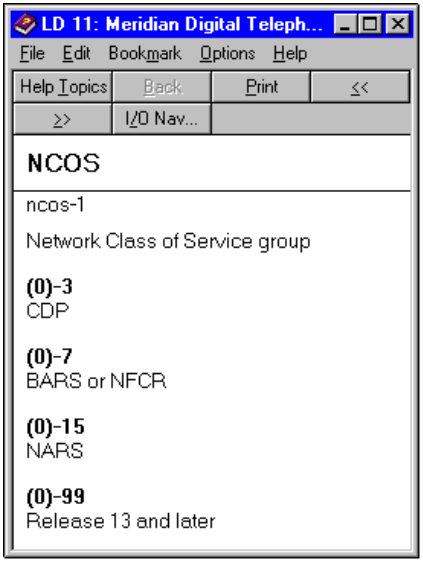
Example:

If you are in overlay 10, you can select Current Overlay from the Help menu, and then navigate within Help to the CPND prompt sequence. You can click any prompt in the sequence. This displays the Help window for that prompt—the same as Help on Current Prompt.

Getting help on the current prompt

Figure 92 shows an example of the Help you can get on an administration overlay. You load the overlay and respond to the prompts, one at a time. This Help guides you as you load the overlay and respond to the prompts.

Figure 92 Current prompt help example



If an overlay is currently loaded, the Status Bar at the bottom of the window provides a short description of the current prompt.

If the one-line description is not enough, you can read a full description of the prompt in OTM Windows Navigator Help. Choose Current Prompt from the Help menu.

Note: Help on the current prompt is disabled if you are not in an administration overlay.

To get help on any other prompt, choose I/O Navigator from the Help menu.

Getting help on an error message

System Terminal can distinguish error messages from the other text in the Command Results list box. The Error Message command in the Help menu provides the error description in OTM Windows Navigator Help.

You can get help on an error message in the following ways:

- Double-click an error message anywhere in the Command Results.

- Select the Error message command in the Help menu to get help on the last error message (even if it is scrolled off the screen).
- Select an error message anywhere in the Command Results, and then select the Error message command in the Help menu.
- Select the I/O Navigator from the Help menu.

The error message Help window appears when you select the Error message command in the Help menu.

Note: You can also get Help on Meridian Mail System Error and Event Reporting (SEER) messages using the I/O Navigator.

System Terminal menus

Detailed descriptions about the functions of each command in the System Terminal menus are available by clicking Context-sensitive Help in the toolbar. System Terminal menus consist of:

- File
- Edit
- View
- Help

Toolbar

The System Terminal toolbar offers several useful shortcuts to the menu commands (Figure 93).

Figure 93 System Terminal toolbar

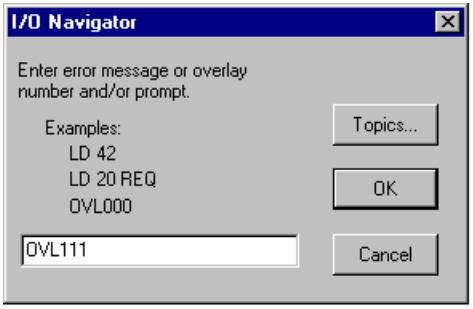
Note: The Find and Find Next icons in the toolbar allow you to search the Command Results for the text string that you enter in the Find box. Find is case sensitive. The search begins at the current location.

Using the I/O Navigator

The I/O Navigator displays a dialog box that allows you to quickly jump to help on any overlay, prompt, command, or error message. Select I/O Navigator from the overlay's Help menu or from the I/O Navigator buttons in the appropriate Help files.

The I/O Navigator allows you to navigate through I/O reference Help independent of your current context within the overlays. For example, you do not need to be logged into a system to look up an error message using the I/O Navigator (Figure 94).

Figure 94 I/O Navigator dialog box



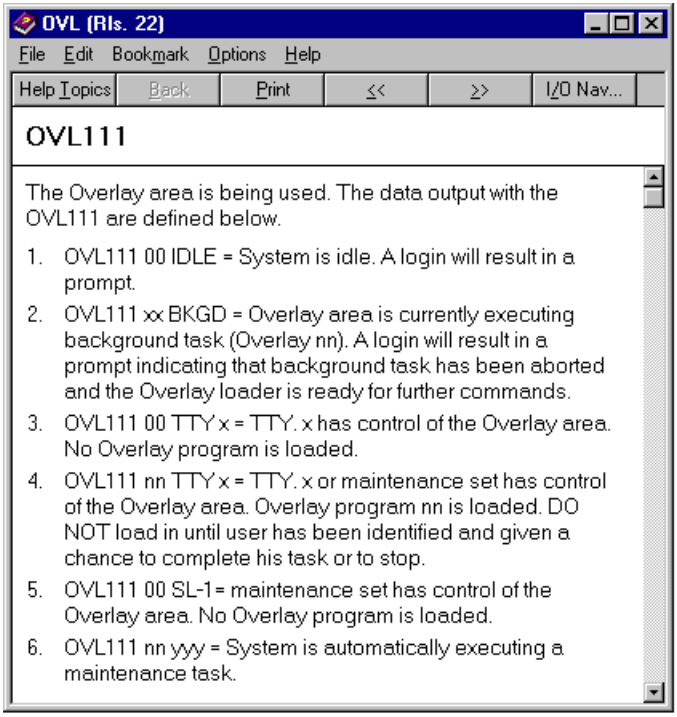
1 Type the overlay number, error message number, or prompt in the text entry field

2 Click OK.

Help information for the specified overlay, prompt, or error message appears.

The Topics button displays the general reference Help index (Figure 95).

Figure 95 Example Help Index for an error message



The Cancel button cancels a search.

Enter an overlay (LD XX) or error code mnemonic (ERR, BUG) to go to the contents page of the appropriate Help file. Enter the error code (BUG3001) or an LD number, and a prompt takes you to the Help topic page.

- If the prompt or error message you specify does not exist, the Help search dialog box appears with the nearest match selected.
- If the overlay number or error message type do not exist, a “Help file not found” information dialog box appears.
- The I/O Navigator command can be used from within Help. You do not need to be connected to a switch.
- There are some combination overlays (for example, one Help file describes two overlays). You can enter either of the overlay numbers. These cases are:
  - — LD 36 and LD 41
  - — LD 40 and LD 42

  - — LD 20, LD 21, and LD 22
  - — LD 84 and LD 85
- Leading zeros are not required in error messages. For example, entering SCH22 or SCH022 finds the description for SCH0022.
- To look up Meridian Mail System Error and Event Reporting (SEER) messages, enter XXXYY (where XXX is the message class, and YY is the message number—no mnemonic is required). For example, enter 11102.

VT220

The VT220 application models the VT100/220/320 series of terminals to set up communications between your PC and the Meridian 1 system. With VT220, you can connect to the Meridian 1 system using a serial, PPP (point to point protocol), or Ethernet connection. It supports the transfer of ASCII data during a communications session and provides normal TTY and VT220 access to overlays that are not supported by the OTM applications.

Features

VT220 supports the following features:

- Double-height, double-width, blinking, bold and underlined characters
- Complete graphic character set, including a special font for representing control characters
- Scrolling regions
- 80 and 132 column modes
- Echo, no echo, local mode, and autowrap on/off
- Reverse video characters and reverse video screen
- Cursor types—block, underline, vertical line, or none
- Selectable cursor blink rate
- User-definable Tab stops
- Programmable function keys
- Display control mode
- National character sets

Accessing VT220

Before accessing VT220, you must first select the type of terminal emulation session you require. To do so, perform the following steps:

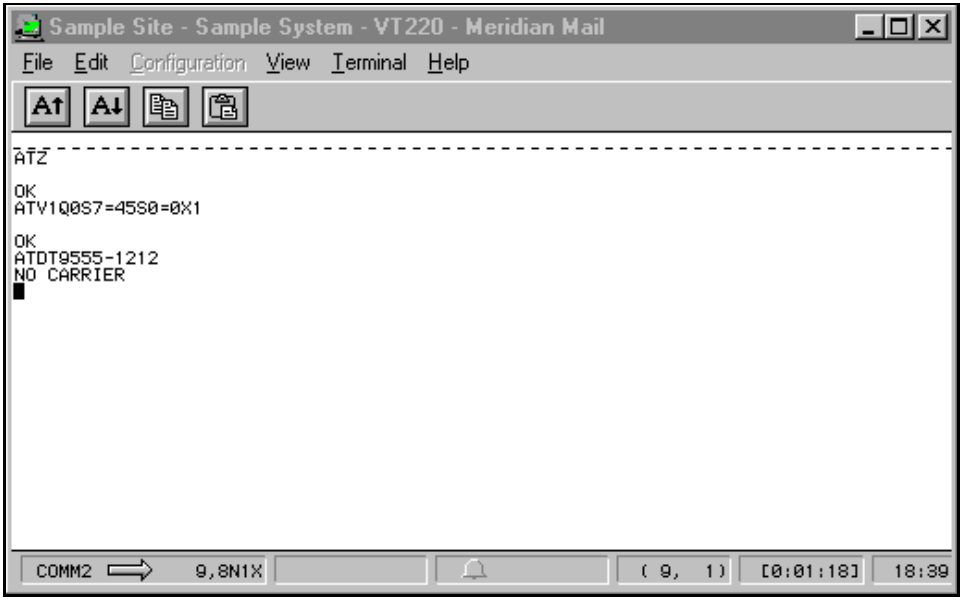
1. Click once on the system name in the OTM Navigator to highlight it, and click Properties from the File drop-down menu (or simply right-click on the system name and click Properties).
2. From the System Properties window, click the Communications tab and select the desired settings file from the Terminal Emulation VT220 Settings drop-down list box (e.g., MMAIL.INI).
3. Click the Applications tab and click once on System Terminal (VT220) in the Applications list box to highlight it.
4. Select a communications profile for System Terminal (VT220) by clicking on the desired profile name in the Communications Profile drop-down list box.
5. Click OK to select these settings and return to the OTM Navigator.

To access VT220, perform the following steps:

1. From the OTM Navigator, select the desired site and system and click System Terminal from the Maintenance drop-down menu.
2. From the System Terminal Selection dialog box that appears, click Serial (VT220), and then click OK.

   VT220 attempts to connect to the terminal based on the communications criteria entered in the System Properties Serial Communications Profile for this system. Once it establishes this connection, the VT220 main window appears listing the commands and graphical tools required for the emulation session (Figure 96).

Figure 96 VT220 window



The following sections briefly list the main functions of VT220:

File menu

The File menu contains functions used to save the VT220 configuration, print the contents of the terminal window, record and replay VT220 terminal emulation sessions, and close the system.

The following is a summary of these functions:

- Save Configuration
- Save Configuration As
- Print
- Print Setup
- Printer Fonts
- Capture
- Playback
- Close

The Save Configuration and Save Configuration As menu items are only available if you have selected a user-defined terminal type (as defined as the Other VT220 type from the OTM System Properties Communications tab). Otherwise, they appear grayed.

Edit menu

The Edit menu contains editing commands used to manipulate the text appearing in the main window.

The following is a summary of these functions:

- Copy
- Paste
- Select All

Configuration menu

Once you start VT220 from the system window of the OTM Navigator with a user defined type of terminal (as defined as the Other VT220 type from the OTM System Properties Communications tab), then you can use the Configuration functions to customize the VT220 settings to suit your needs. The purpose of having the Other type is to allow you to create multiple types of settings based on generic settings.

If you do not select Other or a user-defined type, then you do not require these functions to run VT220. The Configuration command, therefore, appears grayed.

Before you can customize the VT220 settings, you must first select the custom VT220 settings file OTHER.INI using the Communications tab from the OTM Navigator System Properties application. Refer to "Accessing VT220" on page 224 for more details on selecting this option. This file appears in the VT220 settings drop-down list box. When you launch VT220 from this customizable terminal, you can then use the commands which appear in the Configuration drop-down menu to change the settings for VT220.

Once you have edited the VT220 settings using these functions, you must then save the customized configuration file using the Save Configuration As command. Use this command to enter the name of this configuration file for use in later sessions.

VT220 includes a number of setting files that are predefined, depending on the system to which you are connected. For example, M1.INI is a predefined setting file used for a VT220 terminal emulation session with the Meridian 1 system, and MMAIL.INI is a predefined setting file for Meridian Mail. These setting files provide the required VT220 settings and cannot be edited.

The following is a summary of the Configuration functions:

- Terminal Setup
- National Replacement Character Set
- Map Keyboard
- Program Keys
- Tab Setup
- Options
- Status Bar

View menu

The View menu contains toggles to adjust the display of the VT220 window, as well as hide and display the Tool Bar, Status Bar, and Keys Window.

The following is a summary of these toggles:

- Terminal
- Hide/Show Tool Bar
- Hide/Show Status Bar
- Hide/Show Keys Window

Terminal menu

The Terminal menu contains commands used to connect and disconnect VT220 for a temporary communications setup. The Connect and Disconnect commands start and stop the terminal emulation. The Temporary Communication Setup function temporarily creates a terminal emulation session based on customizable connection criteria. This setup is only temporary for the current session. When you access VT220 again, it uses the criteria defined for this system in the OTM System Configuration function.

The following is a summary of these commands:

- Connect
- Disconnect
- Temporary Communication Setup

Help menu

In addition to the standard online help features for VT220, this Help menu contains topics that provide help with the Overlay Enhancer and I/O error messages.

The following is a summary of these Help items:

- Help Topics
- Current Overlay
- Current Prompt
- Error Message
- I/O Navigator
- About VT220

The Help Topics menu item displays the Help topics for VT220 only if you select a user-defined terminal type (as defined as the Other VT220 type from the OTM system Properties Communications tab). Otherwise, it displays the Help topics for the Meridian 1 system.

The Current Overlay, Current Prompt, and Error Message menu items are only enabled if you are running a VT220 terminal emulation for the M1.INI terminal type, and the system is in overlay mode.

The I/O Navigator Help function allows you to obtain information on specific error messages.

The Overlay Enhancer is an online context-sensitive Help function, which allows you to obtain quick and direct access to overlay information while in an active terminal session with the Meridian 1 system.

The following Overlay Enhancer Help commands appear in the Help drop-down menu:

- Current Overlay
- Current Prompt
- Error Message

The Current Overlay and Current Prompt commands are only available if an overlay program is loaded and the terminal session is of type Meridian 1, PPP, or Ethernet. Otherwise, they are disabled and appear grayed. The Error Message command is available if the terminal session is of type Meridian 1, PPP, or Ethernet. Otherwise, it is disabled and appears grayed.

Note: Selection of an error message in the VT220 window is not sufficient to access the Overlay Enhancer help. Unlike the Overlay Passthru application, which displays online Help when you double-click the error message, the VT220 Help requires that you first click to select the error message, and then select Error Message in the Help drop-down menu. This then displays Help for the selected error message.

Keyboard mappings

VT220 uses standard keyboard mappings, which when incorporated into a terminal session, match the appropriate VT keys and actions. These default mappings, as shown in the following tables, allow you to run a terminal emulation session using the appropriate keys on a standard 101- or 102-key keyboard.

For example, if you are using VT220 to run Meridian Mail, the Meridian Mail softkeys (which appear at the bottom of the menus and screens) correspond to the appropriate function keys on your keyboard. The Meridian Mail softkeys correspond to the function keys F6 through F10 on a standard 101- or 102-key keyboard. Therefore, in a Meridian Mail session, you press F6 to select Softkey 1, F7 to select Softkey 2, and so on. For more information on the Meridian Mail softkeys, refer to the *Meridian Mail System Administration Guide.*

Table 17 through Table 19 list the keyboard mappings for VT220 on standard 101- and 102-key keyboards.

Table 17 Keyboard mappings - VT key

VT key	PC key
PF1	Num Lock
PF2	Numpad Slash
PF3	Numpad Star
PF4	Numpad Minus
Find	Insert
Insert	Home
Select	Delete
Up Arrow	Up Arrow
Down Arrow	Down Arrow
Left Arrow	Left Arrow
Right Arrow	Right Arrow
F6	F6
F7	F7
F8	F8
F9	F9
F10	F10
F11	F11
F12	F12
F13	Sys Rq
F14	Scroll Lock
Help	F2
Do	F3
F17	Ctrl-F7
F18	Ctrl-F8
F19	Ctrl-F9
F20	Ctrl-F10

Table 18 Keyboard mappings - VT action

VT Key	PC Key
Remove	Page Up
Next Screen	Page Down
Prev Screen	End
Hold Screen	F1
Compose	Unmapped
Delete	Backspace
Keypad Command	Numpad Plus
Keypad Enter	Numpad Enter
Break	F5
Long Break	Shift-F5
Control Break	Ctrl-F5
Print Screen	Unmapped
Keypad 0	Numpad 0
Keypad 1	Numpad 1
Keypad 2	Numpad 2
Keypad 3	Numpad 3
Keypad 4	Numpad 4
Keypad 5	Numpad 5
Keypad 6	Numpad 6
Keypad 7	Numpad 7
Keypad 8	Numpad 8
Keypad 9	Numpad 9
Keypad Minus	Ctrl-Numpad Minus
Keypad Period	Numpad Del

Table 19 Keyboard mappings - VT action scroll

VT key	PC key
Scroll Left	Ctrl-Left Arrow
Scroll Right	Ctrl-Right Arrow

Table 19 Keyboard mappings - VT action scroll (continued)

VT key	PC key
Scroll Up	Ctrl-Up Arrow
Scroll Down	Ctrl-Down Arrow

System Monitor

The OTM System Monitor is a Microsoft Windows executable program that runs in the background on the OTM Server. System Monitor displays the PC's resources (such as memory and CPU usage), and issues alarms when system resources are low. The System Monitor utility allows you to do the following:

- Turn a system alarm on or off and define the conditions (where, when, and what type of alarm) for sending alarm messages.
- Enable the System Monitor to automatically start when Navigator starts.
- View the virtual, physical, and total memory available.
- View the total CPU usage information.
- View the processes now running on the system.
- View the applications now running on the system.
- View the performance of the NT server.
- Ping another machine to test network connections.

Access System Monitor

Access the OTM System Monitor with the Microsoft Windows Run command. The path depends on your installation. However, you can locate the System Monitor executable, *SystemMonitor.exe*, in the Nortel\Common Services\Program Files folder.

Double-click the System Monitor executable file. The System Monitor icon appears on the Windows task bar, and the System Monitor starts (the window is minimized on your screen). From this window, you can perform all of the System Monitor functions.

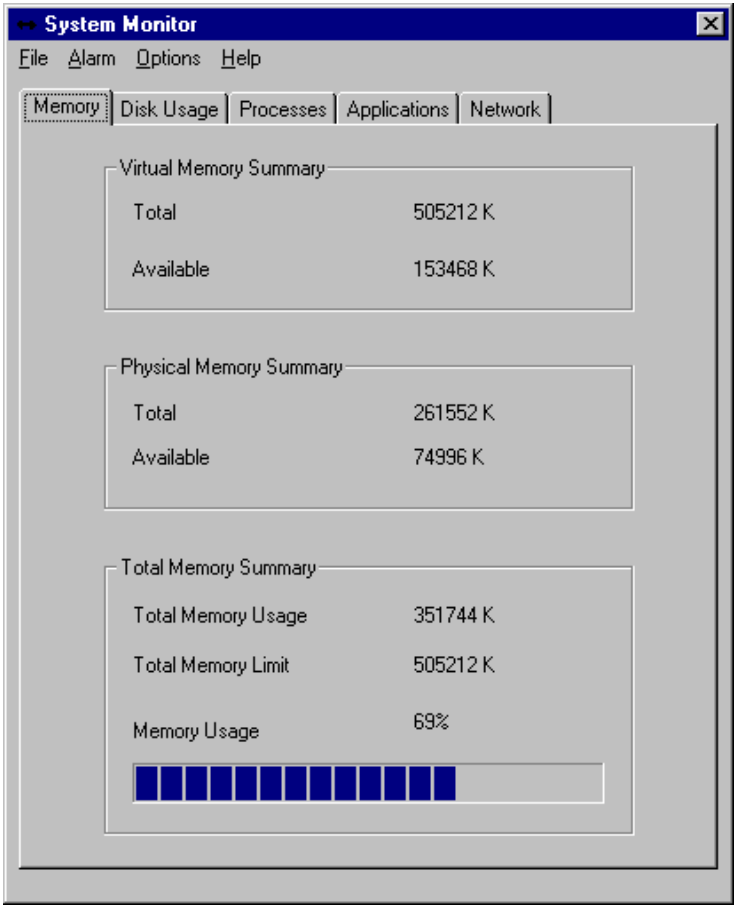
To enable or disable the System Monitor, from the Options menu in the System Monitor window, select Options.

View the virtual, physical, and total memory available

To view memory information, select the Memory tab on the System Monitor window.

The tab displays the amount of virtual and physical memory available, the total memory limit, and the total memory now in use. The progress bar at the bottom of the tab graphically displays the Memory Usage percentage.

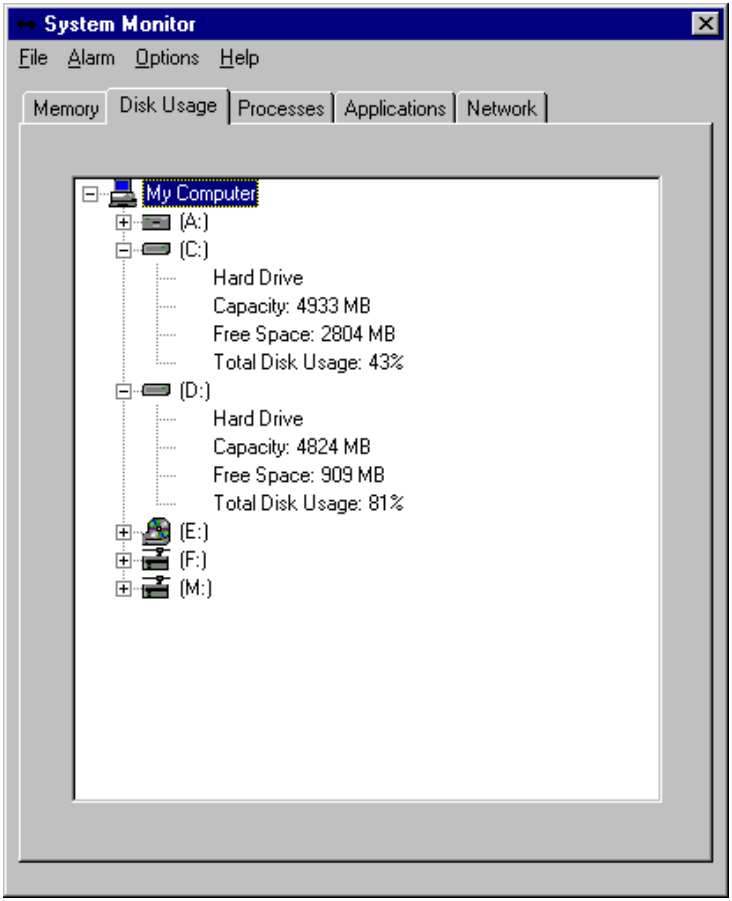
Figure 97 System Monitor window—Memory tab



View Disk Usage information

To view usage information for the disk, select the Disk Usage tab on the System Monitor window (Figure 98).

Figure 98 System Monitor window—Disk Usage tab



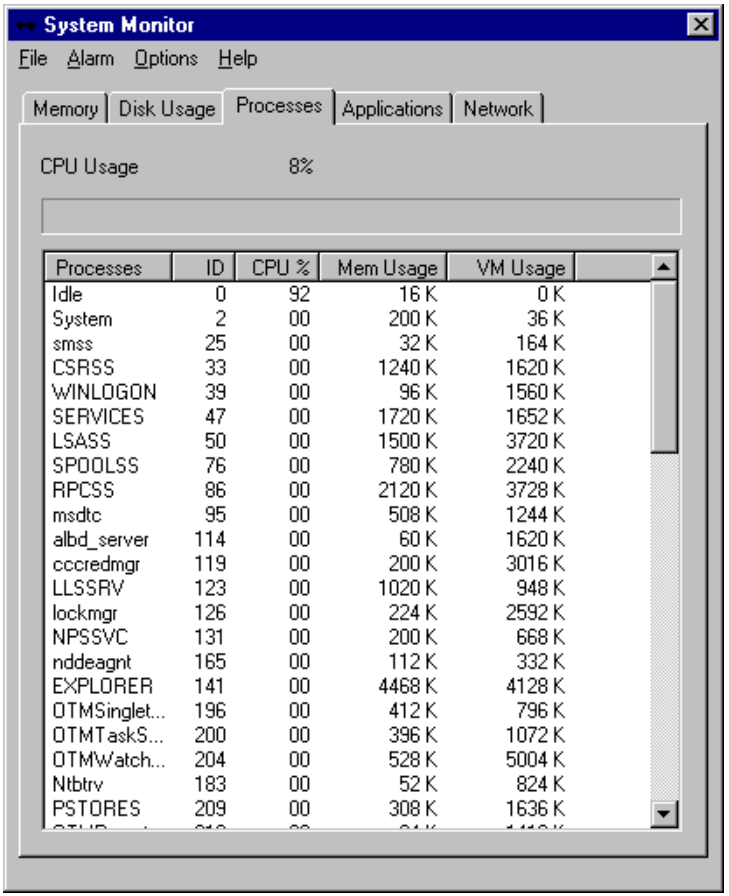
View CPU information

To view usage information for the CPU, select the Processes tab on the System Monitor window.

The tab displays five columns of information for each process that is running (Figure 99). The CPU usage appears graphically at the top of the tab. The tab displays the following information:

- **Processes:** The name of the process
- **ID:** The process ID
- **CPU%:** The percentage of the CPU used for the process
- **MEM USAGE:** The amount of memory used for the process
- **VM SIZE:** The amount of virtual memory used for the process

Figure 99 System Monitor window—Processes tab

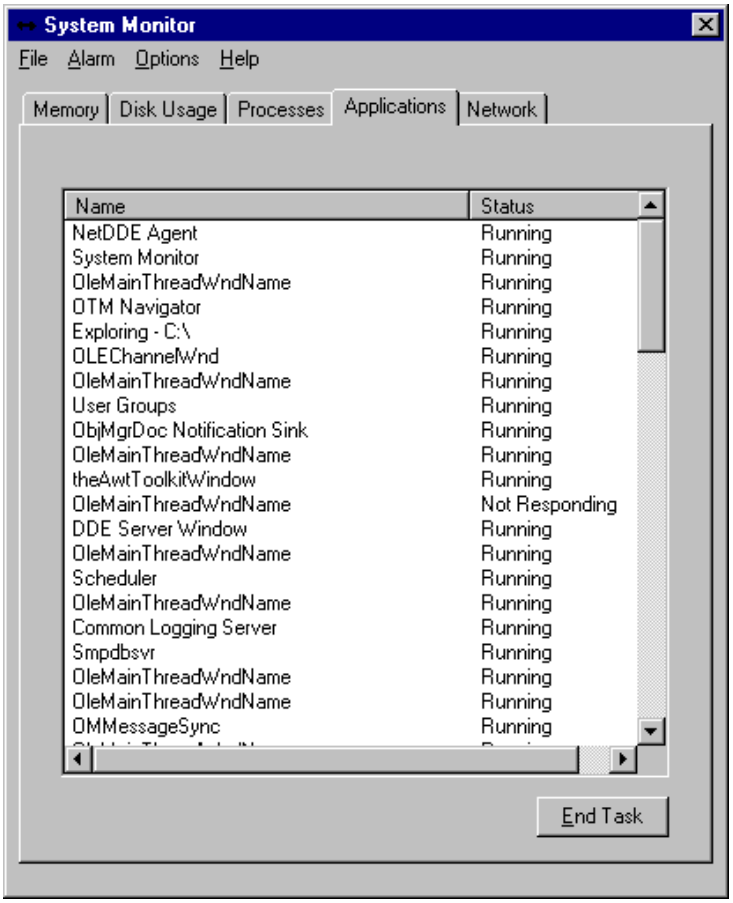


View and disable applications running on the system

To view and disable applications running on the system, select the Applications tab on the System Monitor window (Figure 100).

To stop an application from running, select the application, and then click End Task.

Figure 100 System Monitor window—Applications tab



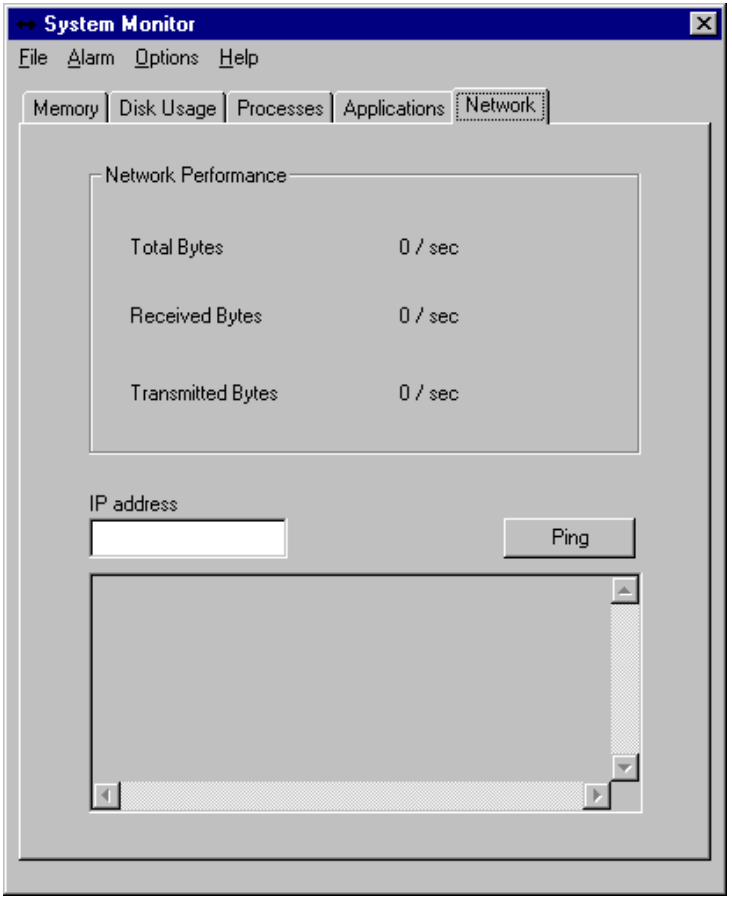
View the performance of the server

To view the server performance, select the Network tab on the System Monitor window. The tab displays the number of bytes received and sent per second by the server (Figure 101).

To view the performance of other equipment:

1. Select the Network tab on the System Monitor window.
2. Enter the IP address of the equipment you want to view.
3. Click Ping. The performance for the equipment appears.

Figure 101 System Monitor window—Network tab



Set up alarms

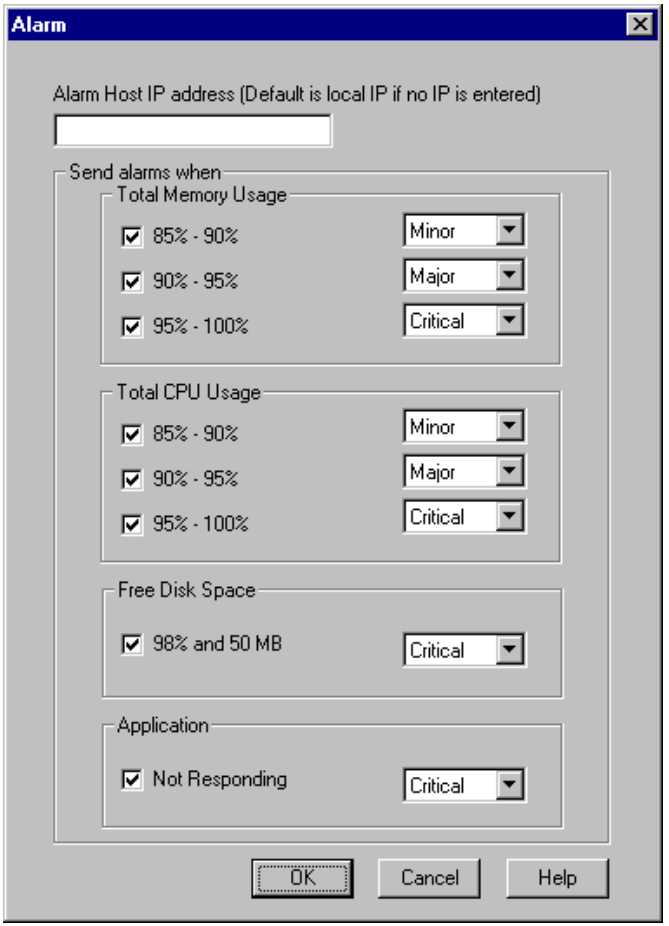
You can set up where to send alarm messages when system resources are low, and set the conditions for sending alarm messages.

To configure alarms:

➔ Select Configure... from the Alarm menu in the System Monitor window.

The Alarm window opens (Figure 102).

Figure 102 Alarm window



Data Buffering and Access

The OTM Data Buffering and Access (DBA) application provides a Windows interface to start a live data buffering session and define the session properties for collecting data from a Meridian 1 or Succession CSE 1000 system. A network or PPP connection allows collection of CDR and Traffic data. A serial connection allows collection of ASCII data only.

With a PPP or network connection, you can perform the following tasks:

- Schedule a single or routine backup of your Meridian 1 or Succession CSE 1000 system's database files.
- Schedule the retrieval of buffered CDR and Traffic data from a Meridian 1 or Succession CSE 1000 system.
- View collected CDR and Traffic data.
- Back up and restore a Meridian 1 or Succession CSE 1000 system's database to and from a remote device for database recovery.

If you lose a connection or have connection problems during a live data session, the Meridian 1 and Succession CSE 1000 systems save the CDR and Traffic data. You can retrieve the data when the connection is restored.

With a serial connection, you can perform the following tasks:

- Set up the actions and rules for generating alarms.

Note: A serial connection does not support the DBA Backup and Restore functions.

- View collected serial data.

If you lose a connection or have connection problems during a live serial data session, data is lost.

Use the DBA application to schedule the following tasks:

- Archive CDR and Traffic from the Meridian 1 or Succession CSE 1000 system.

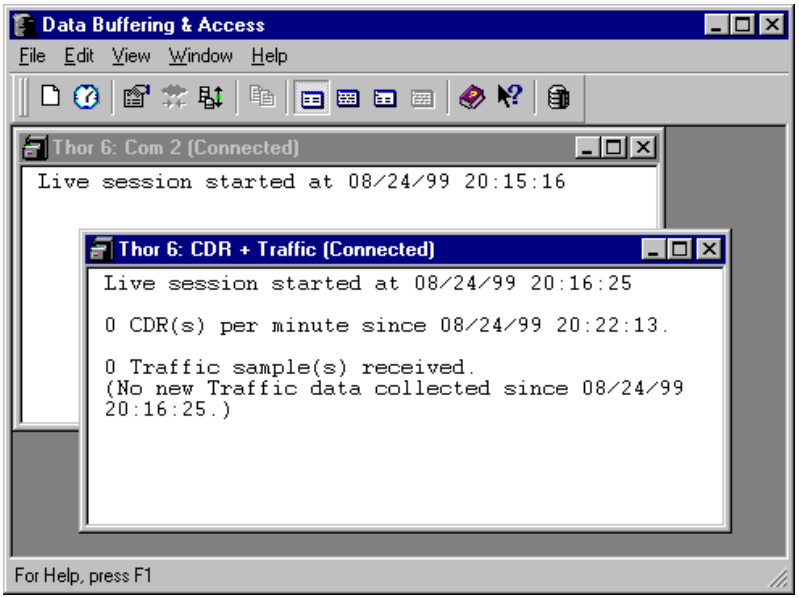
- Perform Meridian 1 or Succession CSE 1000 Database Disaster Recovery (backup only).

Access DBA

To access DBA, from the Utilities menu in the OTM Navigator window, select Data Buffering and Access.

The DBA main window appears (Figure 103).

Figure 103 DBA main window



DBA menus

Descriptions of each command in the DBA menus are available online. Use the Help command to get detailed descriptions of the commands.

DBA Toolbar

The DBA Toolbar provides easy access to many of the menu commands.

Right-click the mouse in the session window to view the pop-up menu containing a subset of the menu items.

Start a new live data session

To collect live data, you must start and configure a live data session (an active connection to a Meridian 1 or Succession CSE 1000 system). The DBA application runs continuously during the session, providing access for session configuration and a window for monitoring session information. Special operations, such as Meridian 1 or Succession CSE 1000 database backup, can be run immediately or scheduled to run within a session.

Note: To maintain a live data session, you must keep the DBA main window open continuously. To minimize screen congestion, hide the DBA main window to remove it from the Windows Desktop. See “Hide and restore the DBA main window” on page 263.

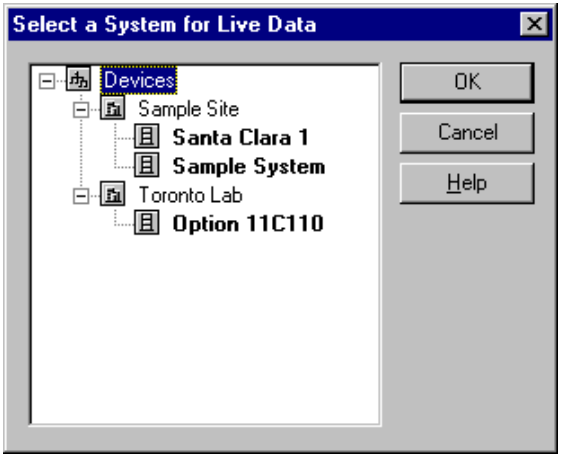
For Option 11C systems with survivable expansion cabinets and Succession CSE 1000 systems with survivable media gateways, it is possible to have live data delivered to DBA from the main cabinet or call server. When the systems are operating in normal mode, there is no call processing taking place on the expansion cabinets or the media gateways; therefore, no CDR data is sent from the expansion cabinets or media gateways.

To start a new live data session:

1 Select New Session from the File menu in the DBA main window.

The Select a System for Live Data dialog box opens (Figure 104).

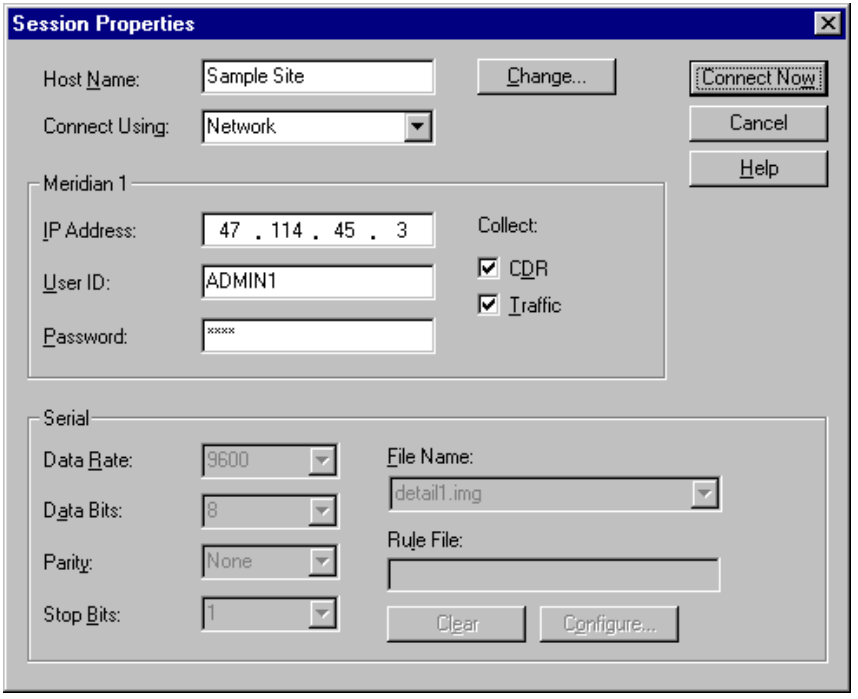
Figure 104 Select a System for Live Data dialog box



2 Select the Meridian 1 or Succession CSE 1000 system for the session from the tree and click OK, or double-click the selected system.

The Session Properties dialog box opens (Figure 105).

Figure 105 Session Properties dialog box



Define session properties for a network connection

Session properties for a network connection are defined as follows:

1 (Required) The name of the selected Meridian 1 or Succession CSE 1000 system appears in the Host Name box.

Note: To change your system selection, click Change to return to the Select a System for Live Data dialog box.

2 (Required) Select network connection in the Connect Using box.

3 (Required) The IP address for the selected Meridian 1 or Succession CSE 1000 system appears in the IP Address box.

4 (Optional) Enter your Meridian 1 or Succession CSE 1000 login name in the Login Name box.

5 (Required) Enter your Meridian 1 or Succession CSE 1000 login password in the Password box.

6 The Host Name, IP Address, Login Name, and Password data exist for the selected Meridian 1 or Succession CSE 1000 system in OTM Navigator. The DBA application automatically fills these fields with values from the OTM database. Any changes made in this dialog box are temporary and lost when the session window closes.

7 Check the Collect boxes to select the types of data (CDR or Traffic, or both) that DBA will buffer.

8 Select Connect Now to connect to the selected Meridian 1 or Succession CSE 1000 system and begin a live data session.

If you do not buffer all available data types, a dialog box appears asking you to confirm your selection.

A new window opens within your DBA main window. The host name of the connected Meridian 1 or Succession CSE 1000 system appears on the title bar. DBA uses this session window to provide information about the live data session. (See “View session data” on page 258.)

Leave the session window open to maintain the live data session. If you close the window, the live session terminates. If the session terminates, the Meridian 1 or Succession CSE 1000 system begins sending buffered data to one of the following devices, depending on the session parameters you set when establishing the connection:

- Hard drive (not recommended for Option 11C and Succession CSE 1000 systems)

Note: Nortel Networks recommends using a live connection, rather than using a hard drive, to collect data from large Meridian 1 systems.

- PCMCIA card (Option 11C, and Succession CSE 1000 systems)

Define session properties for a serial connection

Session properties for a serial connection are defined as follows:

1 (Required) The name of the selected Meridian 1 or Succession CSE 1000 system appears in the **Host Name** box.

Note: To change your system selection, click Change to return to the Select a System for Live Data dialog box.

2 (Required) Select serial port connection in the Connect Using box.

Note: If you select a serial connection, use the Rules Manager window to define the actions taken when a specific data pattern appears in the data stream. See "Configure actions and rules" on page 245.

3 Select the data rate for the connection in the Data Rate box.

4 Select the data bit setting for the connection in the Data Bits box.

5 Select the parity setting for the connection in the Parity box.

6 Select the stop bits for the connection in the Stop Bits box.

7 Enter the name of the file to store data collected from the serial port in the File Name box. The file exists under the selected site and system. Enter a new file name or select one of the following files from the drop down list.

- *detail1.img* - File used for CDR data
- *traffic.dmp* - File used for Traffic data

8 Rule File is a read-only field containing the name of the rules file for this DBA session. Edit the field with the Clear and Configure buttons.

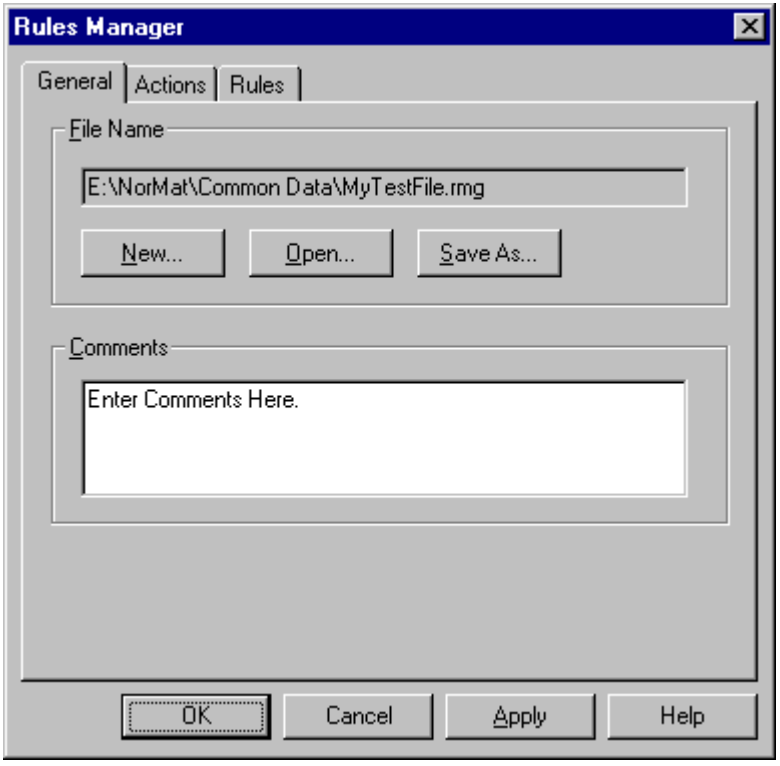
- Clear - Removes the file name from the Rule File field.
- Configure - Opens the Rules Manager window shown in Figure 106. You can create a new rules file or open and edit an existing rules file. If you create a new rules file, you must define the actions taken when a specific data pattern appears in the data stream. See "Configure actions and rules' next.

Configure actions and rules

Actions and rules are configured for serial connections. The Rules Manager window allows you to:

- Define the file you want to save or load into the Rules Manager
- Configure new actions or update or delete existing actions
- Configure new rules or update or delete rules, and set the order for applying rules

Figure 106 Rules Manager—General tab



Define the Rules Configurations file

Use The General tab to select the rules configuration file you want to save and load into the Rules Manager (Figure 106).

1 The **File Name** box is a read-only field displaying the path and file name of the current rules configuration file. To use a different rules configuration file, click one of the following buttons:

- **New** - Resets the Rules Manager dialog box to blank. If changes have been made to the current configuration, you are prompted to save the changes.
- **Open** - Opens the standard file dialog box, which allows you to select a rules configuration file. If you change the current configuration, you are prompted to save the changes.

- **Save As** - Opens the standard file dialog box allowing you to save an existing rules configurations file under another file name. Enter the new name and click Save. The Rules Manager window appears with the name of the file in the File Name box.

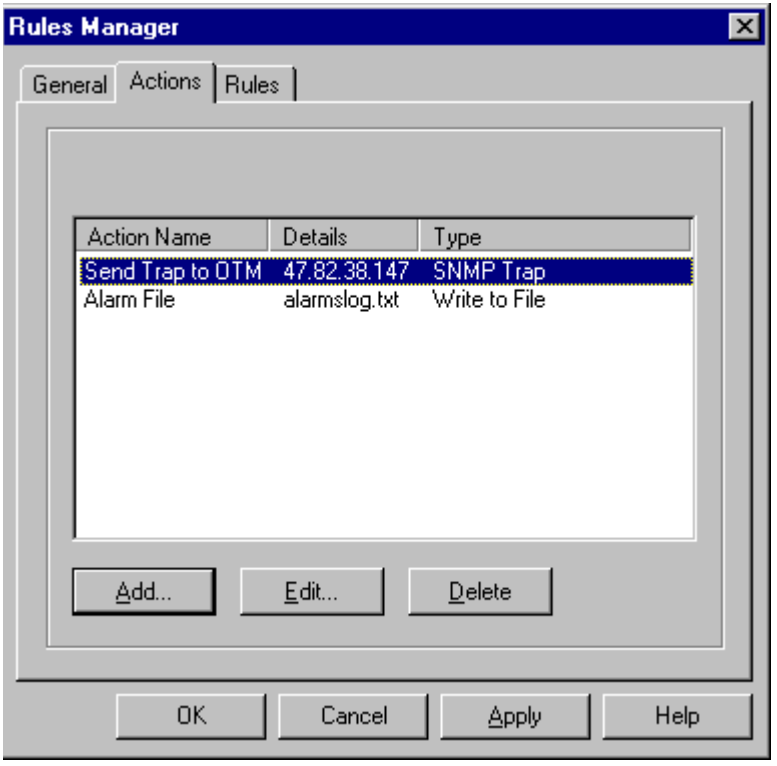
2 After you define the configurations file, use one of the following buttons:

- **OK** - Saves the rules configuration file and closes the Rules Manager window.
- **Cancel** - Discards any changes to the rules configuration file and closes the Rules Manager window.
- **Apply** - Saves the rules configuration file. The file remains open in the Rules Manager window, allowing you to make changes to the file.
- **Help** - Displays online Help.

Configured Actions

Use the Actions tab to define new actions or update or delete existing actions (Figure 107).

Figure 107 Rules Manager dialog box—Actions tab



1 Select an action from the displayed list and click one of the following buttons:

- **Add** - Opens the New Action dialog box shown in Figure 108. See "Define a New Action" on page 249.
- **Edit** - Opens the dialog box to edit configurations for the selected action.
- **Delete** - Select the action, and then click Delete to delete the action.

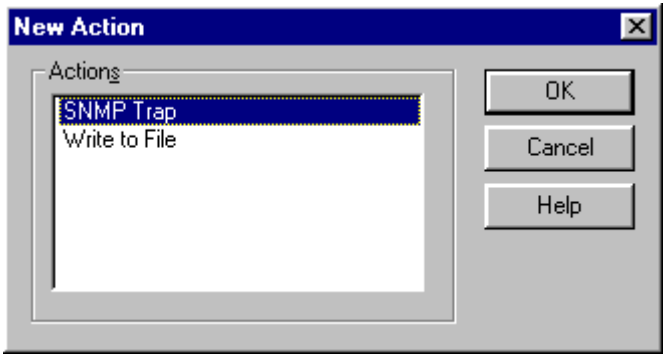
2 After you define the actions, use one of the following buttons:

- **OK** - Saves the actions in the configuration file and closes the Rules Manager window.
- **Cancel** - Discards any changes to the actions and closes the Rules Manager window.
- **Apply** - Saves the actions in the configuration file. The file remains open in the Rules Manager window, allowing you to make changes to the file.

Define a New Action

The New Action dialog box (Figure 108) provides a list of configurations you can apply to the selected action. You can configure the SNMP trap and Write to File actions. Based on the configuration you select, another dialog box, such as SNMP Trap, displays for you to define the configuration for the action.

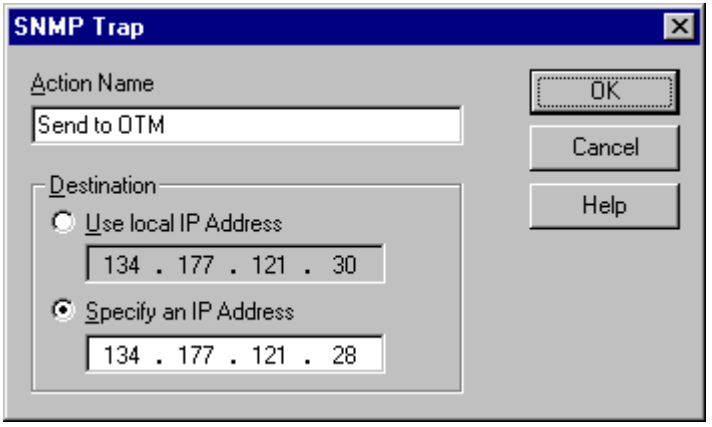
Figure 108 New Action dialog box



SNMP Trap dialog box

The SNMP Trap dialog box (Figure 109) defines the destination for the SNMP Trap action. Select the radio button for the destination of the trap. The valid selections are a local IP address or a user-defined address. The destination address must be running an application capable of taking the SNMP trap sent from DBA. When you select a local IP address (the default), it sends all traps to the same system running DBA and the Trap Server.

Figure 109 SNMP Trap dialog box

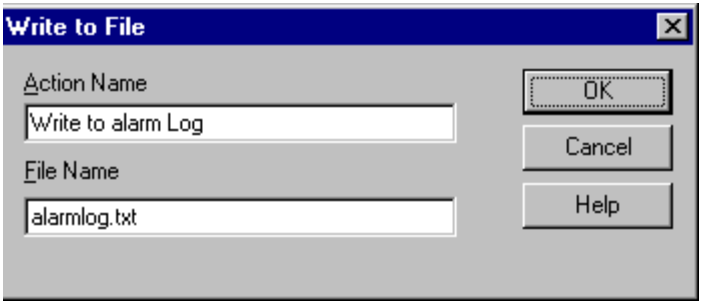


The local IP address does not exist in the Rules Manager configurations file. You can change the local IP address without resetting the value in the defined action in the configuration file.

Write to File dialog box

The Write to File dialog box (Figure 110) allows you to define the destination for a Write to File action. Enter a name for the action and the name of the file for storing the action. The file is in the OTM Common Data Directory in the system level folder. Since the file exists in the common data directory, multiple sessions defined for different sites and systems can use the same Rules Manager file. You can copy the file to another OTM system.

Figure 110 Write to File dialog box

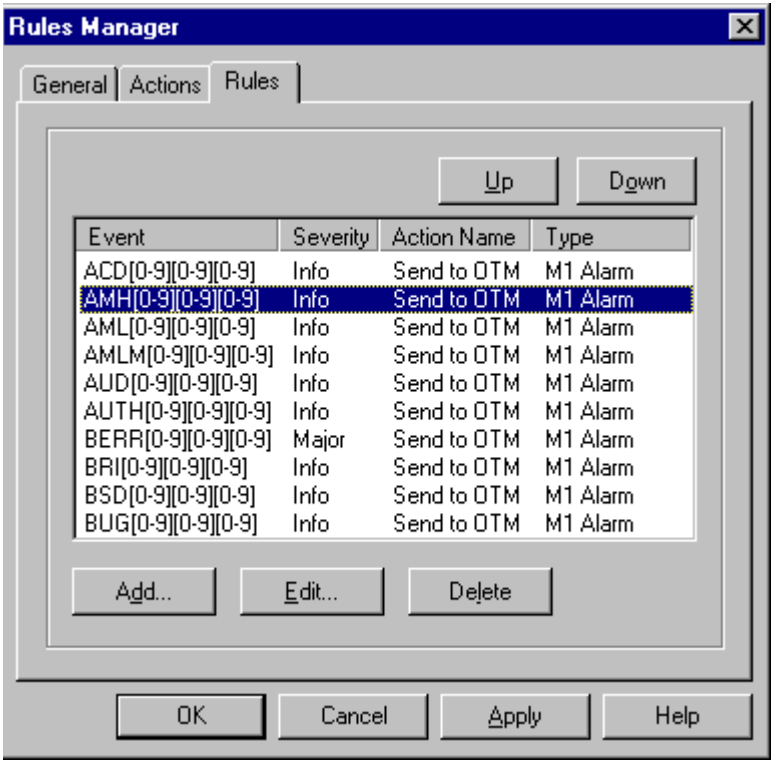


Configure Rules

Use the Rules tab to define new rules, update or delete rules, and set the order for applying rules to the data stream (Figure 111).

Note: The order in which the rules appear is important. You should order the rules so that the more specific pattern matches occur before the more generic ones. If a generic pattern rule is matched before a more specific pattern rule is tested, the action associated with the generic rule is executed and no additional rule matches are done.

Figure 111 Rules Manager dialog box—Rules tab



1 Select an event from the displayed list, and then click one of the following buttons.

- Up or Down - Moves the selected event up or down one position in the list.

- **Add** - Opens the New Rule dialog box (Figure 112). See "Define a New Rule" next.
- **Edit** - Opens the dialog box to change the selected rule.
- **Delete** - Select the event, and then click Delete to delete the rule.

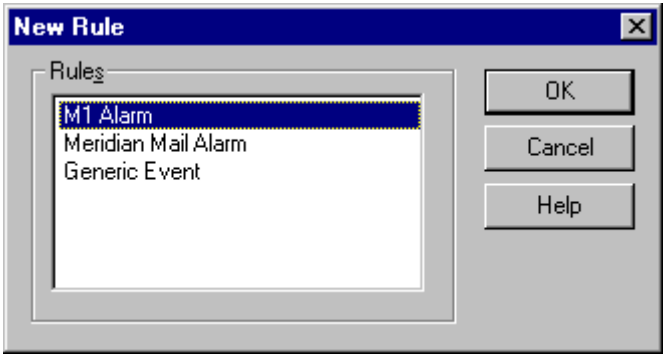
After you define the rules, use one of the following buttons:

- **OK** - Saves the rules in the configuration file and closes the Rules Manager window.
- **Cancel** - Discards any changes to the rules and closes the Rules Manager window.
- **Apply** - Saves the rules in the configuration file. The file remains open in the Rules Manager window, allowing you to make changes to the file.

Define a New Rule

The New Rule dialog box (Figure 112) provides a list of the types of rules you can define. You can configure the rules for an M1 Alarm, Meridian Mail Alarm, or a generic event. For example, an M1 Alarm rule can match a Meridian 1 or Succession CSE 1000 system alarm code. A match records the data provided with the alarm. A rule for a generic event is for a system other than those listed.

Figure 112 New Rule dialog box



M1 Alarm dialog box

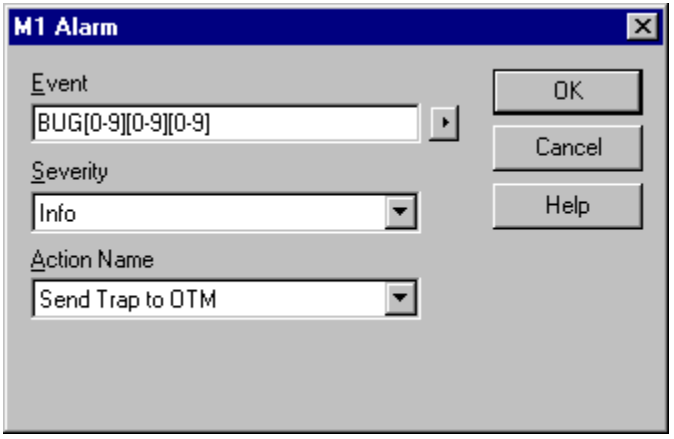
The M1 Alarm dialog box (Figure 113) defines the values for an M1 Alarm rule.

The Event edit box defines the text that will be used to determine if a match is found in the data stream. The Event field accepts regular expressions for performing complex text comparisons. The menu button beside the field provides a list of regular expression options.

The Severity field contains a list of predefined severity values. The values provided are Info, Warning, Minor, Major, Critical and Clear. The default value is Info.

The Action Name field contains a list of actions by action name. This list is dynamically created using the actions defined on the Actions page of the Configuration Property Sheet. The default value is blank meaning no action will occur if an event match occurs.

Figure 113 M1 Alarm dialog box



Meridian Mail Alarm dialog box

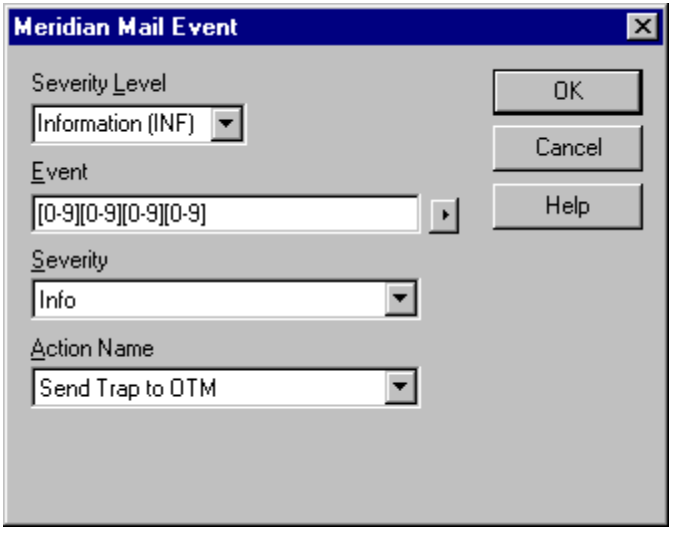
The Meridian Mail Alarm dialog box (Figure 114) defines the values for a Meridian Mail Alarm rule. The Severity Level field contains a list of predefined severity levels. The values provided are Information (INF), Minor (*), Major (**), Critical (***), Clear (OFF), and All. This allows the user to define the Meridian Mail severity level in the data stream, which is used in addition to the Event, to determine if a match is found. The option to chose All for severity level was added to allow the user to match the event regardless of the severity level sent from Meridian Mail.

The Event field defines the text that will be used to determine if a match is found in the data stream. The Event field accepts regular expressions for performing complex text comparisons. The menu button beside the field provides a list of regular expression options.

The Severity field contains a list of predefined severity values. The values provided are Info, Warning, Minor, Major, Critical, and Clear. The default value is Info.

The Action Name field contains a list of actions by action name. This list is dynamically created using the actions defined on the Actions page of the Configuration Property Sheet. The default value is blank meaning no action occurs if an event match occurs.

Figure 114 Meridian Mail Event dialog box



Generic Event dialog box

The Generic Event dialog box (Figure 115) allows you to define the values for a generic event rule. Generic systems are not Meridian 1 or Succession CSE 1000 systems.

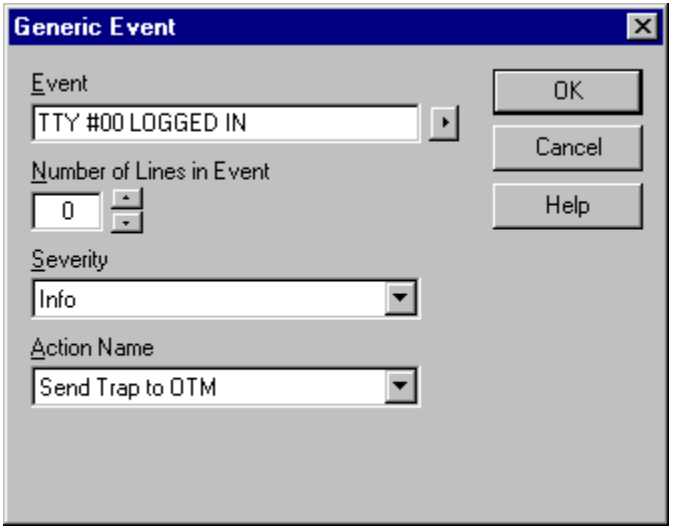
The Event edit box defines the text that will be used to determine if a match is found in the data stream. The Event field accepts regular expressions for performing complex text comparisons. The menu button beside the field provides a list of regular expression options.

The Number of Lines in Event field defines the number of lines in the data stream to capture. The values are 1–5 (0 is the default). A value of zero records the event only.

The Severity field contains a list of predefined severity values. The values provided are Info, Warning, Minor, Major, Critical, and Clear. The default value is Info.

The Action Name field contains a list of actions by action name. This list is dynamically created using the actions defined on the Actions page of the Configuration Property Sheet. The default value is blank, which means that no action occurs if an event match occurs.

Figure 115 Generic Event dialog box



Schedule a backup or retrieval

DBA allows you to schedule a single or routine backup of your Meridian 1 or Succession CSE 1000 system's database files. On an Option 11C or Succession CSE 1000 system, you can schedule the retrieval of buffered CDR and Traffic data from the Meridian 1 or Succession CSE 1000 system to the PC.

The following procedure describes how to schedule either operation in DBA:

Note: A scheduled job does not configure the Meridian 1 or Succession CSE 1000 system. Use the correct LD 117 settings (DBK and BUF) for the Meridian 1 or Succession CSE 1000 system.

1 Select File > Schedule in the DBA main window.

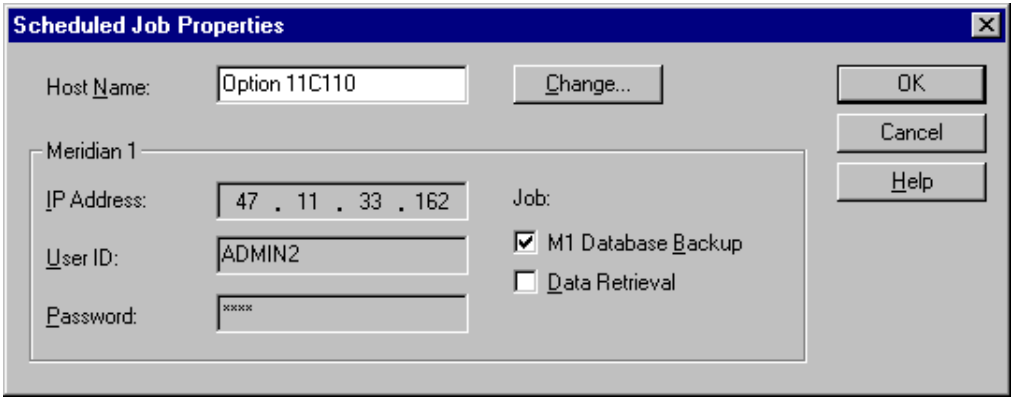
The Select a System for Scheduling dialog box opens.

2 Use the dialog box tree to select the Meridian 1 or Succession CSE 1000 system you want to schedule.

3 Click OK, or double-click on the selected system, to confirm your selection.

The Scheduled Job Properties dialog box opens (Figure 116).

Figure 116 Scheduled Job Properties dialog box



4 To change your system selection, click on Change to return to the last dialog box.

5 (Optional) Enter the Host Name of the System in the indicated field.

Note: The Host Name, IP Address, Login Name, and Password data for the selected Meridian 1 or Succession CSE 1000 system are stored in the OTM database. The DBA application automatically fills these fields with the values from the OTM database. In the Scheduled Job Properties dialog box, these fields are read-only. If the values are not correct, enter the correct values in the OTM Navigator System Properties.

6 Click on the check box of the operation you want to schedule:

PBX Database Backup - Back up Meridian 1 or Succession CSE 1000 database files.

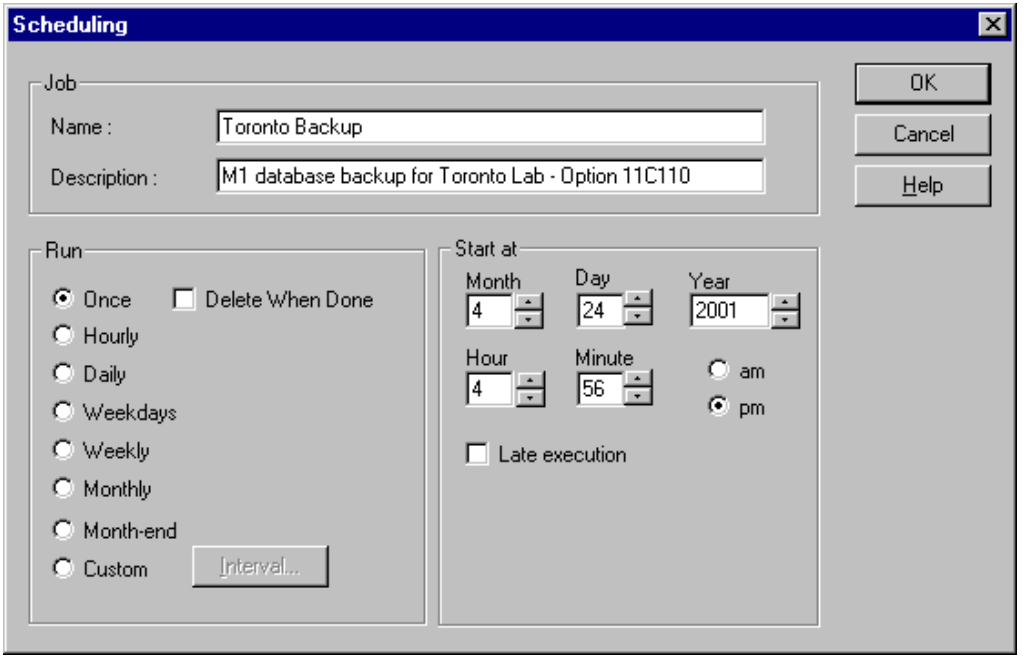
Data Retrieval - Retrieve buffered CDR and Traffic data from the Meridian 1 or Succession CSE 1000 system.

Note: The Data Retrieval check box only functions for Option 11C and Succession CSE 1000 systems. Data retrieval is only available for systems that are defined as Option 11C, Option 11C Mini, or Succession CSE 1000 in the OTM Navigator database.

7 Click OK to confirm your settings.

The Scheduling dialog box opens (Figure 117).

Figure 117 Scheduling dialog box

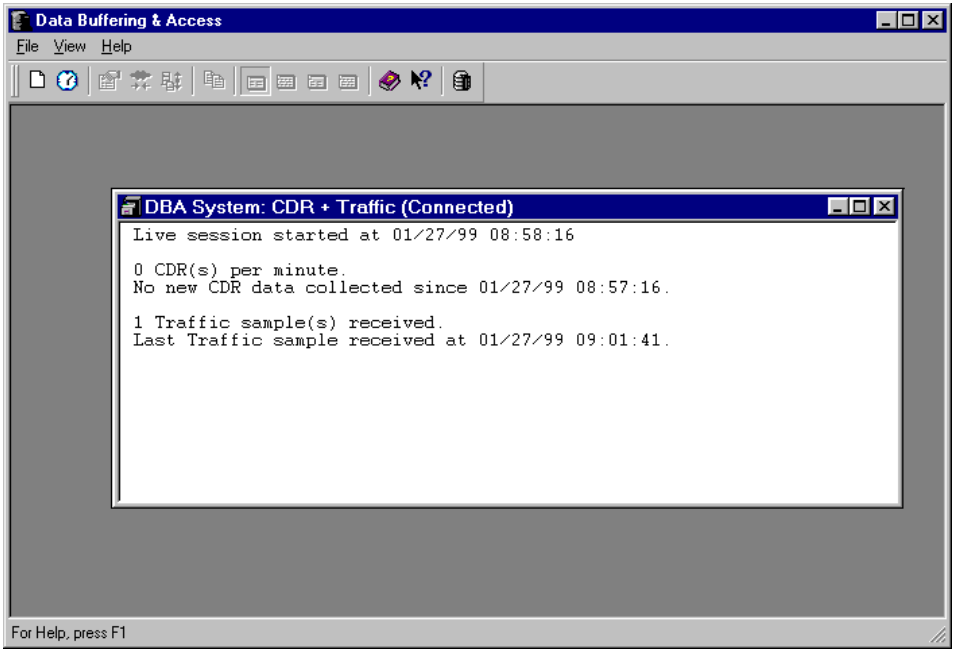


8 Schedule the job by completing the items in the Scheduling dialog box and clicking OK.

View session data

In a live session, you can view the collected CDR, Traffic, and serial data, and the session data collection statistics (Figure 118).

Figure 118 Sample session window displaying Statistics



From the View menu, select one of the following:

- CDR Data to display a snapshot of CDR data collected by DBA (up to the last 15 minutes)
- TRF Data to display a snapshot of Traffic data collected by DBA (up to the last 15 minutes)
- Statistics to display the average number of CDRs per minute, the time of the last Traffic Sample, and the time of the last serial data connection
- Refresh to update CDR, Traffic, and serial data views with the latest collected data

You can use the following Edit menu commands to handle text in the session window:

- Copy to copy text from the session window.
- Select All to select all text in the session window.
- Find to locate selected text in the session window.

Retrieving CDR data from Survivable IP systems

When in survival mode, the survivable expansion cabinets and survivable media gateways operate as if they are standalone Option 11C or Succession CSE 1000 systems. Call Detail Records (CDR) and Traffic Measurements (TRF) are only generated by the expansion cabinets and the media gateways when the systems are operating in survival mode.

In the event that an expansion cabinet or media gateway enters survival mode, it is possible to collect CDR records from the expansion cabinet or media gateway. These records must be manually retrieved, using the XModem procedure, when the expansion cabinet or media gateway returns to normal mode.

XModem procedure

Call Detail Records (CDR) are only generated by the Option 11C survivable cabinets and the Succession CSE 1000 survivable media gateways when the system is running in survival mode. The CDR are deleted from the survivable cabinet or survivable media gateway once they have been successfully transferred to the PC. The XCDR command in LD 143 transfers the CDR file from the Option 11C expansion cabinet or the Succession CSE 1000 media gateway directly to the OTM PC. There is one CDR file stored on each expansion cabinet or media gateway.

To retrieve the CDR files stored on the survivable expansion cabinets or the survivable media gateways using XModem:

1. Establish a connection between the PC and the main cabinet of the Option 11C or the call server of the Succession CSE 1000.

   This may be done either remotely through the use of a modem or directly through the use of a serial cable and a modem eliminator.

2. Use a terminal emulation program such as HyperTerminal to begin a TTY session with the Option 11C or the Succession CSE 1000 system using either the modem or SDI cable.

3. From the PC, go to LD 143 and type **`XCDR`**.

4. When the system asks for an expansion cabinet number, enter the number assigned to the expansion cabinet or media gateway that contains the dba.cdr file that you want to retrieve.

The system responds:

```
Getting CDR file for EXP_CAB <num>
Ready to transmit...
```

5 You must invoke the XModem protocol on the PC to receive the CDR file. For example, use the HyperTerminal transfer function to receive the file using XModem protocol.

6 Name the file.

You may give any name you want to the file being received.

Note: Use a file name that will not overwrite any DBA-specific files if DBA is used to retrieve CDR/Traffic files from the main cabinet of the Option 11C or the call server of the Succession CSE 1000 system.

7 Parse the file into the main cabinet or call server's database on the PC.

For information on importing CDR data into Billing applications, refer to *Using Optivity Telephone Manager Telemanagement Applications* (553-3001-331).

PBX Database Disaster Recovery

PBX Database Disaster Recovery provides a quick way to perform a Meridian 1 or Succession CSE 1000 database backup and restore, or to schedule a database backup. You can schedule or manually start a backup operation, and the application connects to the switch and retrieves the database files. You can manually start a restore operation to restore the database file to the Meridian 1 or Succession CSE 1000 system. Before performing the restore operation, you must establish a live session with the switch.

Note: PBX Database Disaster Recovery runs separate from the normal Meridian 1 and Succession CSE 1000 database backup feature: Electronic Data Dump (EDD).

The PBX Database disaster recovery feature is available for all Meridian 1 and Succession CSE 1000 systems that are configured in the OTM Navigator. Since survivable expansion cabinets and survivable media gateways are configured as separate systems in the Navigator, the Disaster Recovery feature is available to both the main cabinet, or call server, and the survivable expansion cabinets, or

media gateways. You do not need to backup the expansion cabinets and media gateways. Any data that is restored to an expansion cabinet, or media gateway, while it is operating in survival mode is overwritten by the database of the main cabinet, or call server, when the system returns to normal mode.

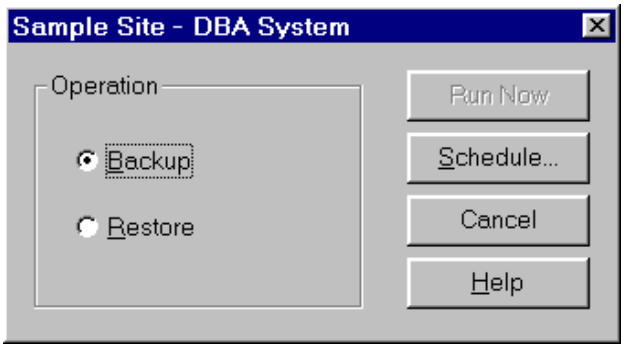
To perform a database backup or restore:

1 Open and select a session window.

2 Select PBX Database Disaster Recovery from the File menu.

The PBX Database Disaster Recovery dialog box opens (Figure 119).

Figure 119 PBX Database Disaster Recovery dialog box



Click one of the two radio buttons to select an operation:

— Backup - Back up Meridian 1 or Succession CSE 1000 database files to the PC.

Note: A backup can be run on a PC that is not the PC used for collecting live CDR or Traffic data, or both.

— Restore - Transfer earlier backed-up Meridian 1 or Succession CSE 1000 database files from the PC to the Meridian 1 or Succession CSE 1000 system.

Warning: The Restore operation overwrites the existing database files on the Meridian 1 or Succession CSE 1000 system. Before you use the Restore operation:

- Make sure that your backup files are valid
- Make sure that no other PC is performing a Backup or Restore

3 Select one of the following buttons:

- Run Now to begin the selected operation.
- Schedule to indicate a time for routine database backup. You cannot schedule a restore. The OTM Scheduling dialog box opens. Use the dialog box to schedule your database backup. See "Schedule a backup or retrieval" on page 256.

  The DBA application displays the status of the backup or restore operation.

Hide and restore the DBA main window

To maintain a live data session, you must keep the DBA main window open continuously. To minimize screen congestion, hide the DBA main window to remove it from the Windows Desktop. DBA remains active and the DBA tray icon continues to appear on the Windows Toolbar.

To hide the DBA main window, do one of the following:

- Select Hide Application from the View menu.
- Click Hide Main Window on the toolbar.
- Double-click the DBA tray icon.

To restore your DBA main window, double-click the tray icon.

You can right-click the tray icon to display a pop-up menu containing the menu items, Hide Window or Restore Window. Use these commands to hide or restore the DBA main window, or select Exit to end the program.

Utilities

Scheduler

This section contains a general overview of the Scheduler. For more information about how to use the Scheduler windows, refer to the Scheduler online Help.

Note: Changes that are input using Web Station are scheduled using the web-based scheduling tool. See "Schedule button" on page 390.

The Scheduler schedules an Optivity Telephony Manager activity (or any Windows application activity) for processing at a later date and time. With Scheduler, you can define the intervals you want to run the activity. If there are multiple tasks in a job, you can assign the tasks in a sequential order using the queue function.

The Scheduler normally runs in background mode. This means that if an OTM application is due to run at a certain time, the Scheduler automatically runs it at that time without interrupting current sessions.

Note: The Scheduler must be running in the Windows environment at the time an event is to run. You can start the Scheduler application any time. An event and its tasks do not execute if the Scheduler is not running at the scheduled time.

Access the Scheduler

There are two ways to access the Scheduler:

- From the OTM Navigator, choose Utilities > Scheduler and schedule the activity directly.
- From any supported application, select the Schedule command where it appears in that application. For example, you can click Schedule in the Reporting dialog box of the Telecom Billing System. You can use the Scheduler functions to enter the information to schedule this application.

Jobs and tasks

The Scheduler represents scheduled activities (such as, data collection, synchronization and reporting) as jobs and tasks.

What is a job?

A job contains the scheduling properties of an activity. This includes such information as the activity's initial execution time; interval for additional executions; status; name; and queue assignments. The job also contains the actual task that identifies the activity's actions. That is, each task that runs that actual activity is assigned to a job. This way, the task can be scheduled. Only jobs can be scheduled; individual tasks cannot be scheduled without a job.

What is a task?

A task contains the actual command used to invoke the activity from the OTM application. This includes such information as the activity's command line (the code used to invoke the activity); its priority in the list of tasks (when it should be executed in relation to any other tasks in the list); and any dependencies associated with it (physical resources on your PC that are needed to execute the activity).

In most cases, one job has one task. This simplifies the process of defining and scheduling activities. You simply schedule the activity, assign it as a task to a job, and then enter its scheduling criteria. There are instances, however, when it is beneficial to assign multiple tasks to a single job (e.g., in situations where you want to run multiple tasks all at the same scheduled time). The Scheduler allows you to assign multiple tasks to each job after they have been defined.

Execution of tasks in the Scheduler queue

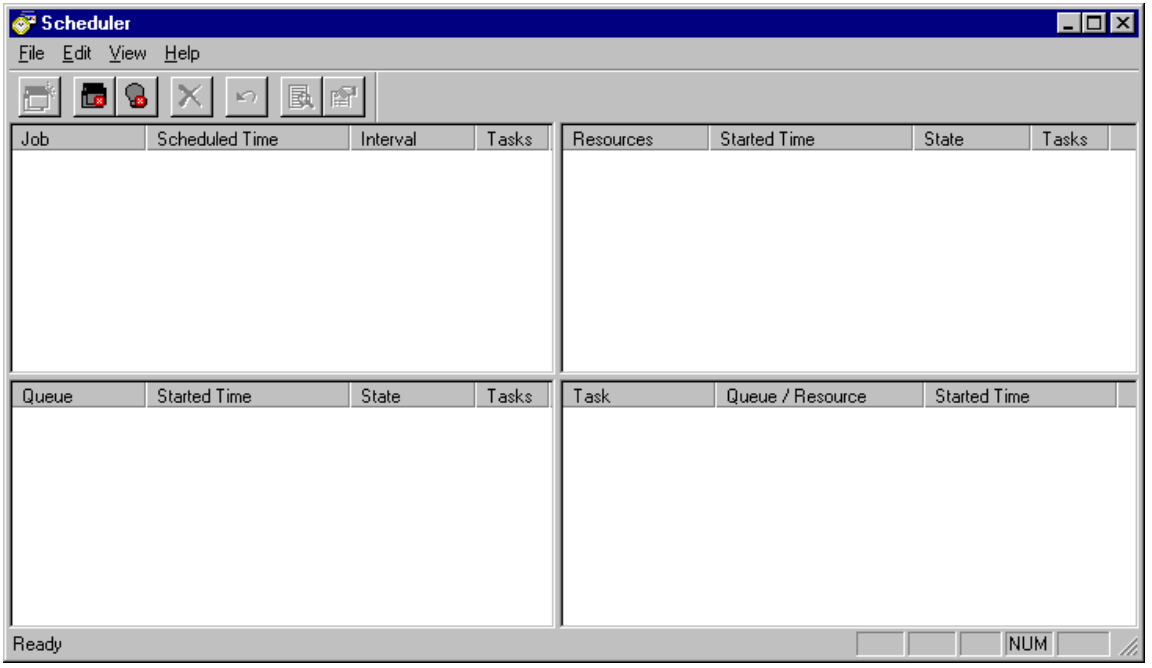
Any task in the Scheduler queue can be executed immediately by right-clicking the task in the Scheduler window and selecting Start Now. Tasks in the queue that have the same priority and are scheduled to occur at the same time are executed simultaneously. When tasks in the queue have different priorities and are scheduled to occur at the same time, the higher priority tasks execute first and are followed by the lower priority tasks.

About the Scheduler window

The following sections describe the Scheduler window and the menus of the Scheduler.

The main Scheduler window (Figure 120) contains sections that list the scheduled jobs and queues. These sections provide the interfaces for the Job, Queue, and Dependency Queue Managers, and list the running tasks for each job. Use these sections to view and access your jobs and queues.

Figure 120 Scheduler window



The main Scheduler window contains the following information sections:

Scheduled jobs section

The Job Manager displays the details of all of the scheduled jobs in the top-left section of the window. The display shows the job name, scheduled date and time for initial execution, intervals, and number of tasks in the job.

Job in the queue section

The Queue Manager displays the current status of jobs in the queue in the bottom-left section of the window. When the last task of a job completes, the queue record disappears.

Dependency resource section

The top-right section of the window displays the current status of the dependency queues whose tasks are executing. The Dependency Queue Manager displays the information. A dependency queue is a collection of tasks requiring the same system resource (e.g., two tasks need to access a COM port at the same time).

The following list describes the properties of a dependency queue's tasks:

- Each task in the dependency queue is a top task of some queue.
- The order of tasks in the task list of a dependency queue defines the order of task execution.
- You can move tasks in the list up or down or edit tasks, except a task that has started processing.
- When a task completes, its record disappears from the task list.
- Tasks requiring more than one system resource appear in more than one dependency queue. If you delete a task record from one dependency queue, the task record is automatically deleted from other dependency queues.

Tasks running section

The bottom-right section shows the tasks that are running now. From here, you can delete any running tasks. When deleted, a task is no longer monitored by the Scheduler. If you delete a task, the application containing that task continues to run.

File Menu

From the File menu commands, you can manage the Scheduler jobs and queues and exit from the Scheduler. Use the Help command to get detailed descriptions about the functions of each command.

Edit Menu

The Edit menu allows you to manage defined jobs or queues. Use its commands to enable or disable the defined jobs or queues. Use the Help command to get detailed descriptions about the functions of each command.

View Menu

The View menu allows you to:

- Display or hide the Scheduler's toolbar and status bar
- View the task list of the highlighted job or queue
- Arrange the jobs or queues within each section of the window

Import and Export utilities

This section contains a general overview of the Import and Export utilities. It describes their basic function and purpose.

The Import and Export utilities are used to import and export data to and from the Optivity Telephony Manager (OTM) data base files. These tools allow you to share data between the OTM data bases and other applications.

The following are examples of situations in which the Import and Export utilities are useful:

- If you are installing a new Meridian 1 or Succession CSE 1000 system, and already have a source that contains user data (i.e., Names, Departments, Managers), you may import these fields into the OTM Directory. You can then use Station Administration to assign telephones to the imported user records.
- Synchronize with an LDAP database to complete the unique identifier (UID) fields.
- The OTM Directory can be exported for external telephone book generation or for importing into other external data bases.

Import utility

The Import utility is used to import data records from an external source to a specific site/system and convert them to a format compatible with the OTM data bases. This function is useful for quickly updating your data bases with data from another application.

When importing data, you can select from a predefined import configuration or you can define your own configuration. The following paragraphs outline how to import data using a predefined and custom configuration. Review the information later in this section for details on the functions and dialog boxes used to perform these steps.

Import data using a predefined configuration

To import data using a predefined configuration, you must first select the configuration and its component values. This configuration outlines the parameters of the data being imported. This includes such information as the format of the data, the types of records, and their field parameters (character length, position, and so on). OTM includes a set of predefined import configurations for common data base types. You can then select the source from where you will import the data (for example, disk drive, CD-ROM, and so on).

The following is a summary of the steps required to import data using a predefined configuration:

1. Access the Import utility. See “Access the Import utility” on page 270.
2. Select the import configuration components. See “Selecting import configuration components” on page 270
3. Define the import configuration. See “Defining an import configuration” on page 271
4. Import the data. See “Import data” on page 273

Import data using a custom configuration

To import data using a custom configuration, you must first define the import configuration. This configuration outlines the parameters of the data being imported. This includes such information as the format of the data, the types of records, and their field parameters (character length, position, and so on). You can then select from where you will import the data (for example, disk drive, CD-ROM, and so on).

The following is a summary of the steps required to import data using a custom configuration:

1. Access the Import utility. See "Access the Import utility", next.
2. Define the import configuration components. See "Import configuration list" on page 271.
3. Define the import configuration. See "Defining an import configuration" on page 271.
4. Import the data. See "Import data" on page 273.

Access the Import utility

To import data using a predefined or custom configuration, access the Import utility. Based on which application you are using, the Import utility may be accessed from several locations.

For example, if you are accessing the Import utility from the OTM Telecom Billing System, you select File > Import from the TBS main window. If you are accessing the Import utility from the System Window, you select Utilities > Import. The Import dialog box appears allowing you to select from a list of predefined configurations or add your own custom configuration. Once you have selected the predefined configuration and the source directories, click Go to import the data.

Selecting import configuration components

The Import (Select an Import Configuration) function is used to select a predefined import configuration. To select a predefined import configuration:

1. Click the import configuration name from the Select an Import Configuration drop-down list box.
2. To define the components of the imported file, click the ellipsis command button (**...**). The Import Configuration Definition dialog box appears allowing you to select the tables or data bases you want to import.
3. Once you have selected the predefined configuration and the source directories, click Go to import the data.

Import configuration list

If you are creating a new import configuration, then clicking the ellipsis command button (…) accesses the Import Configurations List dialog box. The Import Configurations List dialog box contains a list of predefined import configurations. To create a new configuration:

1. Click Add. This accesses the Import Configuration Definition dialog box where you can enter the importing information.

Note: To edit an existing configuration, click the name of the configuration and click Edit. Again, this accesses the Import Configuration Definition dialog box where you can enter the new definition.

2. To select an import configuration, click the name of the import configuration name to highlight it in the list, and click OK to select it.

Defining an import configuration

The Import Configuration Definition function is used to select and define the type of data being imported into the OTM data bases. Enter the following information to define the import configuration:

1. Configuration Name: Enter the name of this configuration. The name helps to identify this configuration from others in the Import Configurations List.
2. Tables/Database menu tree: Select the type of tables into which the data will be imported. For example, if you are importing data into the OTM Telecom Billing System, you can select from Call Records; Organization Levels; and Tax Types to import data into these data bases.

3 File/Database Type: From this drop-down list box, select the type of data being imported. Select from the following:

- dBase IV
- Excel 5
- Microsoft Access
- ODBC Data Source
- Text File (Comma Separated Values)
- Text File (Fixed Width)

4 File/Database Location: To select the source of the imported data base file (i.e., the directory or drive from which the file will be imported), click the ellipsis command button (**...**) next to the File/Database Location field. From the Directory Location Form dialog box that appears, select the drive and directory of the data base file being imported, and then click OK. Notice that this appears in the File/Database Location field.

5 Import Profile Format: To select the format of the imported file, click Format. This accesses the Import Format dialog box in which you can select the field properties for the imported file.

6 File/Table Name: From this drop-down list, select the filename of the data base being imported.

7 Update Activity: This option determines how this data base is updated. Select from the options listed in Table 20.

Table 20 Import update activity options

Option	Meaning
Append non matching	Appends non-matching records
Update matching	Updates matching records
Update matching or append	Either updates or appends as appropriate
Delete matching!	Deletes matching records
Delete all rows then append!	Purges entire table before appending
Recreate table then append!	Drops and recreates table before appending

8 Purge records after writing: Turn on this check box to delete the records from the source file after they have been successfully written to the destination file.

Note: This action is irreversible. Therefore, use caution if selecting this option.

9 Description: This field describes the contents of the table selected from the Tables/Database Name menu tree.

10 Once you have entered this information, click OK to save these edits and return to the previous dialog box.

Import data

11 Once you have selected the import information, click Go to proceed. The Import utility then attempts to import this data into the site/system files.

Example data import

The following example demonstrates how to import data using a predefined configuration:

This example outlines how to import data from the MAT Call Accounting Employee Database to a site/system while running the OTM Telecom Billing System. This example uses a fictitious import configuration entitled MAT Import. For this example, the Employee Database file is located in C:\MAT. The filename is EMPLOY1.DAT.

a From the Telecom Billing System main window, click File | Import. The Import dialog box appears.

b From the Select an Import Configuration drop-down list box, select MAT Import.

c To select the import values, click the ellipsis command button (…). The Import Configuration dialog box appears.

d From the data base name menu tree, select Employee Database.

e To select the source of the imported data base file, click the ellipsis command button (…) next to the File/Database Location field.

f From the Directory Location Form dialog box, select C:\MAT, and then click OK.

g From the File/Table Name drop-down list box, select EMPLOY1.DAT.

h From the Update Activity drop-down list box, select the default Append All.

i To proceed with the data import, click Go.

Restore Call Database using Import utility

This example demonstrates how to restore the Telecom Billing System's Call Database from drive A. To restore the Call Database, perform the following steps:

a Access the Import utility by clicking File | Import from the Telecom Billing System main window.

b Select Merge CDR/Costed Data as the Import Configuration.

c To define the parameters for this restore operation, click the ellipsis command button (…) next to this list box. The Import configuration dialog box appears listing CDR/Costed Data Merge as the destination (To Telecom Billing System).

d In the File/Database Location field, enter the source of this restore operation. For example, enter: A:\ for a floppy disk drive. Click the ellipsis command (…) to view a list of available drives.

e If you want to restore a range of call records based on their dates, then click the ellipsis command (…) next to the Filter drop-down list box.

f In the Filters dialog box that appears, create a new filter definition and enter the range of call dates for this filter.

g Select this new filter name from the Filter drop-down list box.

h Click Go to proceed with the restore operation.

Export utility

The Export utility is used to export data from the OTM data bases to an external source. This is useful for archiving a range of data for later retrieval. For example, if you want to archive a range of CDR data to an external source, then you use the Export utility to select a range of data and specify the external source.

When exporting data, you can select from a predefined export configuration, or you can define your own custom configuration.

Export data using a predefined configuration

To export data using a predefined configuration, you must first select the configuration and its component values. This configuration outlines the parameters of the data being exported. This includes such information as the format of the data, the types of records and their field parameters (character length, position etc.). OTM includes a set of predefined export configurations for common data base types. You can then select to where you will export the data (for example, disk drive, CD-ROM, and so on).

The following is a summary of the steps required to export data using a predefined configuration:

1. Access the Export utility. See "Access the Export utility" on page 276.
2. Select export configuration components. See "Select export configuration" on page 276.
3. Define export configuration. See "Export configuration definition" on page 277.
4. Export the data. See "Export data" on page 278.

Export data using a custom configuration

To export data using a custom configuration, you must first define the export configuration. This configuration outlines the parameters of the data being exported. This includes such information as the format of the data, the types of records, and their field parameters (character length, position etc.). You can then select to where you will export the data (for example, disk drive, CD-ROM, and so on).

The following is a summary of the steps required to export data using a custom configuration:

1. Access the Export utility. See "Access the Export utility", next.
2. Define export configuration components. See "Export configurations list" on page 276.

3 Define export configuration. See "Export configuration definition" on page 277.

4 Export the data. See "Export data" on page 278.

Access the Export utility

To export data using a predefined or custom configuration, access the Export utility. Based on which application you are using, the Export utility may be accessed from several locations.

For example, if you are accessing the Export utility from the Telecom Billing System, then you select File > Export from the TBS main window. If you are accessing the Export utility from the system window, select Utilities > Export. The Export dialog box appears allowing you to select from a list of predefined configurations or add your own custom configuration. Once you have selected the predefined configuration and the source directories, click Go to export the data.

Select export configuration

The Export (Select an Export Configuration) dialog box is used to select a predefined export configuration. To select a predefined export configuration, follow these steps:

1 Click the export configuration name from the Select an Export Configuration drop-down list box.

2 To define the components of the exported file, click the ellipsis command button (…). The Export Configuration Definition dialog box appears allowing you to select the tables or data bases that you want to export.

   If you are creating a new export configuration, then clicking the ellipsis command button (…) accesses the Export Configurations List dialog box.

3 Once you have selected the predefined configuration and the destination directories, click Go to export the data.

Export configurations list

The Export Configurations List dialog contains a list of predefined export configurations. To create a new configuration, follow these steps:

1 Click Add. This accesses the Export Configuration Definition dialog box where you can enter the exporting information.

Note: To edit an existing configuration, click the name of the configuration and click Edit. Again, this accesses the Export Configuration Definition dialog box where you can enter the new definition.

2 To select an export configuration, click the name of the export configuration to highlight in the list, and then click OK to select it.

Export configuration definition

The Export Configuration Definition dialog box is used to select and define the type of data being exported from the OTM data bases. Enter the following information to define the export configuration:

1 Configuration Name: In this field, enter the name of this configuration. This is for informational purposes and helps to identify this configuration from others in the Export Configurations List.

2 Tables/Database menu tree: From this menu tree, select the type of tables from which the data will be exported.

3 File/Database Type: From this drop-down list box, select the type of data being exported.

4 File/Database Location: To select the destination of the exported data base file (i.e., the directory or drive to which the file will be exported), click the ellipsis command button (…) next to the File/Database Location field. From the Directory Location Form dialog box which appears, select the destination drive and directory. Click OK. Notice that the destination you selected appears in the File/Database Location field.

5 Export Profile Format: To select the format of the exported file, click Format. This accesses the Export Format dialog box in which you can select the field properties for the exported file.

6 File/Table Name: From this drop-down list box, select the filename of the data base being exported.

7 Update Activity: This option determines how this data base is updated. Select from the following options (Table 21):

Table 21 Export update activity table

Option	Meaning
Append non matching	Appends non-matching records
Update matching	Updates matching records
Update matching or append	Either updates or appends as appropriate
Delete matching!	Deletes matching records
Delete all rows then append!	Purges entire table before appending
Recreate table then append!	Drops and recreates table before appending

8 Purge records after writing: Turn on this check box to delete the records from the source file after they have been successfully written to the destination file.

Note: This action is irreversible. You should, therefore, use caution if selecting this option.

9 Description: This field describes the contents of the table selected from the Tables/Database Name menu tree.

10 Once you have entered this information, click OK to save these edits and return to the previous dialog box.

Export data

11 Once you have selected the export information, click Go to proceed. The Export utility then attempts to export this data from the site/system files to the external device or file.

Archiving Call Database using Export utility

This example demonstrates how to archive the Telecom Billing System's Call Database to drive A. To archive the Call Database, perform the following steps:

1. Access the Export utility by clicking File | Export from the Telecom Billing System main window.
2. Select Archive CDR/Costed Data as the Export Configuration.
3. To define the parameters for this archive operation, click the ellipsis command button (…) next to this list box. The Export configuration dialog box appears listing CDR/Costed Data as the source (from Telecom Billing System).
4. In the File/Database Location field, enter the destination of this archive operation. For example, enter: A:\ for a floppy disk drive. Click the ellipsis command (…) to view a list of available drives.
5. If you want to archive a range of call records based on their dates, then click the ellipsis command (…) next to the Filter drop-down list box.
6. In the Filters dialog box that appears, create a new filter definition and enter the range of call dates for this filter.
7. Select this new filter name from the Filter drop-down list box.
8. Select the Purge Records After Writing option to delete the range of call records from the original Call Database once the call records have been copied to the external source. This clears up disk space on your PC.
9. Click Go to proceed with the archive operation.

Database Compact/Repair utility

This section describes the functions and purpose of the OTM Database Compact and Repair utility. For complete details on using this utility, refer to the online Help included with the software.

Use the Compact and Repair utility to compact or repair the OTM database files for specific sites and systems. This utility compacts or repairs any Microsoft Access format database files of the same version as OTM (for example, Access 97).

The following are two common reasons to compact data base files:

- Increase in size

CDR data that is accessed by OTM Telecom Billing System and OTM Directory is stored in data base files. These database files grow as records are added and deleted. Periodically, the database files should be compacted to increase access performance. This is especially true of very active files, such as CDR database files.

- File fragmentation

  As you update the OTM data bases, the files can become fragmented and use more disk space than necessary. Use the Compact command to compact these data bases and optimize the disk space used by these data base files. Compacted data bases can often be accessed more quickly. This saves time and system resources when you perform such operations as database backups.

In some cases, the OTM data bases can become corrupted and may no longer be accessible by the OTM applications. Use the Repair command to try and repair these databases so they can be accessed by these applications.

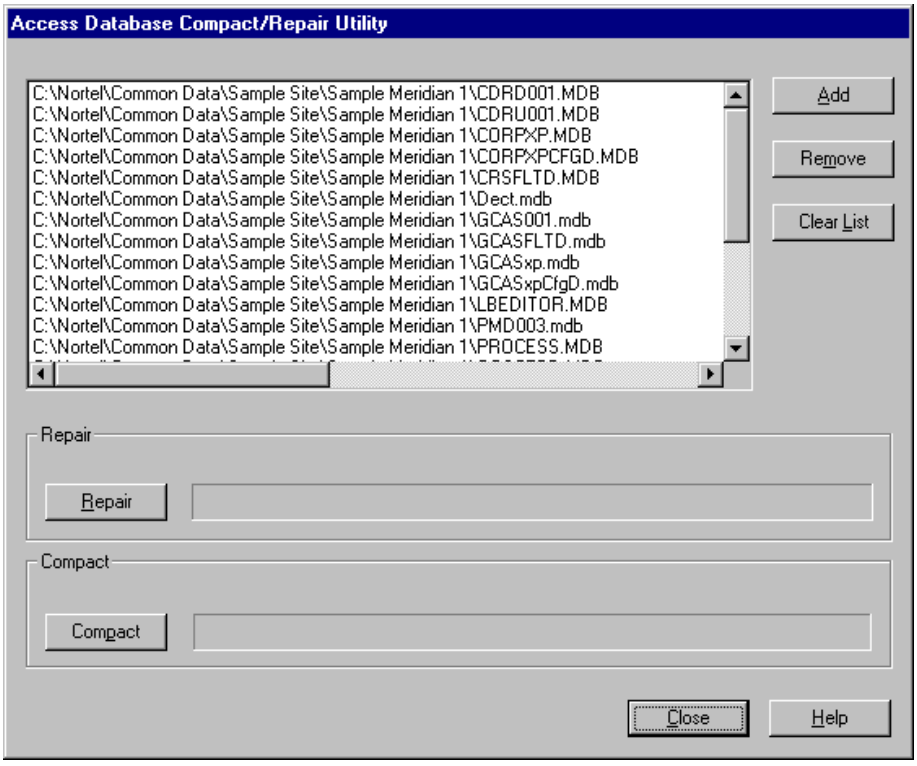
Caution: This utility creates a temporary copy of the databases as they are compacted. Therefore, you must have enough disk space for both the original and the duplicate databases. This operation fails if the system runs out of disk space.

Note: You cannot run this utility for a specific system if you are running an application within that system. Before proceeding with this utility, exit from the application that is running within that system.

To compact a data base:

1. Click the desired system in the OTM System menu tree.
2. Select Compact from the Utilities menu. The Compact Database dialog box appears.
3. Specify the files you want to compact or repair, and then click Compact.

Figure 121 Access Database Compact/Repair Utility window



Backup and Restore

OTM's Backup and Restore utilities provide convenient options for safeguarding, cloning, and restoring OTM data on a PC. The Backup utility lets you create a OTM backup file of PC-based system property and application data for any or all sites and systems. The Restore utility lets you restore a backup file to the same or different sites and systems on the same or other PCs.

Note: The Backup and Restore utilities have no effect on Meridian 1 or Succession CSE 1000 data. To secure OTM data that has been uploaded to the system, you must use OTM's Electronic Data Dump feature described on page 312.

Media, files, and data types

You can create an OTM backup file on the PC's hard drive, a network drive, disks and other removable disks, or any other available media that meets your requirements for convenience and file space.

All backup data is written to a single folder for each backup operation. This folder includes the following files:

- Zip file (*.ZIP), the backup file in compressed format
- Log file (*.LOG), providing the backup file's date; type; OTM version; and sites, systems, and applications by name

You can back up and restore data for all or any combination of the following OTM applications:

- Telecom Billing System
- Call Tracking
- ESN
- Station Administration
- Traffic Analysis

The Full OTM backup also includes:

- Web Navigator data such as User Groups
- Client list

You can back up and restore data for these applications across multiple sites and systems at the same time.

Applications are associated with specific sites and systems. All backups of application data include the system property data associated with the selected site or system.

When you restore data from a backup file, you have the option *not* to restore system property data. This option is useful in cases where the destination site or system is preconfigured, and you do not want to overwrite its system property data. For example, system property data such as communication ports, modem configuration, and user ID and password may be different from one PC to the next.

Benefits

The Backup and Restore utilities provide several key benefits:

- cloning
- moving data offsite
- disaster recovery

Cloning

The process of copying system property and application data associated with one site or system to another site or system is called *cloning*. Copying data to another site or system can be a great timesaver. It can save you from having to enter a large amount of similar data one item at a time.

After cloning selected data, you can simply focus on making whatever changes are necessary to the cloned data. This operation is very flexible. The destination site or system can be new or already exist, and it can be on the same PC or on another PC.

Note: If you back up data from one PC and restore it to another, you must perform this operation under the same version of OTM. You cannot back up data from a PC with an older version of OTM and then restore the data to a PC with OTM. Upgrade the older version of OTM before performing this type of cloning operation.

Moving data offsite

If you want to maintain or occasionally modify OTM data offsite, an OTM backup file provides the solution. You can restore the backup file on any PC that has the same version of OTM installed.

When you finish modifying OTM data, create a new backup file. Then you can restore the modified data to the original or primary PC where OTM is installed.

Note: This operation works particularly well for modifying application data. Remember *not* to restore system property data from one PC to another if the PCs need to have different configurations for the corresponding sites and systems.

Disaster recovery

An important part of safeguarding your OTM data is having a disaster recovery plan. This plan should consider who makes the backups, what is backed up, how often, on what media, and where the backups are stored.

The full OTM backup is a more comprehensive backup option that is designed for disaster recovery. This option automatically backs up all sites, systems, and applications, as well as LDAP settings, DBA, the Client list, and Web Navigator data such as user groups. Custom Help and Alarm Notification registry settings are not backed up. In addition, the full OTM backup saves user-created files, such as scripts and customized reports. Consider performing this type of backup at least once a month and storing the backup file in a safe place.

Note: You should back up the Alarm Notification control and script files separately. The shipped files may be replaced during a software upgrade.

In the event of unrecoverable data loss, restore your full OTM backup file first. All file contents are restored to the PC. Then, if you have backups for selected sites, systems, and applications that are more recent, restore them next.

Note: OTM executables and files that can be reinstalled from the OTM CD are *excluded* in a disaster recovery backup. If OTM executables have been damaged or lost due to a hard-disk crash, for example, you must reinstall OTM on your repaired or replaced PC before restoring your full OTM backup.

Backing up a single Succession CSE 1000 system

A backup of a single Succession CSE 1000 system includes the Call Server and all of its applications, the Gatekeeper Zone (Gatekeeper IP addresses), and Signaling Server IP address(es). All Media Gateways belonging to the system are included in the backup, as well as all enabled Media Gateway applications. You are not given the option of selecting the applications that you want to have backed up.

Note: You cannot back up or restore an individual Media Gateway. The Media Gateways are only backed up and restored as components of the Succession CSE 1000 system to which they belong.

Note: The backup operation backs up OTM data. This backup operation does not back up the actual Succession CSE 1000 or Branch Office.

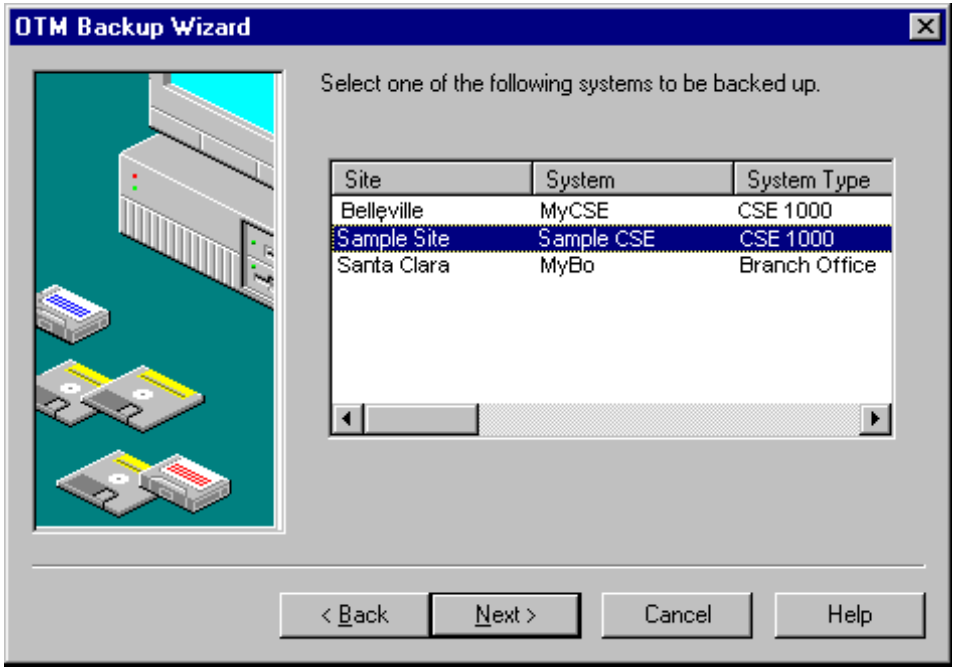
Backing up a Branch Office

Although a Branch Office is linked to a Succession CSE 1000 Call Server, it is backed up like a separate system with the following exceptions:

- When you back up a single Branch Office, the linked Succession CSE 1000 system and the association between the two is backed up. Note in Figure 122 that Branch Office appears as a system type.
- In a Full OTM backup, the Succession CSE 1000 system and its associated Branch Office(s) are backed up. The relationship between them is saved.

Note: When you back up a single Succession CSE 1000 system, its Media Gateways are backed up; however, its Branch Offices are not.

Figure 122 OTM Backup Wizard—Branch Office



Running the Backup utility

To run the Backup utility:

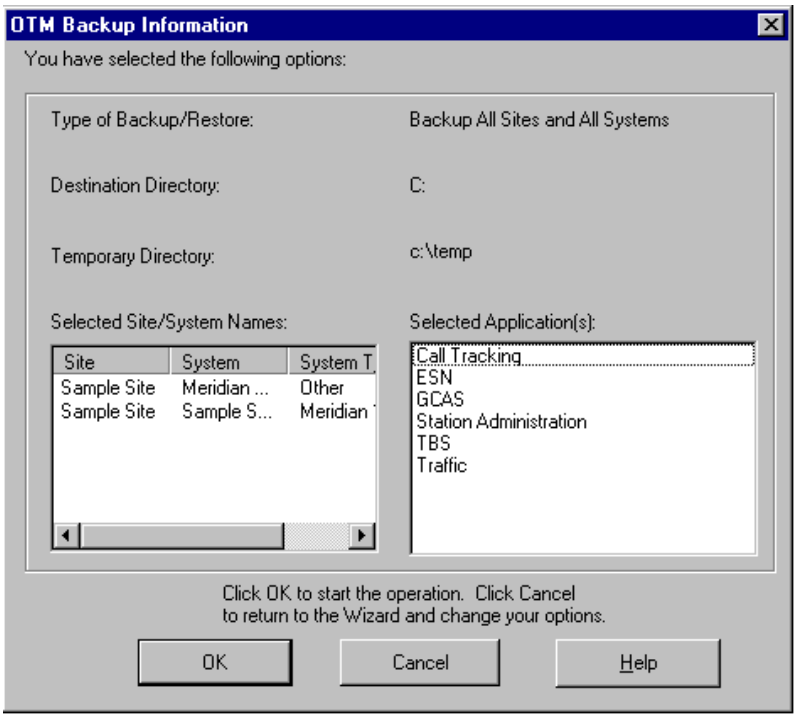
1 Select Backup from the Utilities menu of the Navigator window. This invokes a wizard to help you define the following parameters:

- Type of backup (single site, single system, all sites and systems, or full OTM backup)
- Applications (TBS, Call Tracking, ESN, Station, Traffic, GCAS)
- Destination directory for backup files
- Temporary directory for working files created during the operation

Note: The destination and temporary directory screens display a computed space requirement for the files. You can back up and restore data for these OTM applications across multiple sites and systems at the same time.

2 The next screen to appear is a dialog box (Figure 123) that summarizes your choices. Click OK to start the backup operation, or click Cancel to return to the wizard and change your options.

Figure 123 OTM Backup Information dialog box



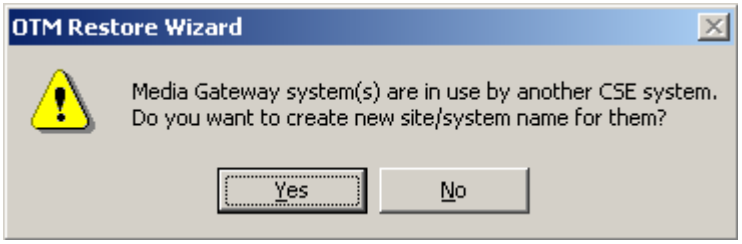
Restoring a Succession CSE 1000 system

There are two different scenarios for restoring a Succession CSE 1000 system:

- Replace - Deletes the existing Call Server and its Media Gateways, and creates a new system from the backup file
- Clone - Creates a new Call Server and its Media Gateways from the backup file

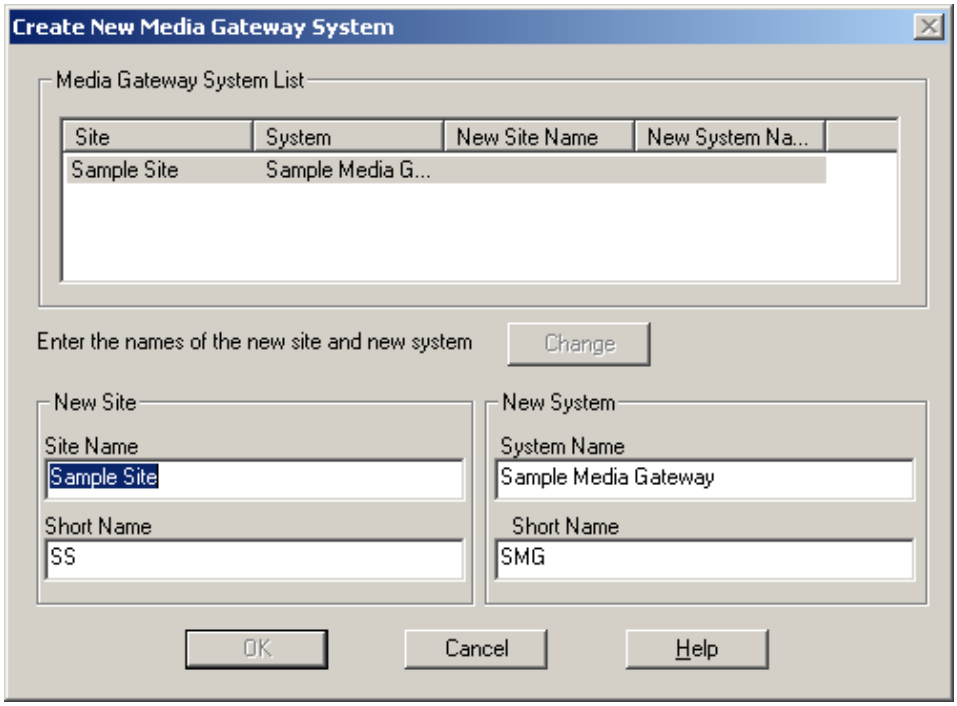
The backup file may contain a different list of Media Gateways than the system you are replacing. Also, the Media Gateways in the backup file may now belong to a different Call Server. For these reasons, before creating a Media Gateway from the backup, a check is made using the site-system name to determine whether or not the Media Gateway already exists. If OTM finds that the Media Gateway already exists, the OTM Restore Wizard dialog box opens (Figure 124).

Figure 124 OTM Restore Wizard dialog box



When you click Yes, the Create New Media Gateway System dialog box (Figure 125) opens, and you are prompted to enter a new site-system name for the Media Gateway that is in the backup file.

Figure 125 Create New Media Gateway System dialog box



If the gatekeeper zone for the Succession CSE 1000 system does not exist, OTM creates it. If the gatekeeper zone does exist, but is different from the zone in the backup file, OTM prompts you before overwriting the zone.

Table 22 shows an example of the changes that occur when you restore a Succession CSE 1000 system using the replace scenario.

Table 22 Using the restore utility to replace a Succession CSE 1000 system

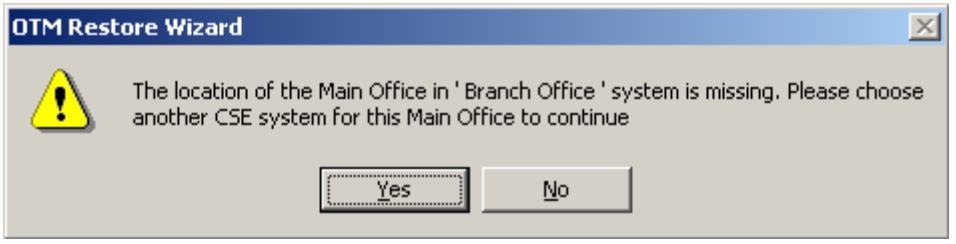
Backup file	Existing	Result
CSEa_BK	CSEa	CSEa_BK
MGa_BK	MGa	MGa_BK
MGb_BK	MGc	MGb_BKnewName
	CSEb	CSEb
	MGb	MGb

In this example, MGc no longer exists since it was not in the backup file. There is no change made to MGb, which is currently associated with CSEb. Since MGb is now associated with CSEb, MGb_BK is restored with a new site-system name as MGb_BKnewName.

Restoring a Branch Office

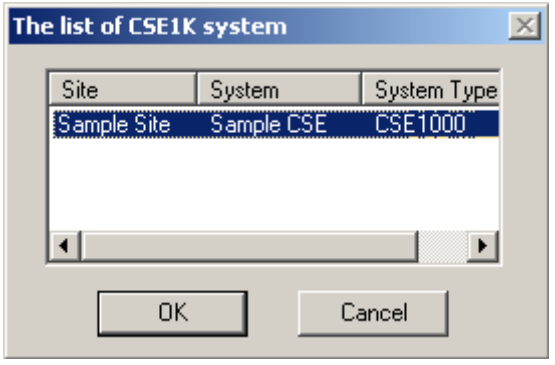
Although a Branch Office is linked to a Succession CSE 1000 Call Server, it is restored up like a separate system. When you restore a Branch Office from either a Full OTM backup or a single Branch Office Backup, the relationship between the Branch Office and its associated Succession CSE 1000 system is recognized. If the Succession CSE 1000 system has been deleted, the OTM Restore Wizard dialog box opens (Figure 126).

Figure 126 Restore Branch Office dialog box



Click Yes. The list of Succession CSE 1000 systems opens (Figure 127).

Figure 127 List of available Succession CSE 1000 systems



Note: When you restore a single Succession CSE 1000 system, its Media Gateways are restored; however, its Branch Offices are not.

Running the Restore utility

To run the Restore utility:

1. Select Restore from the Utilities menu of the Navigator window. This invokes a wizard to help you define the following parameters:
   - Type of restore (single site, single system, all sites and systems, or full OTM backup)
   - Specific backup file and destination directory
   - Temporary directory for working files created during the operation
2. The next screen to appear is a dialog box that summarizes your choices. Click OK to start the restore operation, or click Cancel to return to the wizard and change your options.

Note: When restoring user accounts, if the user group and password information contained in the operating system data is different, OTM does not change the OS data. Instead, a log file is created to inform the administrator of the discrepancies.

LDAP Synchronization

In this section, LDAP server refers to an external corporate directory that is Lightweight Directory Access Protocol (LDAP) compliant. This is a protocol which is used to synchronize data between a master server database and client databases. The information is entered into a database once and then synchronized to populate the other instances of the data. OTM plays the role of an LDAP client in that it can be configured to map certain data fields to a corporate LDAP server. Through the use of synchronization, the data is automatically pushed/pulled between the databases.

The LDAP Synchronization utility synchronizes user data between the OTM Directory, Station Administration data base, and the LDAP directory. LDAP Synchronization is a scheduled activity that runs in the background, or can be performed manually.

OTM supports four types of LDAP servers:

- Netscape Directory

- Exchange Server
- Novell NDS
- Active Directory

Note: Each type of LDAP server supported by OTM has specific constraints regarding the maximum number of characters that you are allowed to enter for a given attribute. Synchronization and update operations may fail if these limitations are not taken into consideration when entering data in the OTM directory.

Note: To deploy LDAP Synchronization, you must be knowledgeable about Directory Server configuration and maintenance, LDAP attribute customization, and how to work with LDAP-enabled applications. Information related to these topics is beyond the scope of this document.

There are two parts to LDAP synchronization:

- LDAP synchronizations are set up and scheduled from the Utilities menu in the Navigator window.
- When a new user is added to the LDAP-compliant external corporate directory, you can manually add the user entry to the OTM directory for the appropriate Meridian 1 or Succession CSE 1000 system. Use the LDAP Synchronization menu in the System window.

Before attempting to set up LDAP Synchronization, you must know the address of the LDAP server, and also values for the Search Root, Bind to Server as, and Password boxes. In addition, you must know the server type and attribute names. OTM must be given the ability to write to the LDAP server.

LDAP Synchronization is enabled for OTM Directory entries that are in the "Published" status. Only entries in the LDAP-compliant external corporate directory that have matching unique identifiers (UIDs) in the OTM Directory are synchronized. You can manually enter the UIDs in the OTM Directory entries or import them using the procedure outlined in "Import and Export utilities" on page 268.

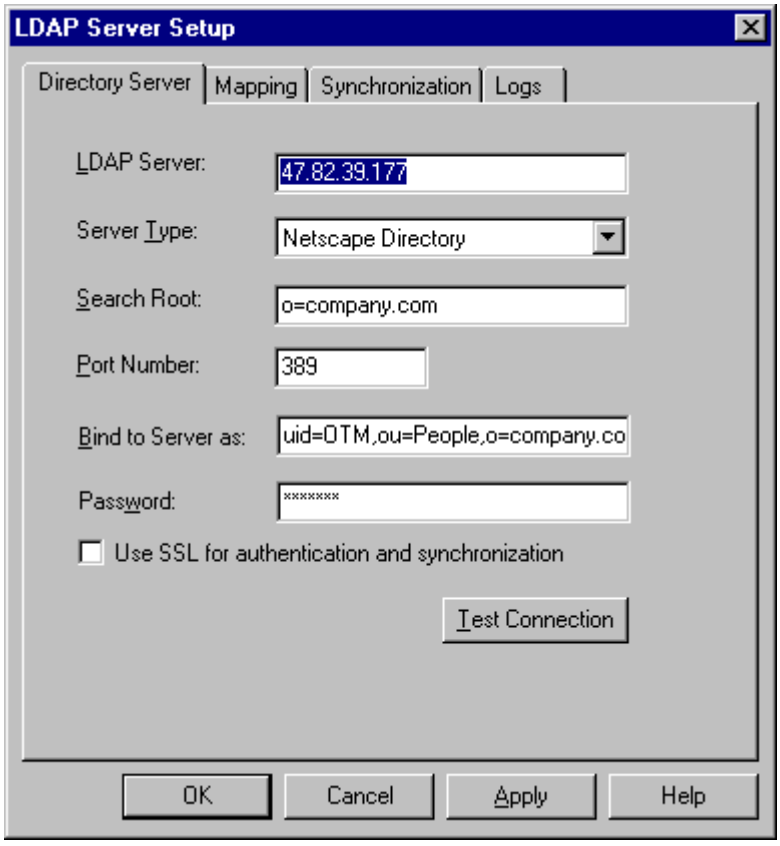
Setting up LDAP synchronization

To access the LDAP Server Setup dialog box:

➔ Choose Utility > LDAP Setup and Logs in the OTM Navigator window.

The LDAP Server Setup dialog box opens with the Directory Server tab displayed (Figure 128).

Figure 128 LDAP Server Setup dialog box—Directory Server tab



Directory Server tab

The Directory Server tab (Figure 128) defines the LDAP Server.

Enter the server information, then click Test Connection to verify the settings.

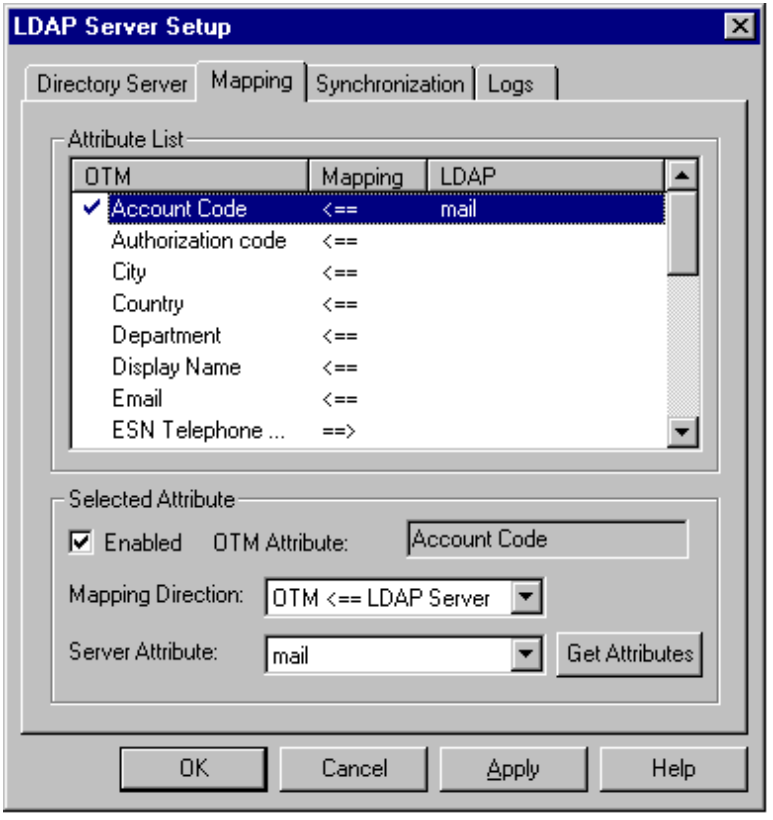
Note: The Test Connections button tests whether the server responds and verifies the LDAP Server IP address and port number only.

Caution: You must click Apply to apply any changes made in the Directory Server tab before selecting another tab.

Mapping tab

The Mapping tab (Figure 129) identifies how the data between the OTM Directory and the LDAP Server is synchronized.

Figure 129 LDAP Server Setup dialog box—Mapping tab



To refresh the displayed attributes on the Server Attribute drop-down menu, highlight one item from the Attribute List, and then click Get Attributes.

Note: You must select an attribute in the Attribute List box before you click Get Attributes in the Selected Attribute box.

To map individual data items, click the OTM data element in the list, select the mapping direction, and select the associated attribute in the LDAP Server. See "OTM fields and LDAP attributes" on page 299 for more information.

Only elements that you enable via the check box are synchronized during the scheduled synchronization periods.

Note: On a new OTM installation, the Display Name field is not visible in the Attribute list. The Display Name is added to the OTM Directory after synchronization with the Meridian 1 or Succession CSE 1000 system. You should perform LDAP synchronization after synchronization with the Meridian 1 or Succession CSE 1000 system.

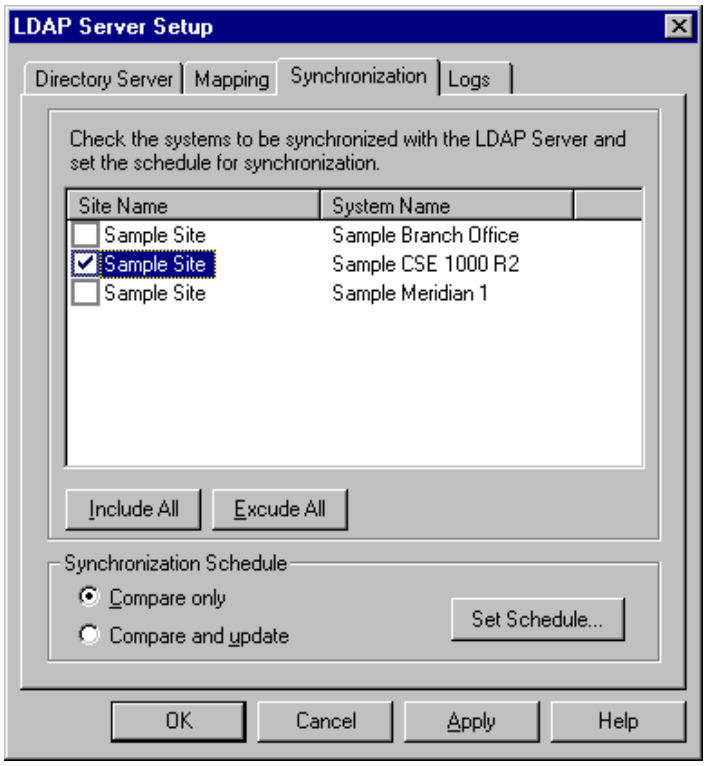
Synchronization tab

Use the Synchronization tab (Figure 130) to schedule the synchronization between the OTM directories and the LDAP Server. The list contains all Meridian 1 and Succession CSE 1000 systems defined in the OTM Navigator.

Note: It is not necessary to schedule a separate synchronization for each site or system. Also, when you add new systems to the OTM Navigator it is not necessary to schedule additional synchronization tasks. Nortel Networks recommends that you modify your existing synchronization task to include the new systems.

Note: If an LDAP synchronization is in the queue and scheduled for a system or systems, and a change in one of the systems is required, change the selection of the systems to be synchronized in the currently scheduled job rather than scheduling a second synchronization. When the synchronization is run at the scheduled time, it will pick up the latest selection.

Figure 130 LDAP Server Setup dialog box—Synchronization tab



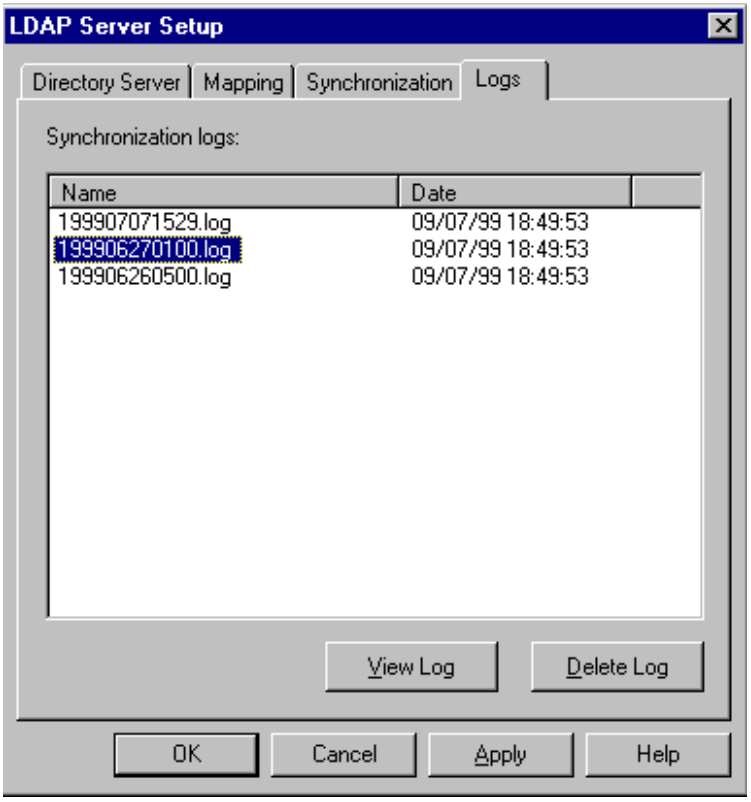
Note: Scheduled synchronization only synchronizes OTM Directory entries for which the "Published" attribute has been enabled. Synchronization also only compares or updates entries that have the same Unique Identifier (UID) between OTM Directory and the LDAP Server. A UID can be manually set up using the LDAP Synchronization Utility (see "LDAP Synchronization Utility" on page 298), or by using the Import / Export capability (see "Importing LDAP ID (UID) Using an Entity's Extension Number (DN)" on page 302).

Check the systems to be synchronized and set the schedule. You can choose to compare the data only, or to actually perform updates.

Logs tab

A background routine performs synchronization at the scheduled time, and stores the results in a log in an OTM directory. The Logs tab (Figure 131) displays the log files. You can open a file for viewing, or delete a file.

Figure 131 LDAP Server Setup dialog box—Logs tab



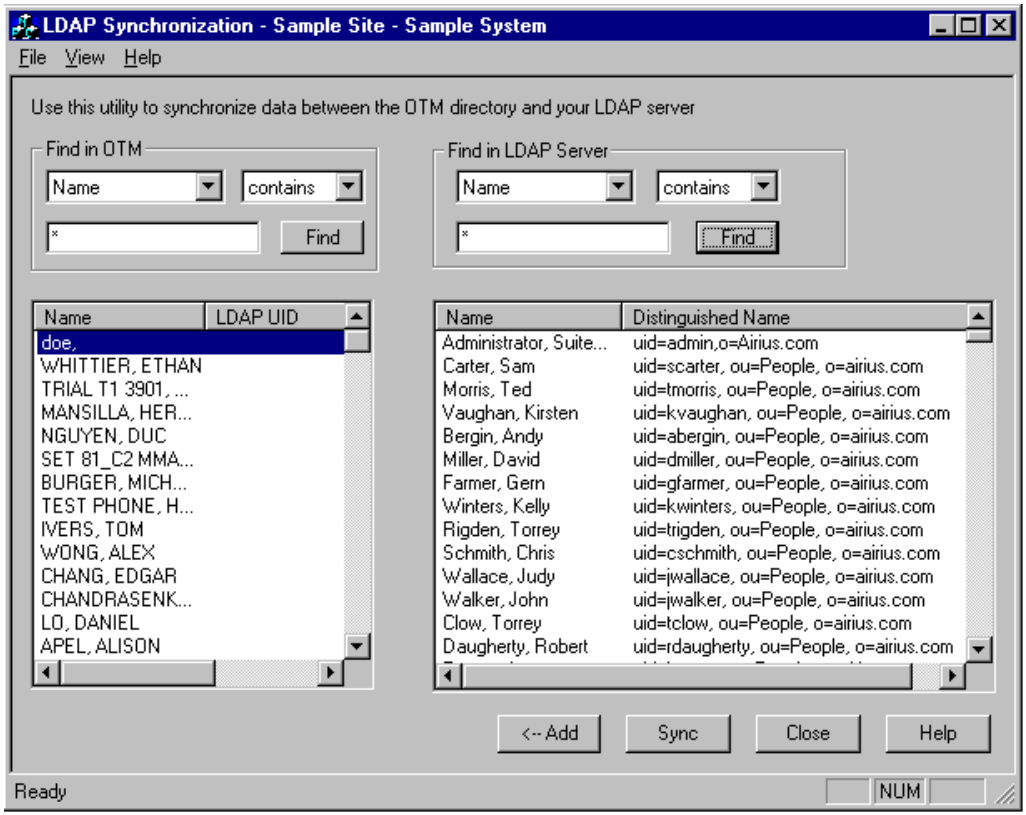
Note: Synchronization results can also be viewed from the Web. See "Sync Tasks and Logs page" on page 339.

LDAP Synchronization Utility

You can use the LDAP Synchronization window (Figure 132) to manually synchronize data between the LDAP Server and an OTM directory. In doing so, you assign a Unique Identifier (UID) for each OTM Directory Entity. To start the utility, double-click on the LDAP Synchronization icon in the System Window.

You can perform manual synchronization when a new employee is added in the LDAP Server and you want to add the employee data into the appropriate OTM directory.

Figure 132 LDAP Synchronization window



To delete a record that you may have added to the OTM Directory in error, you must use OTM Directory Services. See "Delete employees" on page 167 for more information.

Note: The LDAP Synchronization window does not provide a report of success or failure in synchronizing data.

Note: During the synchronization process, you are not provided with a indication of progress. To estimate the time required for the synchronization process, check the start and end times for past synchronizations in the PC Event list.

OTM fields and LDAP attributes

LDAP attributes are mapped to OTM fields during synchronization (or manually by clicking on the Sync button, or at a scheduled time). The fields are mapped according to the configuration set in the Mapping table (see Figure 129).

When you click Add in the LDAP Synchronization dialog box, the LDAP attributes are copied to the corresponding OTM fields.

Note: Only the fields that are mapped from LDAP to OTM are copied when you click Add.

Caution: UID, Last Name, and First Name must be mapped. You receive a warning message when you exit the Mapping tab if they are not mapped.

Table 23 provides the recommended mapping between LDAP Directory attributes and OTM Directory attributes.

Table 23 LDAP recommended mapping

OTM Directory attribute	Allowed mapping direction	Typical LDAP Directory attribute	Comment
Unique Identifier (uid - new directory cross referenced field)	linkage	uid, or cn (Active Directory)	“uid” or “cn” must be entered in the OTM Directory before the synchronization routine can synchronize the entry with LDAP.
Identification (UsrID)	both	employeeNumber, or employeeID (Active Directory)	
Last Name (EmpLName)	both	sn	
First Name (EmpFName)	both	givenName	
Middle Name (EmpMName)	both	Initials	Not mapped by default.
Department (derived)	both	departmentnumber (Netscape, Active Directory), department (Exchange), or orgnaizationalUnitName (Novell)	Department is the end “node” of the organization path in the OTM Directory.
Email (Email)	both	mail	
Manager (ManagedBy)	both	manager (Netscape, Novell)	
	<==	manager (Exchange, Active Directory)	
Job Title (JobTitle)	both	title	
Station Location (derived: site-system-cross reference field)	==>	otmFullPhoneID	Must be present if telephone attributes (extension number, external telephone number, Terminal Number, etc.) are mapped. Telephone Location consists of a “Site-System-PhoneID” string formed from the OTM site and system and the location configured in Station Administration. This allows you to uniquely identify a telephone. This is not a regular field in LDAP. If desired, define as a new field in LDAP for OTM.

Table 23 LDAP recommended mapping (continued)

OTM Directory attribute	Allowed mapping direction	Typical LDAP Directory attribute	Comment
Display Name (NameDisplay) (new cross referenced field)	both	otmTelephoneNameDisplay	This is not a regular field in LDAP. This field contains the display name (CPND) for the Directory Numbers belonging to the user. If desired, define as a new field in LDAP for OTM.
Extension (cross referenced field)	both	otmTelephoneNumber	
External Telephone Number (ExternaltelephoneNumber (derived)	==>	otmExternalTelephoneNumber	Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM.
ESN Telephone Number (ESNtelephoneNumber (derived))	==>	otmESNtelephoneNumber	Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM.
Terminal Number (TelephoneTerminalNumber (derived))	==>	otmTelephoneTerminalNumber	Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM. Typical mapping direction: LDAP to OTM.
Account Code (cross referenced field)	both	otmTelephoneAccountCode	Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM. Typical mapping direction: LDAP to OTM.
Authorization Code (cross referenced field)	both	otmTelephoneAuthCode	Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM. Typical mapping direction: LDAP to OTM.
Street/No (address)	both	postalAdress	Typical direction LDAP to OTM
City (City)	both	l	Typical direction LDAP to OTM
Prov/State (Prov/State)	both	st	Typical direction LDAP to OTM
Country (Country)	both	co	Typical direction LDAP to OTM
Postal/Zip (Postal)	both	postalCode	Typical direction LDAP to OTM

Importing attributes to OTM Directory

Use the Import/Export Utility to import data from external sources to the OTM Directory. The example that follows shows how to import a UID from an LDAP database to a user with an extension number in OTM Directory. You can use the same method to import a UID using other data, such as Manager's Name, E-Mail Address, and so on.

Importing LDAP ID (UID) Using an Entity's Extension Number (DN)

In the following example, the LDAP ID of a user (Bill President) is imported using his extension number (7000).

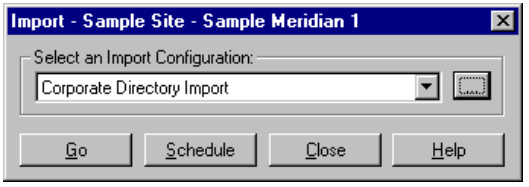
Note: The entity should be the prime owner of the extension for this import to be successful.

1 Create a text file that maps the extension number of the entity to his or her UID. The first row should state the name of the column: in this case, column 1 is Extension, and column 2 is the UID. More records can be added to the file. In this example, the file is named C:\extuidmap.txt, and contains the following text:

```
"Extension", "UID"
7000, bpresldapid
```

2 Launch the Import utility. This utility can be launched from a number of applications. In this example, the Import dialog box (Figure 133) was opened by selecting File > Import... in the Telecom Billing System (TBS) application.

Figure 133 Import dialog box

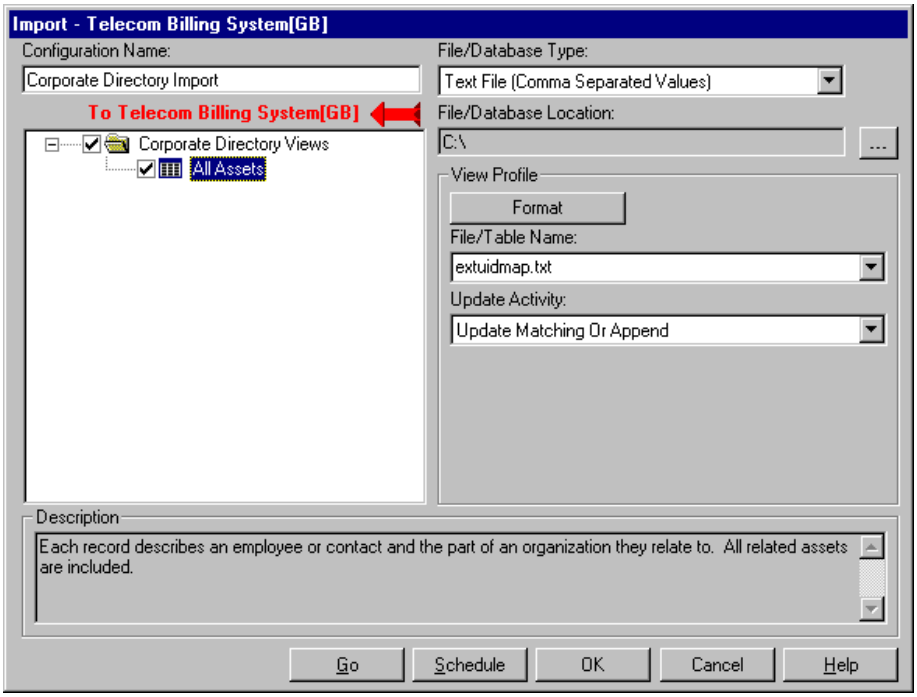


a Select "Corporate Directory Import" from the drop-down list of Import Configurations.

b Click the ellipsis button.

The Import - Telecom Billing System(GB) dialog box opens (Figure 134).

Figure 134 Import - Telecom Billing System(GB) dialog box



3 In the Import - Telecom Billing System(GB) dialog box (Figure 134), select Corporate Directory Views and check the All Assets box.

4 Select Text File (Comma Separated Values) from the drop-down list of available File/Database Types.

5 Click the ellipsis button, and select the File/Database Location. In this example, the file created in step 1 is stored in C:\.

6 Use the drop-down list to select the File/Table Name. In this example, the file is called *extuidmap.txt*.

7 Select Update Matching from the Update Activity drop-down list. This indicates that only records satisfying the search criteria will be updated.

8 Click Format to open the mapping dialog box (Figure 135).

The next steps in the procedure map the extension and UID fields in the corporate directory to the correct columns in the text file.

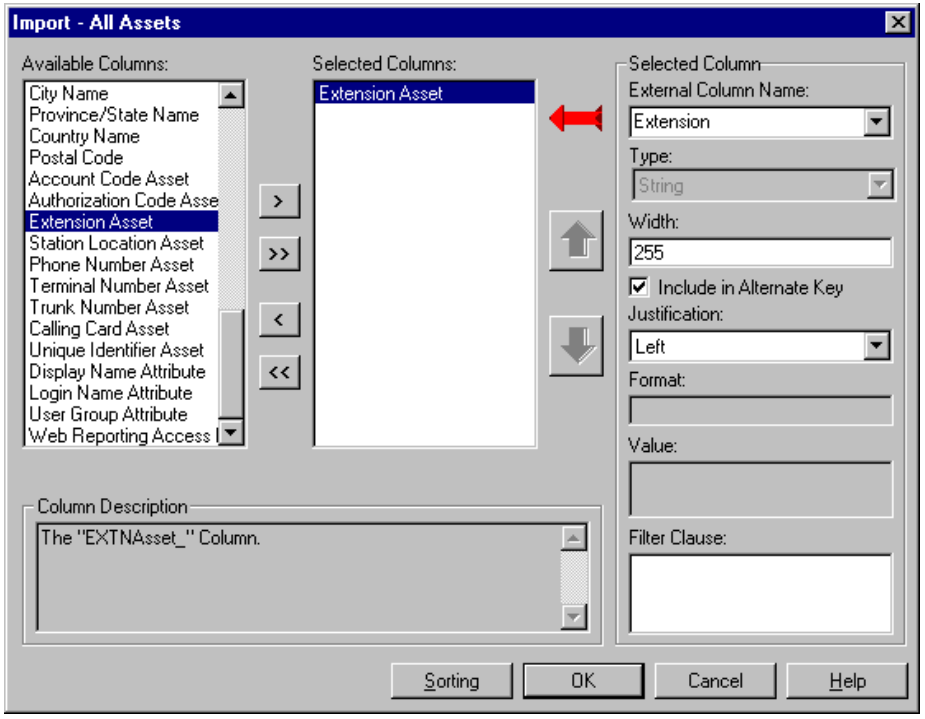
9 Use the left double arrow button to clear the Selected Columns list.

10 Select the Extension Field by clicking the Extension Asset in the Available Columns List, and then clicking the right arrow button. This is the field in the Corporate Directory.

11 To map this field to the column in the text file that was created, select the proper External Column Name. In this example, the first column in the text file was called “Extension”.

12 Check the Include in Alternate Key check box. This indicates that the extension is used as the search criteria. The system adds the LDAP ID to the entity owning this extension (i.e., the Prime Owner).

Figure 135 Mapping extensions and UID field to Corporate Directory

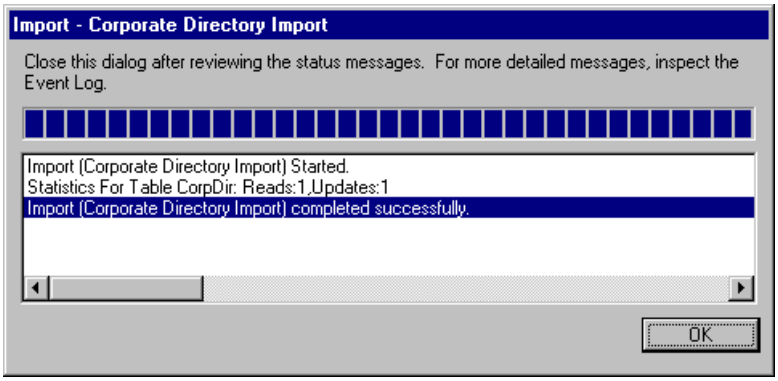


13 Use the same procedure to select the Unique Identifier Asset and map it to the UID External Column Name. Do not check the Include in Alternate Key check box for this field.

14 Click OK to close the dialog box, and click GO in the configuration dialog box (Figure 133 on page 302) to begin the import process.

When the import is completed, the Corporate Data Import summary dialog box appears (Figure 136).

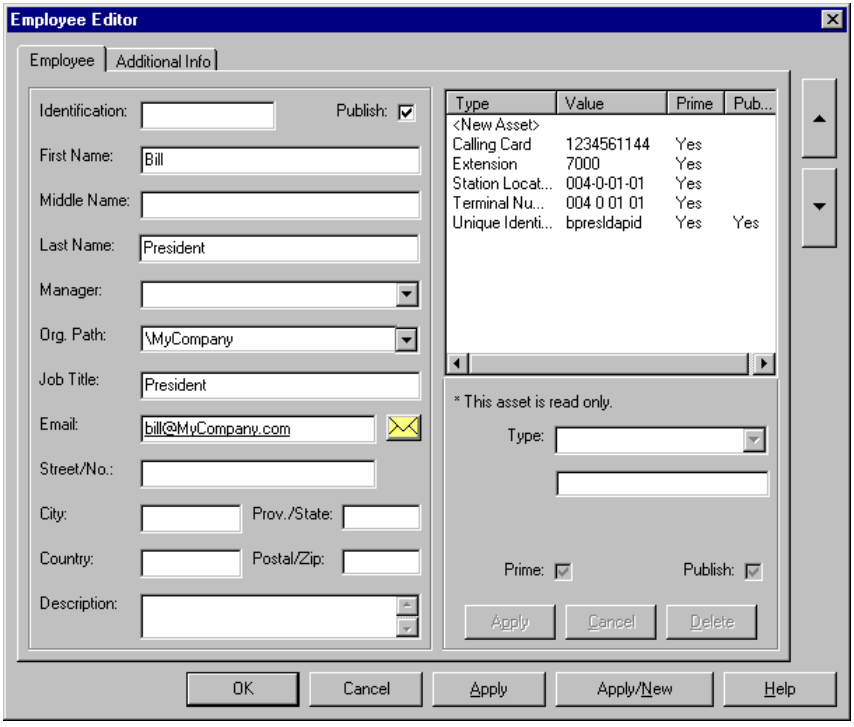
Figure 136 Corporate Directory Import summary



In this example, the summary indicates that one record was read in and one record was updated.

15 The final step is to verify that the Unique Identifier Asset (LDAP ID) was added into the employee record for Bill President. From Station Administration, choose View > Employee Selector. Double-click the record for Bill President, and verify that the Unique Identifier Asset for this employee (bpresldapid) is listed (Figure 137).

Figure 137 Employee Editor dialog box



LDAP troubleshooting tips

Table 24 provides information that you will find useful if you encounter problems in the integration of OTM with your LDAP server.

Table 24 LDAP troubleshooting tips

Problem	Suggestion(s)
Test connection fails	• Ensure that the IP address or Hostname of the LDAP server is correct. • Ensure that Bind to Server as and Password are correct.
Cannot retrieve data from OTM directory	• Ensure that attributes are mapped and enabled.
Cannot retrieve data from LDAP server	• Ensure that Server Type, Search Root, and Port Number are correct.
Cannot update data in LDAP server	• Ensure that Bind to Server as and Password are correct.

Table 24 LDAP troubleshooting tips (continued)

Problem	Suggestion(s)
Data is not synchronized	• Ensure that Publish field is checked. • Ensure that data in OTM and LDAP directories have the same UIDs. (Note that UIDs are case sensitive.) • Ensure that fields are mapped correctly and enabled. • Ensure that Mapping Direction is correct. • Ensure that the Compare and Update field is checked. • Check the log file for details.
Log file does not appear in the Logs tab of the LDAP Server Setup dialog box	• The synchronization logs view does not automatically refresh itself. Update the list of files by closing and reopening the LDAP Server Setup dialog box.

Table 25 provides a list of frequently asked questions related to the integration of OTM with your LDAP server.

Table 25 LDAP frequently asked questions

Question	Answer
How do I verify that the LDAP server information is correct?	Use the Address Book utility in Netscape or the Find People utility in Outlook Express to verify Netscape: 1. Setup LDAP Server: Communicator > Address Book > File > New Directory > Enter LDAP Server details. 2. Perform lookup: Enter search filter in the *Show Name Containing* field and click on the directory name under *Directory* to begin the search. Outlook Express: 1. Setup LDAP Server: Tools > Account > Add > Directory Service > Enter LDAP Server's IP address. 2. Perform lookup: Find > People > Select LDAP Server > Enter Search filter and click the *Find Now* button to begin the search.

Table 25 LDAP frequently asked questions (continued)

Question	Answer
Can OTM sync to more that one LDAP server?	No, OTM is designed to sync to only one LDAP server.
What LDAP version does OTM support?	LDAP v3.
What default I/O port does OTM use for LDAP?	The default port is 389. Your corporate LDAP server may use a different port.
What LDAP directory servers does OTM support?	• Netscape Directory (v3.0 and above) • Exchange Server (v5.5 and above) • Novell NDS (v7.09 and above) • Active Directory (v1.0 and above)
How much network bandwidth does LDAP synchronization use?	The maximum network bandwidth required for LDAP synchronization is 720 Kbps per Meridian 1 or Succession CSE 1000 system. Nortel Networks recommends that synchronization be scheduled to occur once each week during off hours.
Can a third-party server be given direct access the OTM directory?	No, the OTM Server is not LDAP enabled. OTM provides an LDAP client and a sync agent to synchronize with external LDAP servers. It is not possible to use a third-party LDAP client to connect to the OTM directory as you would a real directory such as Netscape Directory.
How do I add new users to the OTM directory?	There are two methods for adding new users: • Manual add from the LDAP Sync Utility • Bulk add through the Import Utility
What file/database types does OTM support for Import/Export?	• dBase IV • Microsoft Excel (v5 and above) • Microsoft Access • ODBC data source • Text file (comma separated) • Text file (fixed width)
How do I create the OTM directory for a new customer?	1. Export the customer's date using one of the supported Import/Export file/ database types. 2. Use the Import Utility to import the data into OTM.

Table 25 LDAP frequently asked questions (continued)

Question	Answer
What Meridian 1 or Succession CSE 1000 services/parameters can I change using LDAP Synchronization?	The LDAP Synchronization Utility synchronizes user data between the OTM directory, Station Administration database, and the LDAP compliant directory. No other parameters are currently supported. For a list of the supported parameters, or attributes, see Table 23 on page 300.
What kind of scripts can I develop for use with LDAP Synchronization?	OTM does not support scripting for LDAP Synchronization.
What LDAP standards based features are supported by OTM?	OTM only supports lookup and synchronization to an LDAP directory using the application tools within OTM.
How can I perform mass changes in OTM?	The Global Update function within OTM allows you to change common data values across multiple stations. Data import/export can also be used to manage large data transactions.
Can I perform mass changes using LDAP Synchronization?	The function of LDAP Synchronization Utility is to keep data aligned, not to import data. When you perform a lookup on an LDAP server and link a subscriber for synchronization, many of the subscriber's properties are copied to the OTM directory; however, this is done one subscriber at a time. The Import/Export utility is better option for bulk import operations.
Does OTM use a proprietary database? If so, can I use ODBC-compliant SQL commands to perform synchronization?	OTM utilizes several databases in its various applications. These databases are not accessible to you except through OTM applications and the Import/Export utility.
How do I use the Import/Export Utility to populate user data in the OTM directory?	1. Use data import to import a set of Last Names and UIDs. For an example, see "Importing LDAP ID (UID) Using an Entity's Extension Number (DN)" on page 302. 2. Pull in all of the remaining attributes during the first sync routine.
I want to synchronize the fields in both directions from LDAP server to OTM and from OTM to LDAP server. Is this possible?	Yes, synchronization in both directions is one of the choices and is configurable for each field. For a list of fields and the recommend sync direction, see Table 23 on page 300.

Table 25 LDAP frequently asked questions (continued)

Question	Answer
Does OTM LDAP synchronization work with CallPilot?	No, CallPilot does not support synchronization with an LDAP server, and does not support LDAP clients as an LDAP server.
I am adding a new messaging system (CallPilot or Meridian Mail). How do I import user information from the OTM Directory to the new messaging system?	1. Use the Import/Export utility to export relevant user data, such as Last Name, First Name, and Department, from the OTM directory to a comma separated file. 2. Edit the file to add the mailbox number for each user. 3. Use the edited file as the data file for importing to CallPilot using the AutoAdd function or to Meridian Mail using the AutoAdmin utility. Refer to the CallPilot or Meridian Mail administration guides for details.

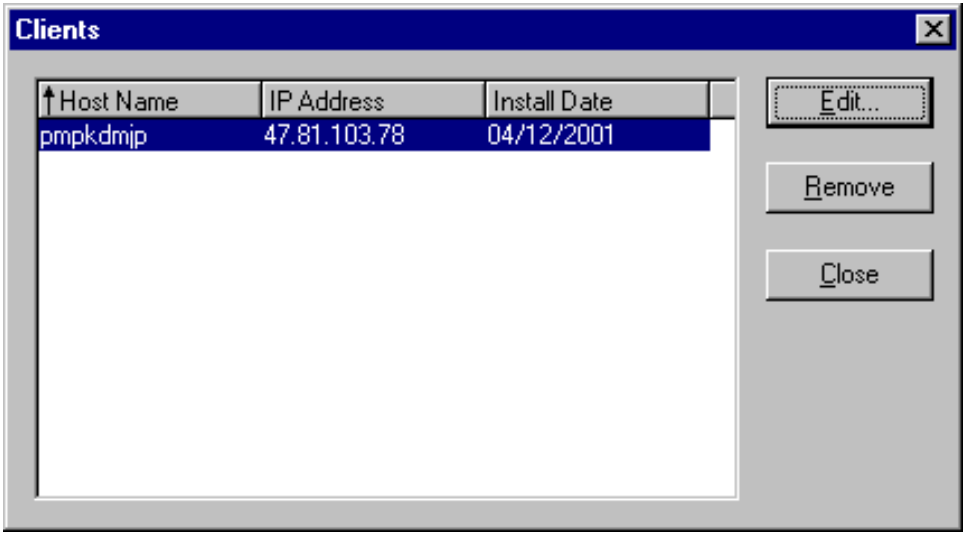
Client Utility

Use the Client Utility to update the OTM database when the host name or IP address of an OTM Client computer has changed. You also use the Client Utility to remove an OTM Client computer from the OTM database when you want to reassign the Client license to a new OTM Client.

To launch the Client Utility:

➔ Select Utilities > Clients in the OTM Navigator window.
The dialog box shown in Figure 138 opens.

Figure 138 Client Utility dialog box



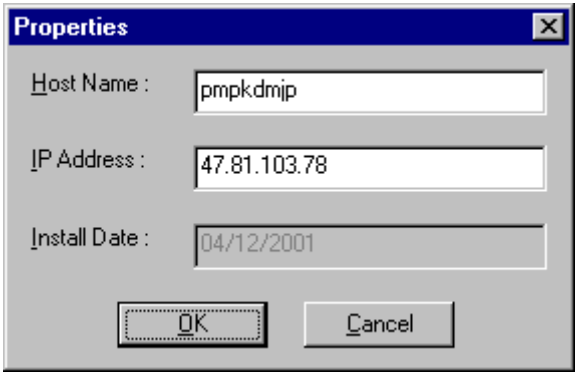
To change the host name or IP address assigned to an OTM Client:

1 Select an OTM Client from the Client Utility dialog box.

2 Click Edit.

The Client Properties dialog box opens (Figure 139).

Figure 139 Client Properties dialog box



3 Edit the host name or IP address as required.

4 Click OK to update the OTM database.

To remove an OTM Client:

1. Select an OTM Client from the Client Utility dialog box.
2. Click Remove.

   A confirmation dialog box opens.
3. Click OK to remove the OTM Client from the database.

Equipment Data Dump

OTM's Equipment Data Dump (EDD) is a critical data base update operation on the Meridian 1 and Succession CSE 1000 systems. This operation dumps (saves) modified data from the switch's resident memory to data base files on the switch's hard disk. These data base files contain the active configuration information for phone-system terminals and users.

Synchronizing and securing data

Use OTM's Station Administration and ESN applications to modify station data, Call Party Name Display (CPND) data, and Electronic Switched Network (ESN) data. OTM stores these changes in its PC data base files. The phone system cannot recognize these changes, however, until you upload the modified data to the Meridian 1 or Succession CSE 1000 system. This operation synchronizes switch data with current OTM data on the PC.

Updating the switch's data is a two-step process. The first step is to transmit modified OTM data from the PC to the switch's resident memory. OTM's Station Administration and ESN applications include a Synchronize menu for this purpose. The second step is to use OTM's EDD feature to dump modified data from the switch's resident memory to the switch's hard disk.

To secure modified data on large, non-Option 11C Meridian 1 systems, you must dump it to the switch's hard disk. Optionally, your distributor technician can set up the switch so that you also dump data to a disk that you insert in the switch's floppy drive.

Power interruptions erase all data in resident memory. When power is restored, switch data is automatically restored from its data base files on the hard disk. Modified data that was *not* previously dumped to these data base files is lost at the switch. Further, this data may be difficult to isolate in the PC's OTM applications, since *all* previously uploaded data shares the same TRN (transmitted*)* status. For these reasons, *always* perform or schedule data dumps after uploading data to the switch.

Accessing EDD

You can access EDD from the File menu of the System window. The EDD selection is called Data Dump. This selection has its own submenu with the options Now, Schedule, and View Log.

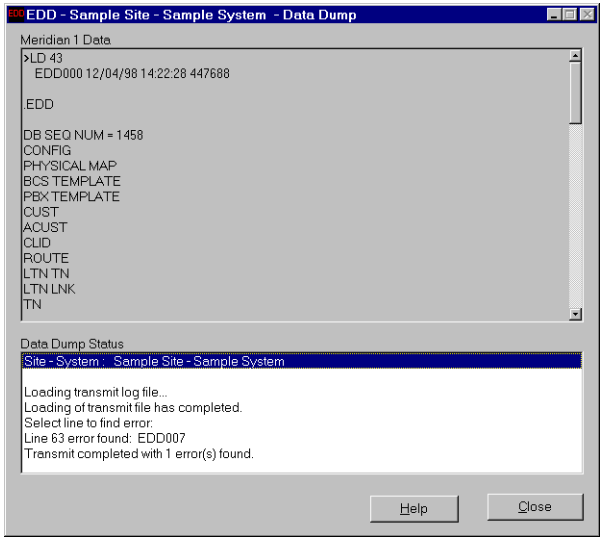
You can select Now to perform the data dump immediately, Schedule to set up the operation to run automatically, or View Log to review status and error information from the most recent data dump.

Note: If you select Now, your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

The data-dump operation takes just a few minutes. While modified OTM data is being dumped at the switch, status and error information about the data dump is actively logged to the PC. Both Now and View Log open the EDD Data Dump dialog box for viewing or reviewing, respectively, this status and error information. This log is saved to the PC's hard disk and each data dump overwrites the existing log file.

Note: To access error information, open the Events window after the data dump, and double-click each error event of interest. This invokes help that is specific to each error.

Figure 140 EDD Data Dump dialog box

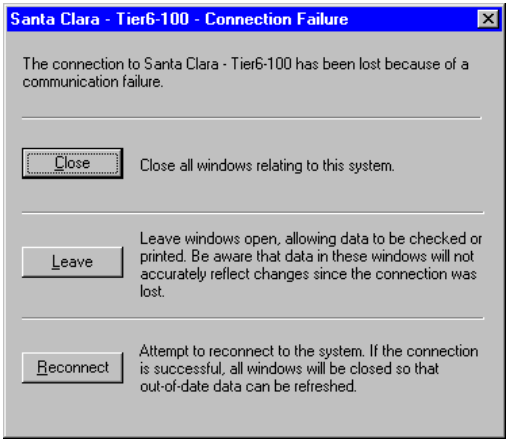


The Schedule option opens the Scheduling dialog box. Here you can select when and how often you want to dump data at the switch. It is best to schedule this operation for a time soon after uploading OTM data to the switch. The OTM Scheduler sends the job to the Queue Manager at the designated time.

Responding to a connection failure

If you are connected to a Meridian 1 or Succession CSE 1000 system and that connection fails, a warning message appears (Figure 141).

Figure 141 Connection Failure dialog box



You are given the following options:

- Close all system windows and reconnect to the system.
- Leave the system windows open so that you can copy or print any or all of the following information:
  - — Command results in the System Terminal window or any open Maintenance window
  - — Alarms or events in the System Event Log
  - — Maintenance window objects, such as network loops within the Network Loops window

Note: When you have finished printing the desired information, close the system window and reconnect to the system.

- Attempt to reconnect to the system.

Chapter 3
Web Services

OTM provides both Web (http) and Microsoft Windows versions of many of its applications. This chapter discusses the Web versions of those applications:

- OTM Web Navigator
- OTM Web Alarm Browser
- OTM Maintenance Pages
- Customizable Web Help
- User Access and Session Monitor pages
- Web System Terminal
- Desktop Services (an end-user application that provides web pages that display the configuration of the user's telephone as well as provide telephone troubleshooting and feature information. With appropriate permissions, the end user is also provided with the ability to change keys and features.)

OTM Web Navigator

Access to the OTM Web Navigator utilizes the users and groups functionality in Windows NT and Windows 2000. User authentication can also be accomplished using Windows NT domain accounts or LDAP. Domain accounts and LDAP authentication are normally used for EndUsers who will be accessing Web Desktop Services to administer their telephones.

The OTM Web Navigator provides the following:

- A list of systems and devices; users click on a system or device to:
  - — Open a Web System Terminal or URL to manage a system or device
  - — Open Maintenance Pages for performing maintenance operations on Meridian 1 or Succession CSE 1000 hardware

- Web-based alarm browser to view alarms and events from multiple systems and devices
- The ability to locate telephones, view and change configuration data
- Web-based Maintenance Pages to perform maintenance operations (enable, disable, etc.) on Meridian 1 or Succession CSE 1000 system hardware
- OTM Web configuration pages (login access, LDAP sync reports, and so forth)

The OTM administrator has the responsibility of installing, configuring, and maintaining OTM Web Services.

User Login and Security

Users log in to the OTM Web Navigator using their Microsoft Windows NT userID and password. Login security for OTM Web Services ensures protection against unauthorized entry and enforces access permissions for logged on users.

There are three categories of users:

- Administrators — OTM administrators
- HelpDesk — OTM Help desk users
- EndUser — OTM end users

In addition, there is a Default user category. Default users are able to successfully log in to the Web Navigator, but they do not have an User Group defined in their Directory record.

OTM administrators and Help desk users have user accounts in a Windows NT domain. End users may have accounts either in a Windows NT domain or through an LDAP server.

OTM administrators and Help desk users can access and change their own telephones through either the Web Navigator or the Desktop Services end user pages. Access to the end user pages requires the appropriate OTM directory setup (user login and user group) for these administrators and Help desk users.

OTM Web application access permissions are controlled by the Administrator on a per-Windows NT user group basis. For example, the administrator may limit the OTM users access to only some of the OTM Web-based functionality. The OTM Web Navigator controls access to applications by shielding Web links that the user does not have access to. The directories and files comprising those applications are similarly protected.

The administrator configures Windows NT user groups and individual users using the Windows NT user interface. The administrator then determines the access permissions for each user group by using the OTM Web Navigator page. For more information about setting user access, refer to "User Groups" on page 359.

Note: As a security precaution, with any upgrade or reinstallation of OTM software, access properties for all user groups are reset to the default values.

When Web Navigator users first point a browser to the OTM Navigator Web site, a check is performed to see if the user has the required OTM Java plug-in. If the plug-in is not installed, the administrator or Help desk user is given the option of downloading and installing the plug-in. This operation is similar to the standard download operations in that the user must download the plug-in to their hard disk then it self installs onto the machine.

While the plug-in check is being performed, the OTM splash screen appears. If the plug-in is installed, or after installation of the plug-in, the user is taken to the login page.

The default OTM URL is the end user login page. To navigate to the administrator login page, place **`/admin`** after the OTM IP address or host name.

Figure 142 shows the OTM Login page. If the login is successful, a blank OTM Web home page appears. If login is denied, an error message appears.

Figure 142 OTM Navigator Administrator Login page

Access properties

When OTM starts for the first time, the Administrator, HelpDesk, EndUser, and Default user groups are the only active user groups. You must assign access properties for any other Windows NT Groups that you have set up on the OTM Server.

Administrator Group access properties

Persons belonging to the Administrators user group on the OTM Server can log in to the OTM Web site and get unrestricted access. The Administrators group has unrestricted access by default. You are not able to alter access permissions for the Administrators user group.

Users of the OTM Administration Site belong to a distinct user group and are assigned the security profile for that user group. For example, the Administrators user group has access to all Web applications.

Note: Important advice for localized operating systems — The name of the administrators user group in the French and German operating systems is not Administrators. These names are localized by Microsoft in the regional operating system software. In a default French installation of Windows NT or Windows 2000, the local administrators user group is Administrateurs. In the German version this user group is Administratoren. When installed on a French or German OS, the OTM predefined administrators user group will be named Administrateurs or Administratoren to match the OS.

User group access rights

The Administrator logs in to the OTM Administration web site and assigns access rights to the other user groups. By default, a member of the Administrators user group has access to all OTM Web Applications. HelpDesk users have access to all applications except those listed under Web Administration. No other user groups have any access to OTM Web Applications unless you specifically grant that group appropriate permissions.

From the User Groups page, you grant or deny access to web applications to a group, not to individual users. To change the security access for individual users, their group membership should be changed. For new groups, the Administrator must assign access rights for web applications before any users from that group can log in. For information about setting user access, refer to "User Groups" on page 359.

With the exception of Administrators, do not place a person in multiple groups. The first group detected by OTM is used to determine access permissions. There is no restriction on the Administrators group. Users may belong to other groups, but if they belong to the Administrators group, the Administrators profile overrides all other profiles.

While assigning access permissions, be certain that you select the top level application for every subapplication that you assign. For example, if you are selecting "System Alarms," you must also select "Equipment." Failure to do so can result in members of the user group being denied access to the web site.

Equipment

The Equipment heading in the OTM Web navigator tree provides links to the OTM Status page, the Web-based System Navigator, and the Alarm browser.

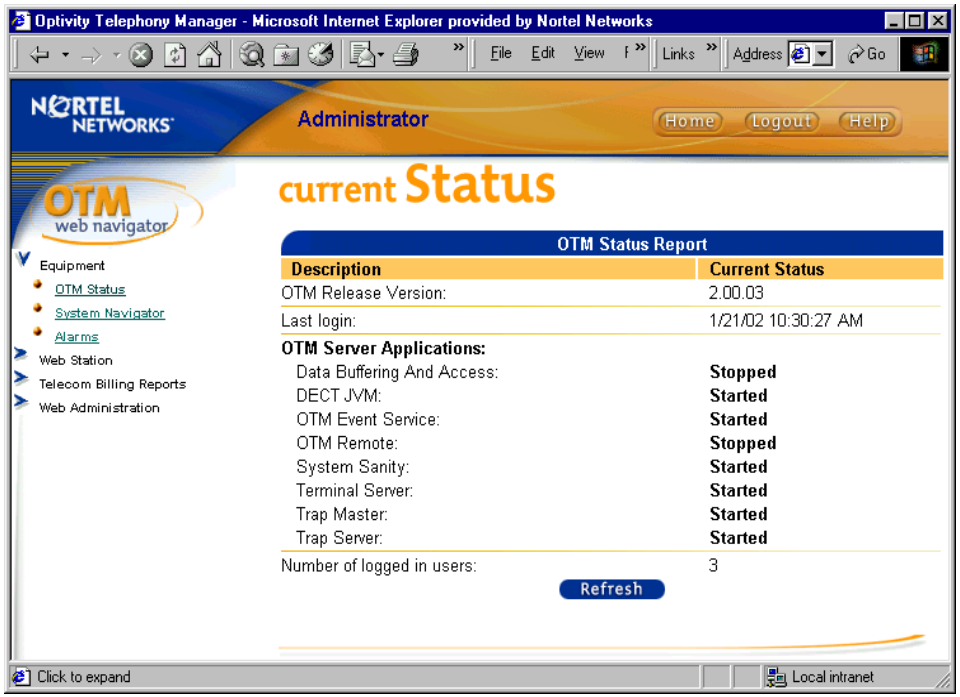
OTM Status

The OTM current status page is shown in Figure 143. As the administrator, you can access this page at any time by clicking Home.

The OTM Status page contains:

- Release version of the OTM software
- Last login date and time
- Real time status of OTM Server applications:
  - Started
  - Running
  - Not Responding
  - Stopped
- Number of logged in users

Figure 143 OTM Status page



System Navigator

The OTM System Navigator page shows the names and types of all systems available to the current user, and allows you to group the systems into sites for more convenient access. Once grouped, the systems can be viewed by site as shown in the example of the OTM System Navigator in Figure 144, or by gatekeeper zone as shown in Figure 145. The sites, systems, and applications shown are dependent on the software packages installed, your security access permissions, and the type of system device you select.

The gatekeepers only appear in the Gatekeepers Zones view. Although primarily used for Succession CSE 1000 systems, Meridian 1 systems can be assigned to a gatekeeper zone. This functionality is intended for Meridian 1 systems that are equipped with ITG applications that support gatekeeper operation.

In the Sites view, Media Gateways appear in the tree under their associated site, as well as under the heading Media Gateways beneath the appropriate Succession CSE 1000 system. Under the Media Gateways heading, the Media Gateway name is composed of the Site name and the system name. If the Call Server and Media Gateway are in the same site, the Media Gateway only appears under the Media Gateways heading of the associated Succession CSE 1000 system.

In the Gatekeeper Zones view, Media Gateways only appear beneath the Media Gateways heading of the associated Succession CSE 1000 system.

In the Sites view, Survivable IP Expansion cabinets appear in the tree under their associated site, as well as under the heading Survivable Cabinets beneath the appropriate Option 11C main cabinet. If the main cabinet and Survivable IP Expansion cabinet are in the same site, the Survivable IP Expansion cabinet only appears under the Survivable Cabinets heading of the associated Option 11C system.

In the Gatekeeper Zones view, Survivable IP Expansion Cabinets only appear beneath the Survivable cabinets heading of the associated Option 11C system.

Note: OTM does not display the survivable status of Media Gateways and Survivable IP Expansion cabinets.

Figure 144 OTM Web Navigator—Sites view

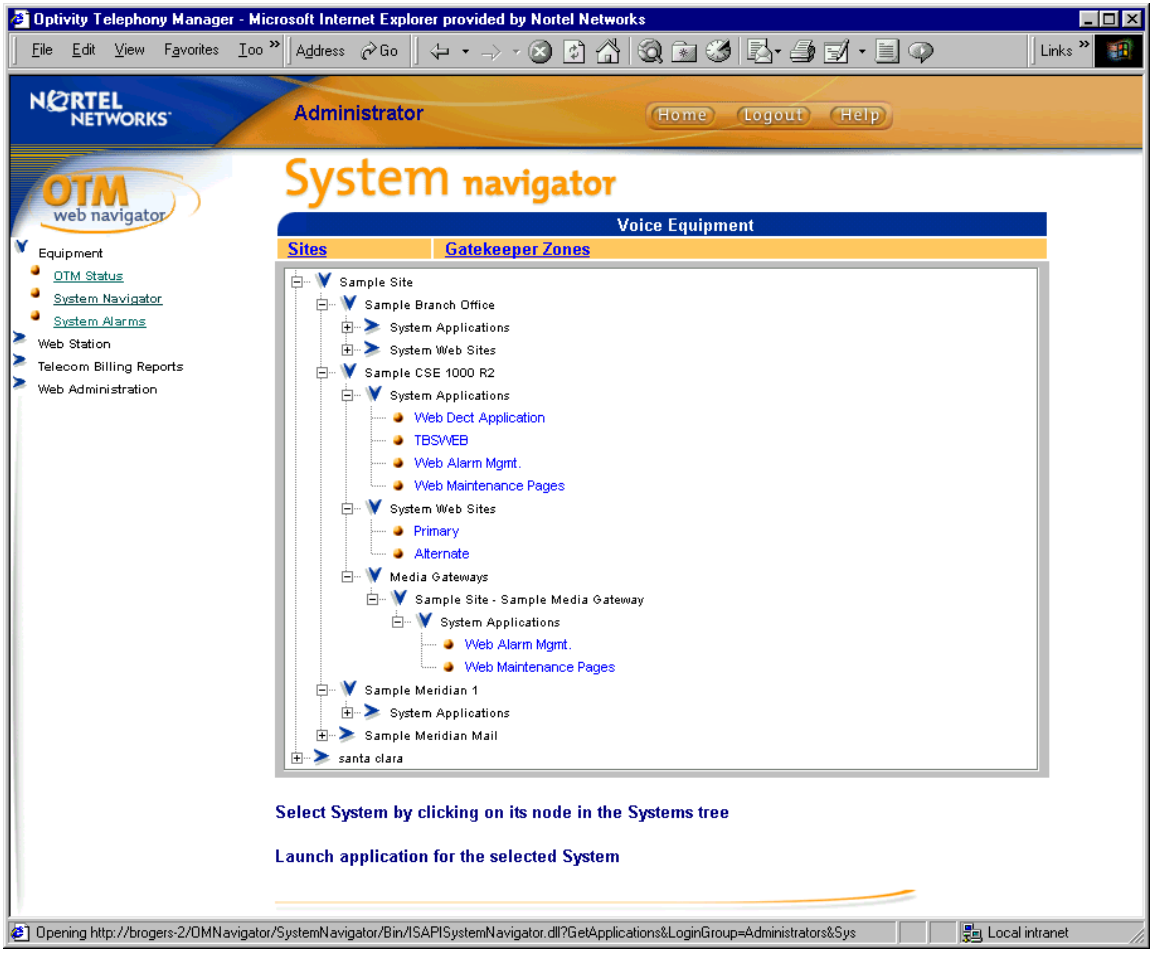
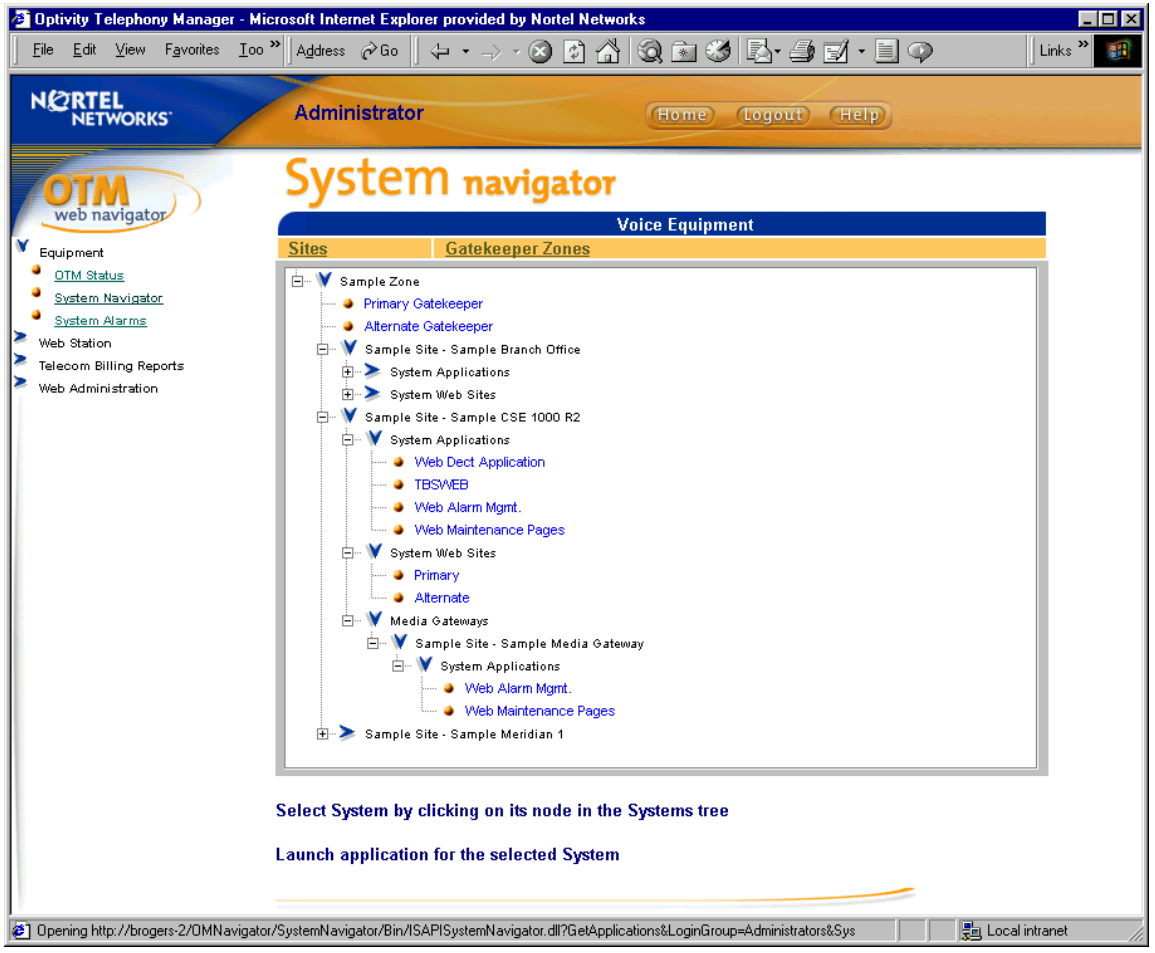


Figure 145 OTM Web Navigator—Gatekeeper Zones view



The OTM Windows Navigator, which uses the Microsoft Windows interface, provides access to OTM's Windows-based features and services. For more information about the OTM Windows Navigator and the features and services to which it provides access, see "OTM Windows Navigator" on page 65.

The OTM Web Navigator allows you to do the following:

- Display a "tree" structure for the Gatekeeper Zones on the network that you manage. Access systems in a particular zone by opening the zone.
- Display a "tree" structure for the Sites and Systems on the network that you manage. Access systems at a site by opening that site.

- Launch Web applications such as Maintenance Pages and the Alarm Browser.

  For Meridian 1 and Succession CSE 1000 systems:

  — Web Dect Application - Launches the Digital Enhanced Cordless Telecommunications (DECT) system management tool. The DECT product is not distributed in North America.

  — TBSWEB - Provides access to the Telecom Billing System Web Reporting application.

  — Web Alarm Mgmt. - Opens the Systems Alarms page with only the alarms for the selected Meridian 1 or Succession CSE 1000 system displayed.

  — Web Maint. Windows - Opens the Web-based Maintenance Pages application.

  — Web Common Services - Launches a web-based Virtual System Terminal connection to the overlays and includes online Help.

  For generic systems:

  — Web-based Telnet connection.

  — Management URL for the system.

  — Alarms for the selected system. This opens the Systems Alarms page with only the alarms for the selected generic system displayed.

Note: Double-click the System Applications to launch the associated OTM Web application in a new browser window (for example, double-click on Web Maint. Windows to launch Maintenance Pages).

Note: Double-click the System Web Sites to launch the element management web pages on the associated Signaling Server.

Note: Double-click a Gatekeeper to launch the associated management web page.

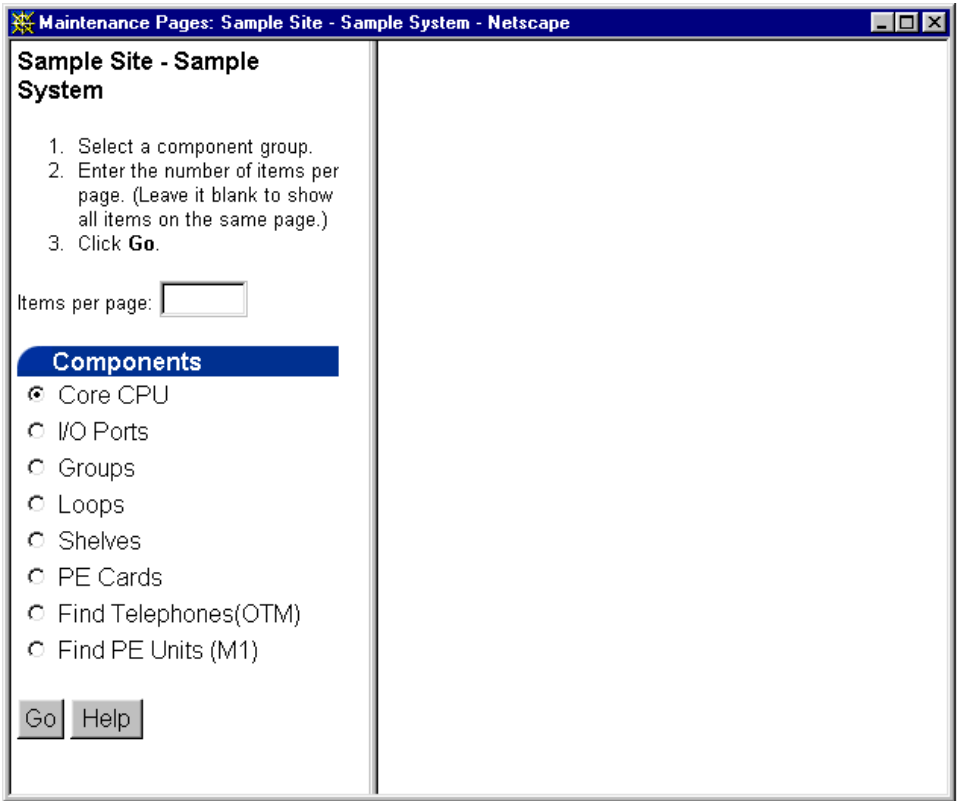
The list of applications is determined by the OTM System Properties in the OTM Windows Navigator and the Virtual Terminal Setup. See “OTM Web Virtual System Terminal” on page 370.

Note: The dongle on the OTM Server is checked each time a user attempts to launch an OTM Web application. If the user login fails because the dongle is missing, the message “Login failed because the OTM Server is missing the required security device” appears.

Web Maintenance Windows

You can use Web Maintenance Windows to perform maintenance operations on Meridian 1 or Succession CSE 1000 system hardware. To launch Web Maintenance Windows, click the “Web Maint. Windows” link under the target system on the System Navigator page. Figure 146 shows the browser page that opens when you launch Web Maintenance Windows. For more information on OTM Web Maintenance Windows, See “Web-based maintenance” on page 741.

Figure 146 Maintenance Pages



Alarms

The Alarm browser page contains a list of alarms received by the Alarm Manager Service running on the OTM Server. The list contains alarms and events from multiple systems and devices. You can perform the following actions:

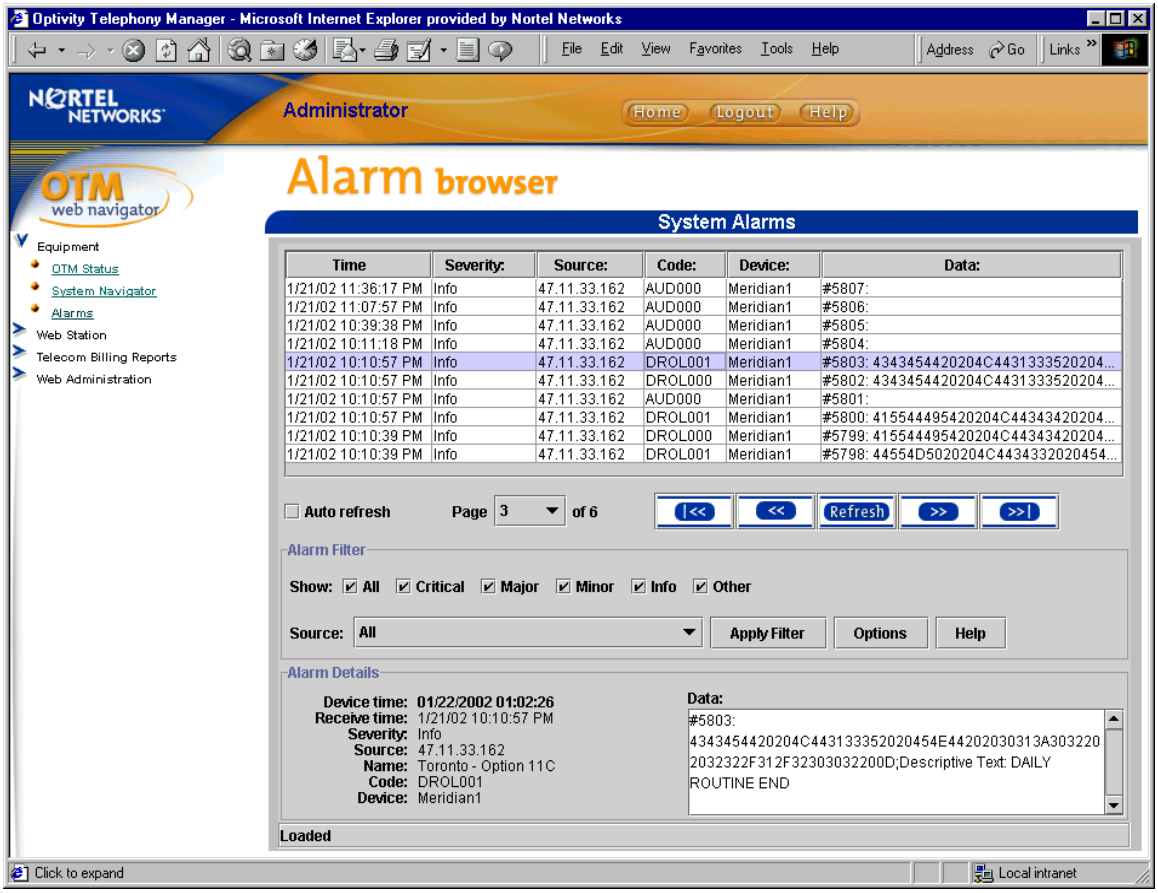
- Sort the alarms by clicking on a column header.
- Resize the columns.
- Filter the list via the Show check boxes.
- Page through the list via the First/Last/Next/Previous buttons, or use the Page drop-down box to jump to a particular page.
- Set the auto refresh interval.
- Double-click an alarm for help.

- Single-click an alarm to view full alarm details in the Alarm details pane.

Note: Access to the Alarm browser page is controlled at the Web Navigator level for each User Group. The users in the User Group either have access to the alarms for all monitored devices, or no access to alarms.

See Chapter 5, “Alarm management,” on page 653 for more information.

Figure 147 OTM Alarm browser page



Web Station

The Web Station heading in the OTM Web navigator tree provides links to the Telephones pages, the Directory Update page, and the Sync Tasks and Logs page.

Telephones

The Telephones pages are used to find a telephone or a group of telephones and perform administrative tasks on them. Use the Find Telephones page to locate the telephone(s) that you want to administer. The results of the Find operation appear in the Find Results page. From the Find Results page, you can access the telephone pages for an individual telephone.

Find Telephones page

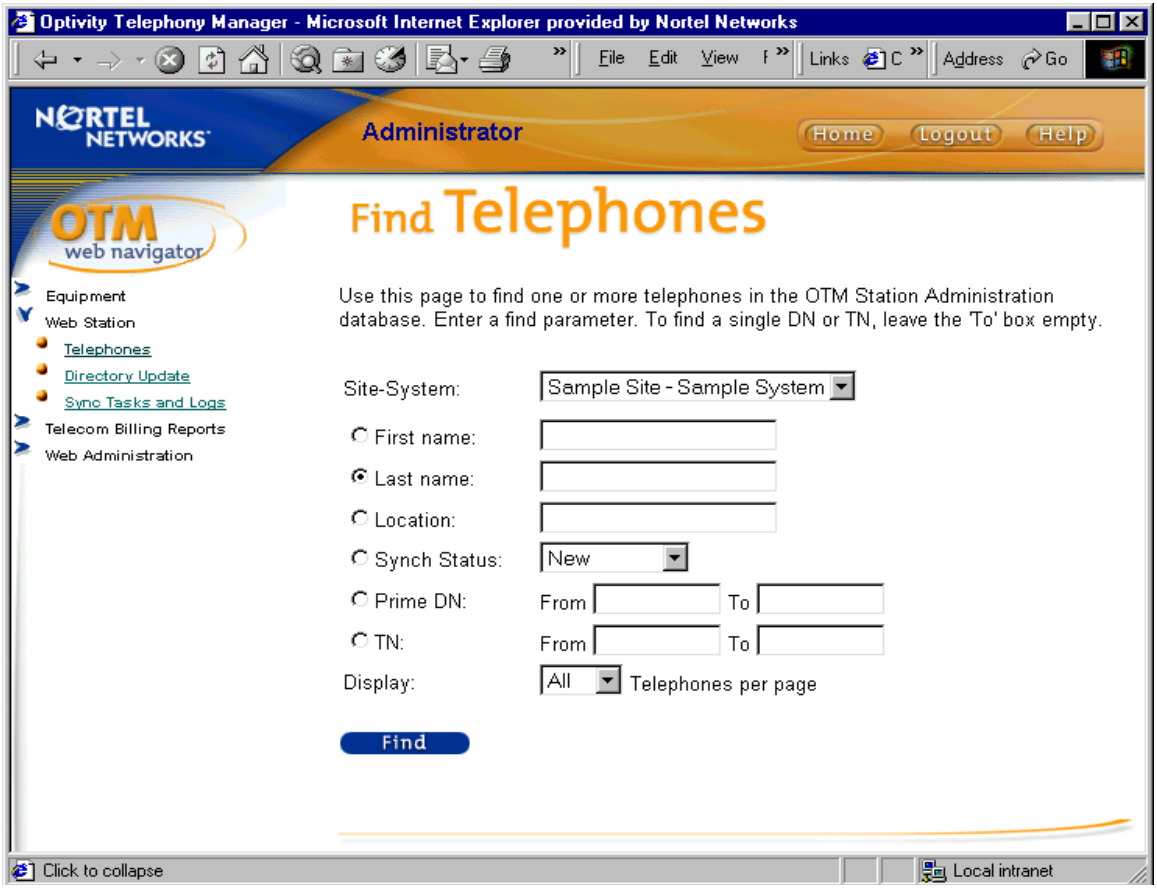
The Find Telephones page (Figure 148) allows you to search for telephones in the OTM station database. If allowed by the system administrator, other user groups, typically HelpDesk users, may also have access to this page. See "User group access rights" on page 321. To launch the Find Telephones page, click the Telephones link located under Web Station in the OTM Web Navigator tree. Select a system, and enter the desired search criteria. The search returns a list of telephones.

- The drop-down list of systems contains all Meridian 1 and Succession CSE 1000 systems supported by this web site. The list contains both the site and system names as defined in the OTM Windows Navigator.
- The station database search only retrieves Prime DNs.
- The default search is by Last Name.

Note: Leave the text box empty to perform a find all operation. Do not use the wildcard character "*" as you do in Directory Update.

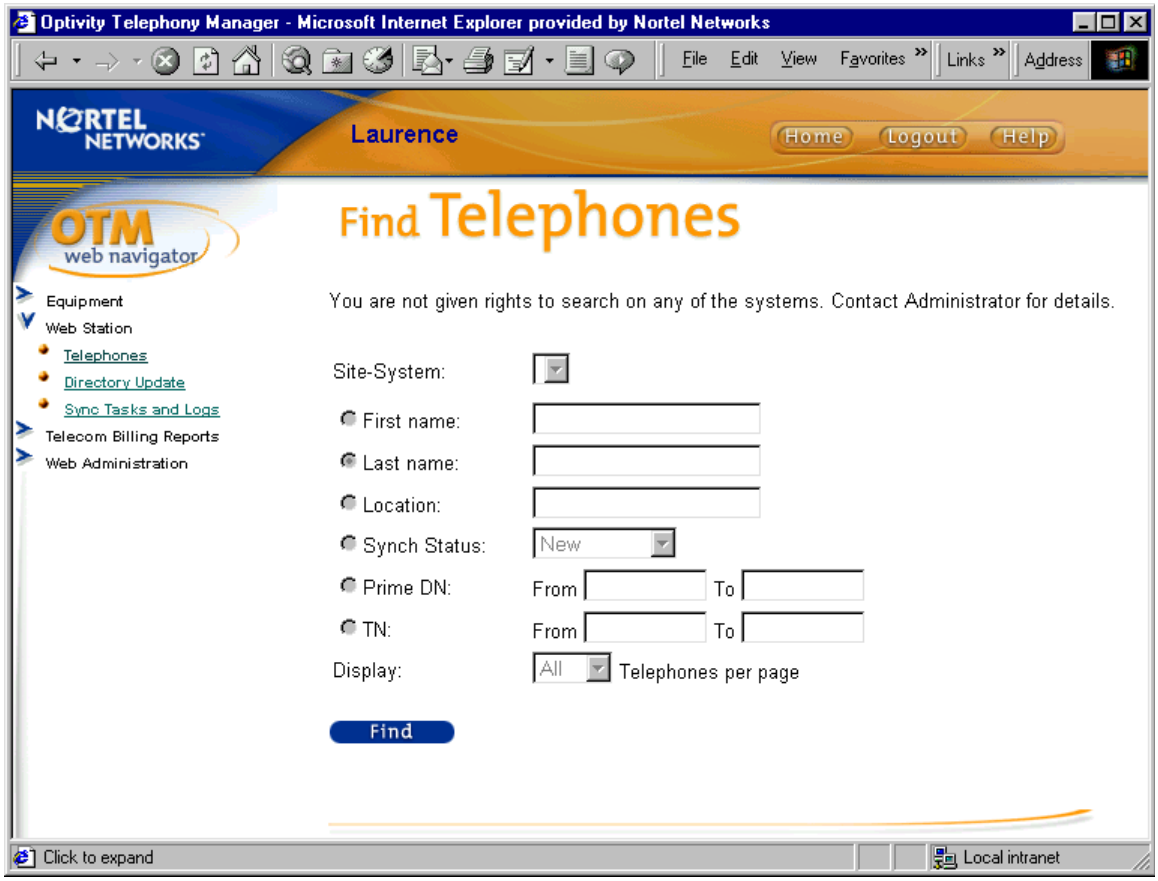
Note: Telephones is a Web Navigator level application; however, access to particular sites and systems can be controlled at the User Group level. To accomplish this, set the Telephones application to "ReadWrite," and set the Web Station application for each site-system to "ReadWrite" or "Access Denied," as appropriate. The systems for which access is denied do not appear in the Site-System drop down list.

Figure 148 OTM Administrator Find Telephones search page



If a user group has access to the Find Telephones page but does not have access to the Web Station Admin application for any system, the Find Telephones page appears (Figure 149). All elements are disabled and a message at the top of the page explains the problem.

Figure 149 Find Telephones page with no system access



Find Results page

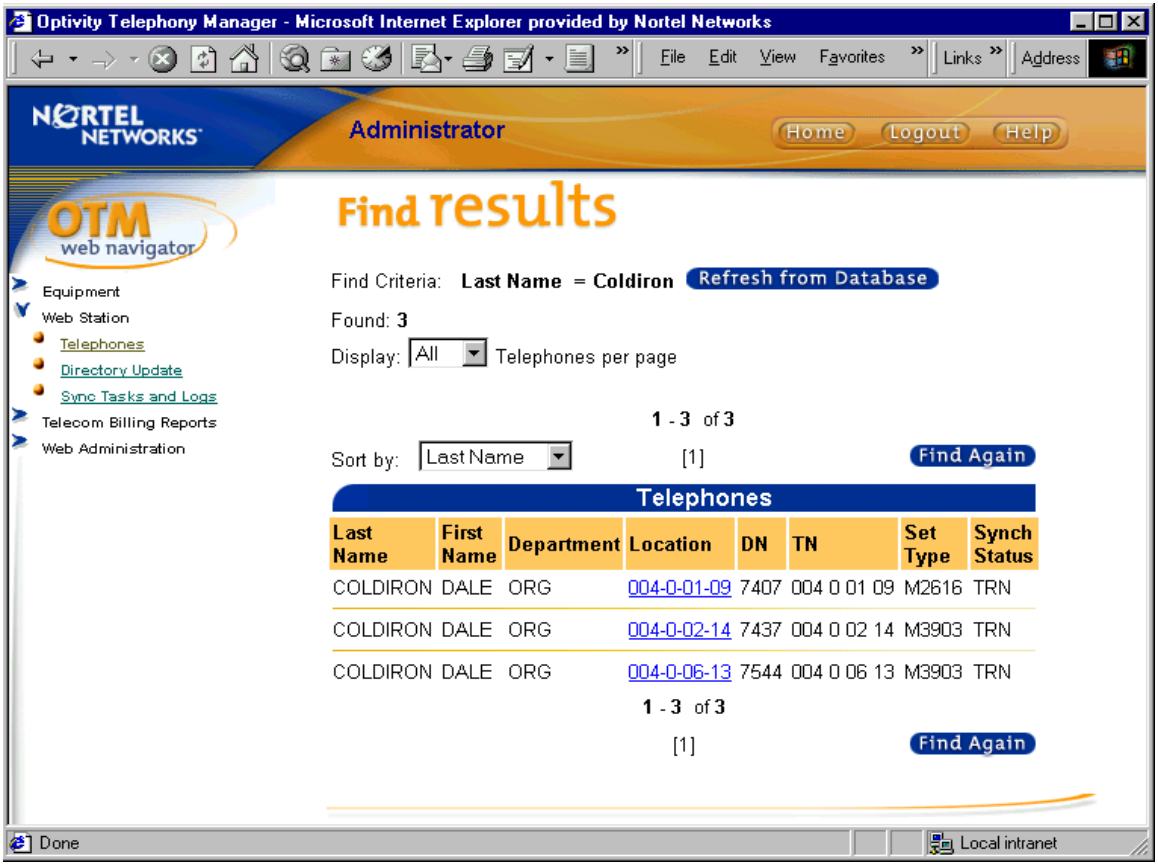
The Find Results page displays the list of telephones matching the search parameters.

- By clicking on the Location link, you open up a new browser window, which displays the Telephone pages for the telephone set. These are the same pages that appear when a desktop user displays his telephone using Web Desktop Services (see "Web Desktop Services" on page 381).
- Above the results, the number of items found and the numbers associated with the currently displayed items appears.

- You can sort on any field via the “Sorted by” drop-down list. When you select a new sort, the results appear starting at the first page.
- Click Find Again to go back to the Find Telephones page.
- If there are no telephones matching the search parameters, a “Found None” message appears with a Find Again button (that takes you back to the Find Telephones page).

Note: After you modify a telephone’s location on the General page in the Telephone pages, you should click Refresh from Database on the Find Results page. This updates the Location information and the HTML link to the Telephone pages. See “Telephone General page” on page 394.

Figure 150 OTM Administrator Find Telephones results page



Directory Update page

This page is used to perform global changes on the following OTM Directory fields:

- User Group
- Login
- Reporting access group
- Publish status

The User Group field determines the degree of access that the user has to the Desktop Services Web pages, as well as to Windows and Web-based OTM applications. You may set the User Group field to Administrators, HelpDesk, Default, EndUser, or to any customized user group that you may have configured in OTM. For information on the degree of access provided to the different user groups, see "User Groups" on page 359.

The login field is the user's Windows NT login name. When the user logs in to the Desktop Services web pages, OTM validates the login with Windows NT. If login is successful, OTM looks up the user's Desktop User Group field in the OTM Directory to determine which telephone features to display.

The reporting access group field determines the user's access to the Web reports feature in Telecom Billing Services. You may set this field to All, Peer, Managed, Personal, or No Access. See "Telecom Billing Services" in *Using Optivity Telephony Manager Telemanagement Applications* (553-3001-331) for information on the Web reports feature.

The Publish status field determines whether information on an employee or entity in the OTM Directory is synchronized with the LDAP server. Only employees who are published are synchronized with the LDAP server.

To make a Directory update:

1 Click Directory Update, which is located under Directory in the OTM web navigator tree.

The Directory Update page opens (Figure 151). Use this page to select the Meridian 1 or Succession CSE 1000 system and to find the directory entries that you want to change.

Note: If a user group has access to the Directory Update page but does not have access to the Web Station Administration application for any system, the Directory Update page appears (Figure 152). All elements are disabled and a message at the top of the page explains the problem.

Figure 151 Directory Update - find entries

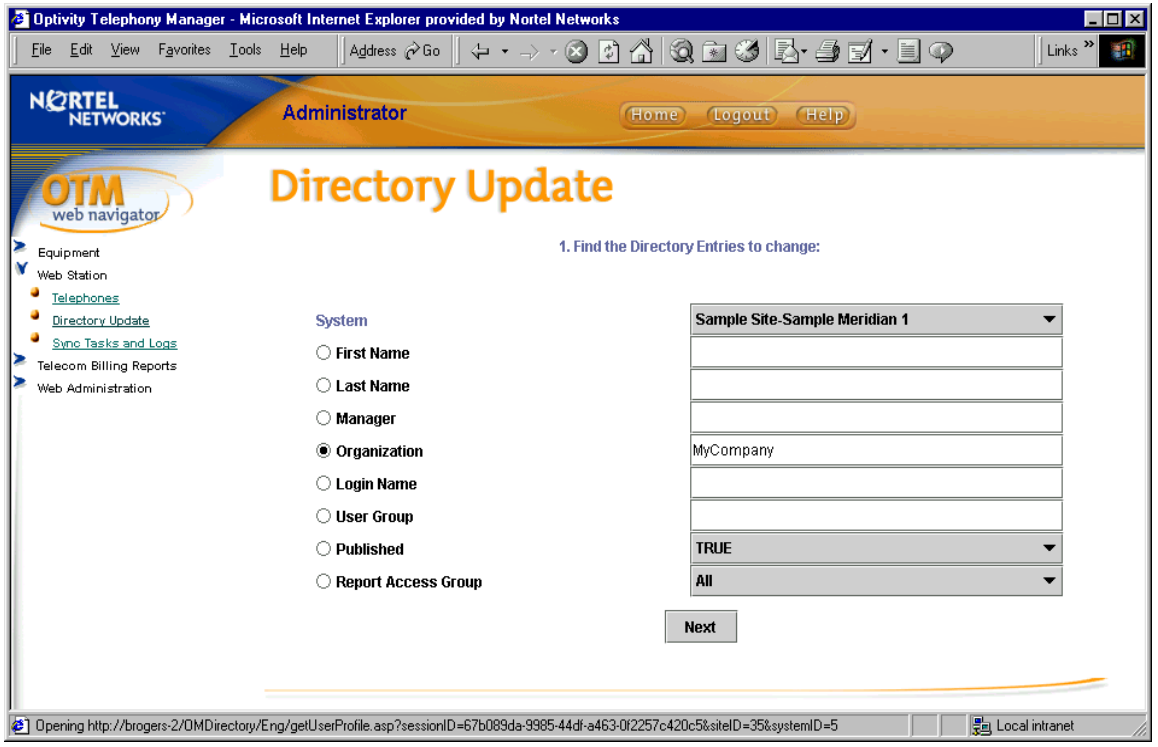
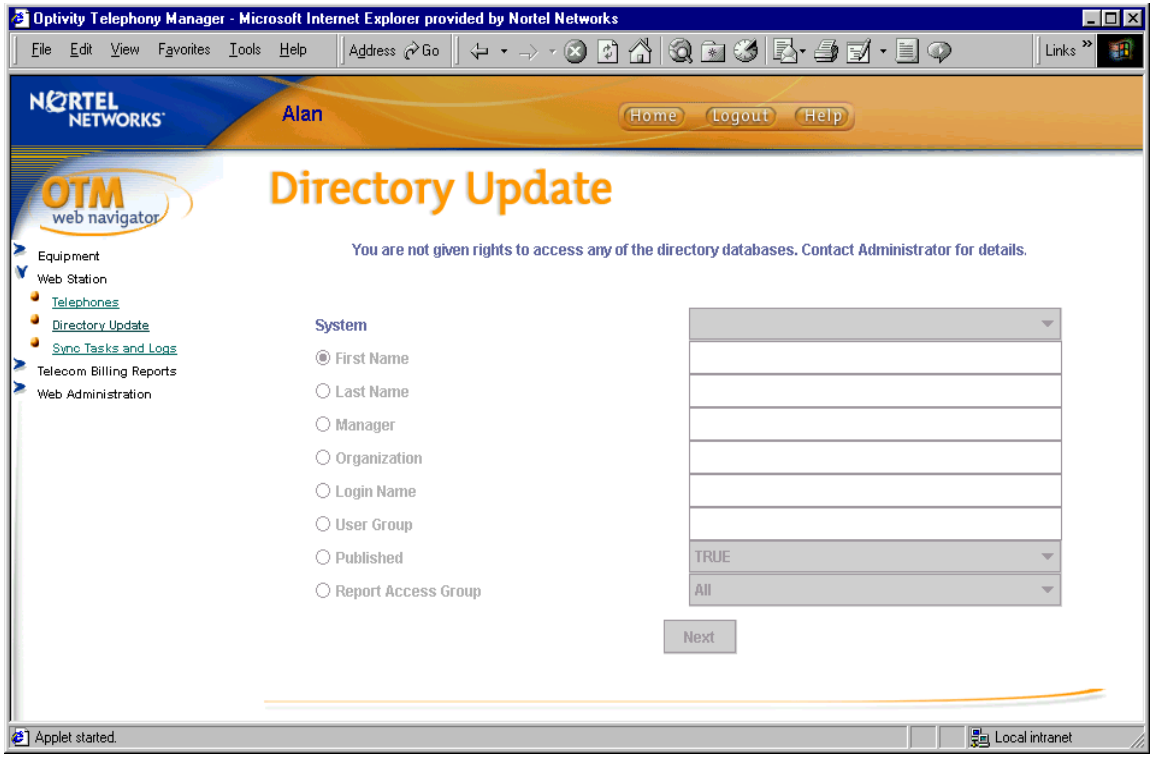


Figure 152 Directory Update with no system access



2 From the drop-down menu, select the Meridian 1 or Succession CSE 1000 system that contains the directory that you want to update.

3 Click the radio button next to the field that you want to use as your search criteria. Only one field may be selected for each search.

4 Based on the search criteria selected in step 2, do one of the following:

- Enter a first name in the First Name edit box.

Note: You may enter the wildcard character "*" in the fields with edit boxes. For example, both jo* and j*h find directory entries with the first name John.

- Enter a last name in the Last Name edit box.
- Enter a manager's name in the Manager edit box.
- Enter a user's login name in the Login Name edit box.

- Enter a user group in the User Group edit box.
- Select True to find all published employees, or select False to find all private employees in the Published drop-down menu.

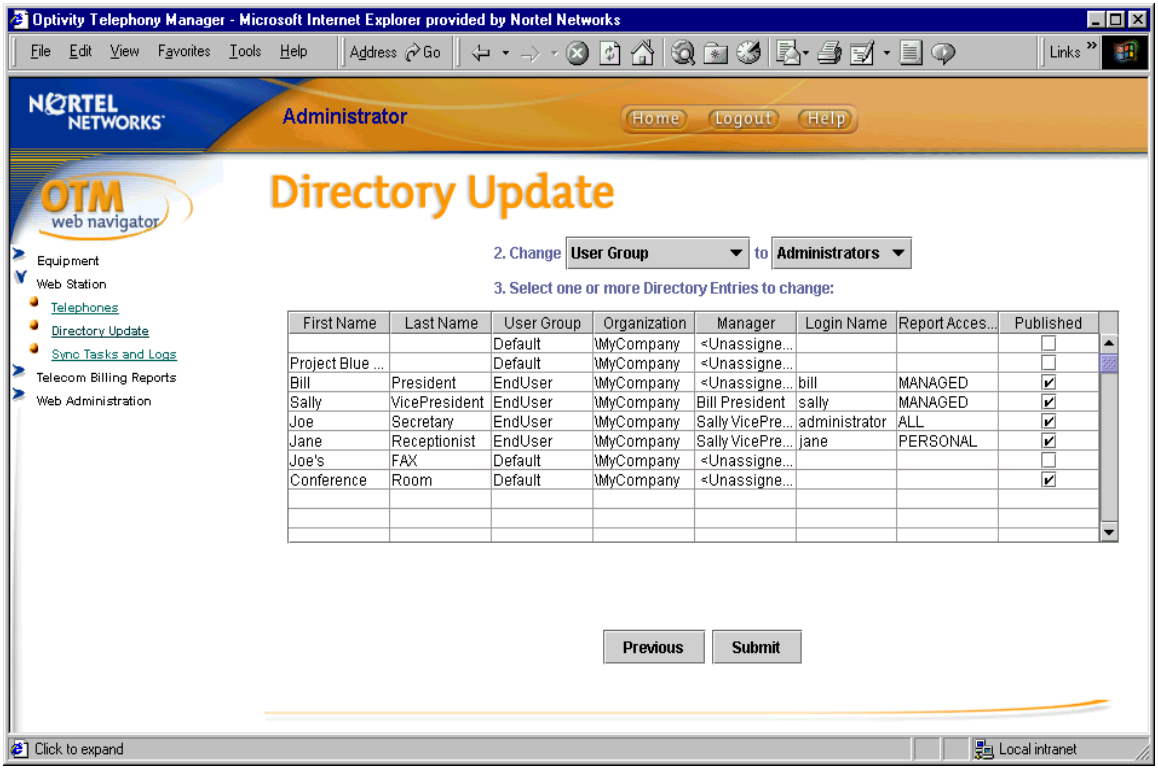
Note: The publish flag is supported for employees only. Directory update does not support the publish flag for an entity's assets.

- Select an access level from the Reporting Access Group drop-down menu.

5 Click Next.

The Directory update page opens (Figure 153). Use this page to set the new value and select the directory entries that you want to change.

Figure 153 Directory Update - set value



6 From the Change drop-down menu, choose the field that you want to change.

7 Based on the field selected in step 6, do one of the following:

- Enter a user group.
- Enter a login name.
- Select a reporting access group, All, Peer, Managed, Personal, or No Access.
- Select a publish status, Published or Not Published.

8 From the table of Directory entries, select the entry or entries to change.

Note: The table only supports shift-click for multiple selections; therefore, you can only select a contiguous block of entries.

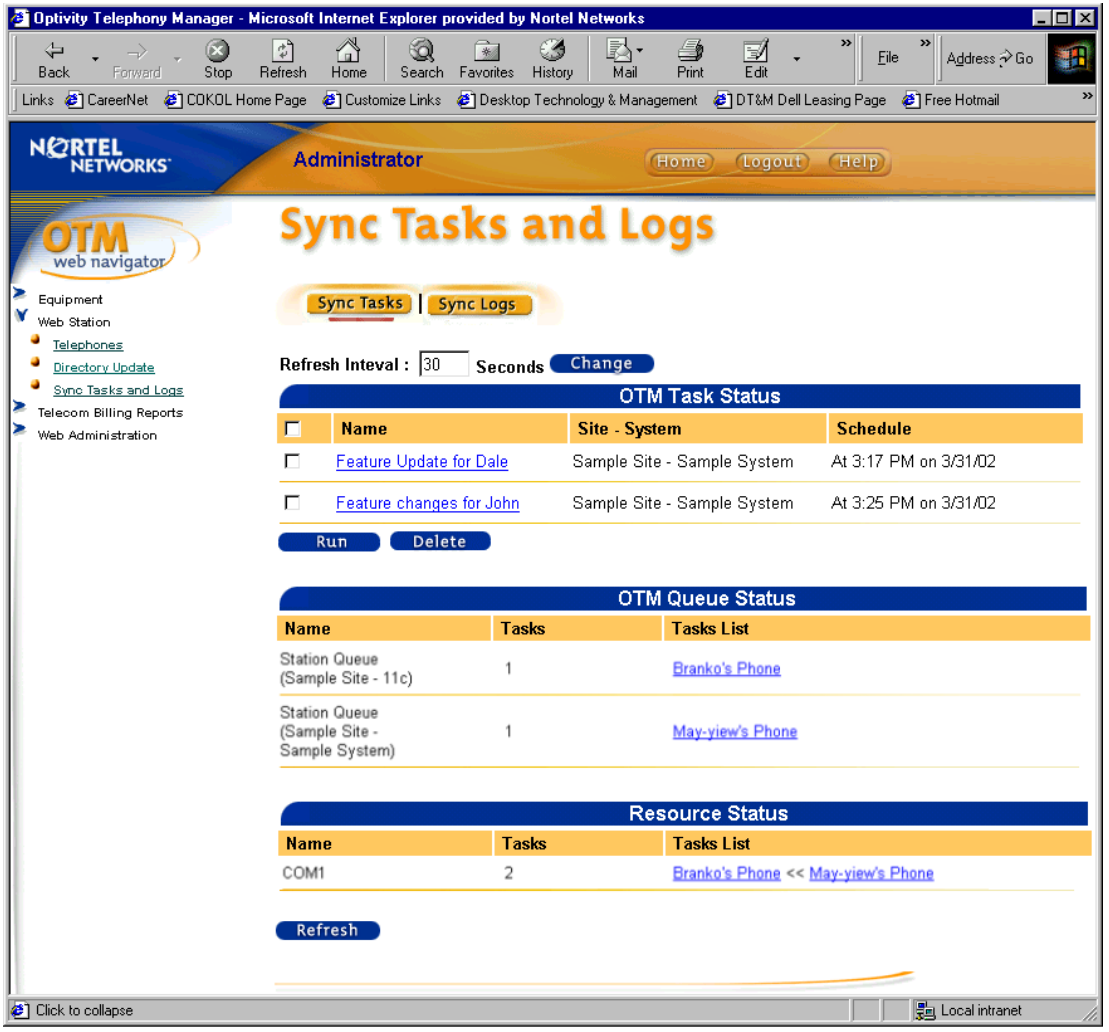
9 Click Submit to make the change.

Note: To make the same change for entries in the table that are not contiguous, go back to step 1. The search criteria from the previous change are retained. Click Next. Select a second block of contiguous entries, and click Submit.

Sync Tasks and Logs page

Sync tasks are used to synchronize changes made in Web Station with the information that is stored on the Meridian 1 or Succession CSE 1000 system. This synchronization process is not related to the sync tasks in Windows Station Administration. Click the Sync Tasks and Logs link under Web Station to open the Sync Tasks and Logs Web page. The page contains two tabs, Sync Tasks and Sync Logs. When the page opens, it defaults to the Sync Logs tab (Figure 154).

Figure 154 Sync Tasks and Logs page—Sync Tasks tab



Sync Tasks

The Sync Tasks page is divided into three sections, OTM Task Status: OTM Queue Status, and Resource Status. Since tasks and queue status are dynamic in nature, this page is set to automatically refresh every 30 seconds.

To refresh the page immediately:

➔ Click Refresh at the bottom of the page.

To change the refresh interval:

1 Enter a new interval time in the Refresh Interval text box.

2 Click Change.

Note: Click Change to refresh the page.

Note: The new refresh interval is valid for the current user login session.

OTM Task Status

The upper section of the Sync Tasks page contains the OTM Task Status table. The OTM Task Status table lists the pending sync tasks that have been scheduled using Web Station. From OTM Task Status, you can run a task ahead of its scheduled time, or you can delete pending tasks.

To run a task ahead of its scheduled time:

1 Click the check box in the left column for the task or tasks that you want to run.

Note: You can choose all of the tasks with a single click by clicking the check box in the column header.

2 Click Run.

To delete a task:

1 Click the check box in the left column for the task or tasks that you want to delete.

Note: You can choose all of the tasks with a single click by clicking the check box in the column header.

2 Click Delete.

Task Details

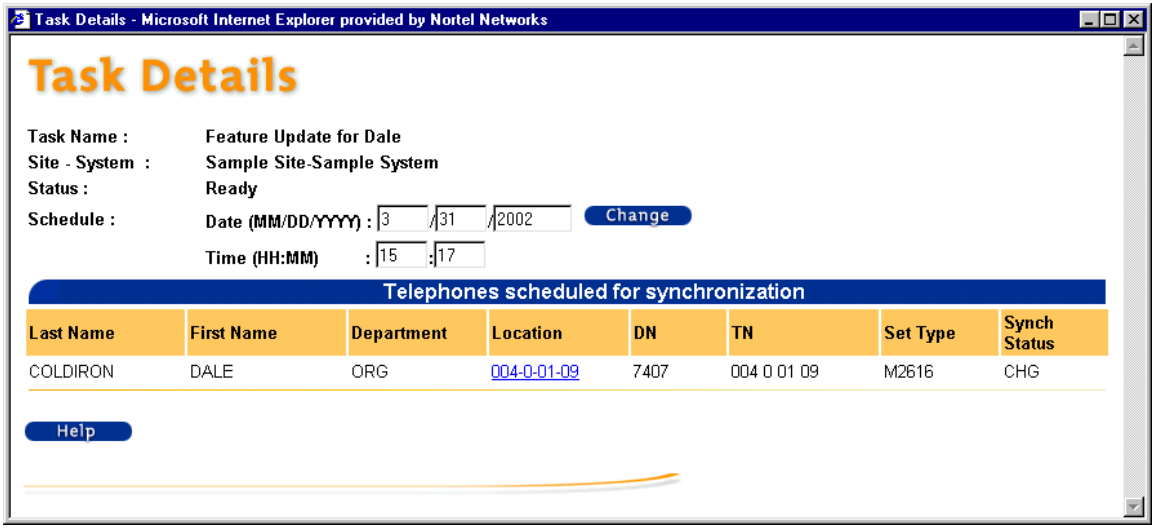
The task name in the Name column of the Sync Tasks page is a link to the Task Details page for the task.

To view the Task Details for a task:

➔ Click the task name.

The Task Details page opens (Figure 155).

Figure 155 Task Details page



The Task Details page varies in appearance depending upon whether the scheduled time has occurred. For the task in Figure 155 on page 342, the time has not yet occurred. The status is listed as Ready, and you may alter the scheduled date and time, if you so desire. The link in the Location column opens the Telephone pages for the telephone associated with the task.

A task that is running or waiting in queue will have its status listed as Running or Waiting in Queue. You cannot change the Schedule time of a task that is running or waiting in queue. Since the telephone is locked by the synchronization application, in this situation, the Location column does not contain a link to the Telephone pages.

OTM Queue Status

The middle section of the Sync Tasks page contains the OTM Queue Status table. When a task begins running, it moves from the OTM Task Status Table to the OTM Queue Status table. There are two types of queues that may appear in this table: Site-System-Application based queues and Resource-based queues.

Site-System-Application based queues

The purpose of Site-System-Application based queues is to serialize access to a given system. There is one queue per application for each site-system combination. This queue ensures that no two tasks destined for the same system run at the same time resulting in switch overlay conflict.

Resource-based queues

Resource-based queues make sure that two tasks requiring the same resource do not run at the same time. This ensures that the resource is available and the task can be executed successfully. The example in Figure 154 on page 340 shows two tasks that are in queue to use the same com port. The task at the top of the queue is either using the resource or waiting for the resource to become available if it is in use by a non-OTM application. Once the first task has finished, the second task runs.

Resource Status

The lower section of the Sync Tasks page contains the Resource Status table. This table lists the resources that are in use by OTM scheduled tasks. In the example in Figure 154 on page 340, although the two tasks are running on two different systems, they both require the COM1 port. The tasks are executed in the order indicated in the Tasks List column.

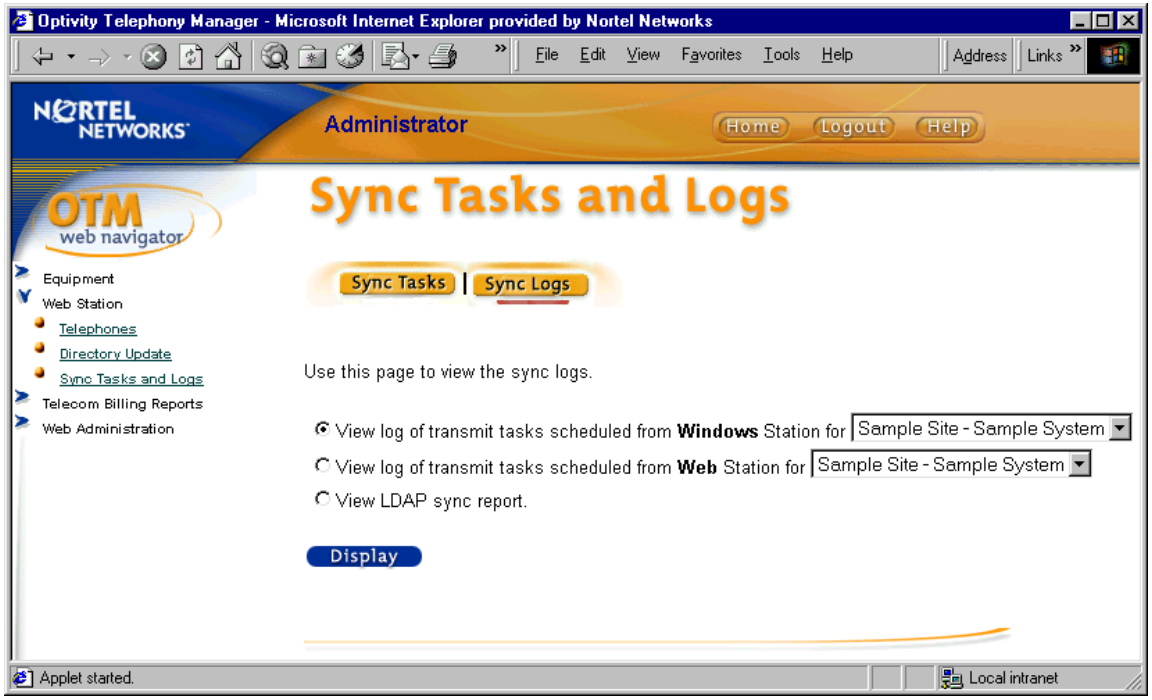
Sync Logs

The Sync Logs page is used to access three types of synchronization logs:

- Transmit tasks scheduled from Windows Station Administration
- Transmit tasks scheduled from Web Station
- LDAP sync reports

Access the Sync Logs page by clicking the Sync Logs tab on the Sync Tasks and Logs page. The Sync Logs page opens (Figure 156).

Figure 156 Sync Tasks and Log page—Sync Logs tab



To view a log of transmit tasks scheduled from Windows Station Administration:

1 Click the radio button located beside "View log of transmit tasks scheduled from Windows Station for."

2 Select a system from the drop-down list.

3 Click Display.

Note: Only tasks that were scheduled from Windows using Windows Station Administration appear in this log.

To view a log of transmit tasks scheduled from Web Station:

1 Click the radio button located beside "View log of transmit tasks scheduled from Web Station for."

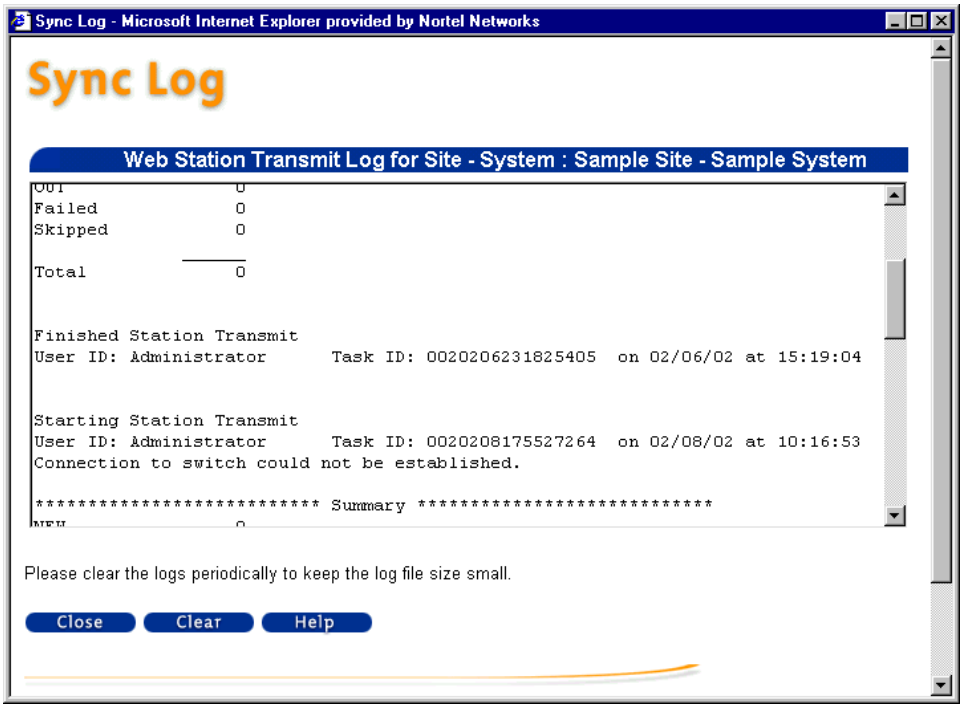
2 Select a system from the drop-down list.

3 Click Display.

The Sync Log details page opens (Figure 157).

Note: Only tasks that were scheduled in Web Station appear in this log.

Figure 157 Sync Log details



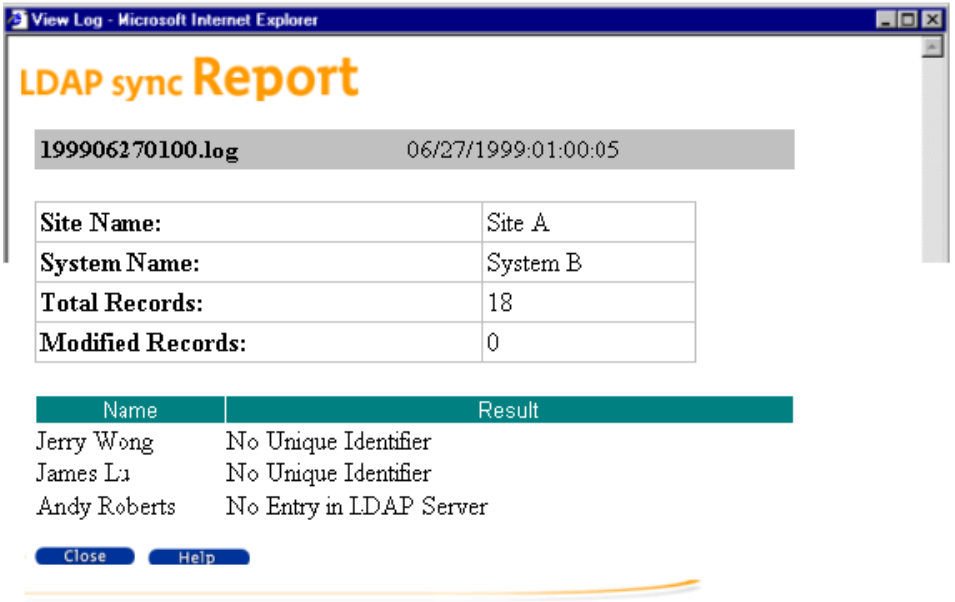
To view the LDAP sync report:

1 Click the radio button located beside “View LDAP sync report.”

2 Click Display.

The LDAP Sync Report page opens (Figure 158).

Figure 158 LDAP Sync Report page



Web Administration

The Web Administration heading in the OTM Web navigator tree provides links to the Custom Help pages, the User Authentication page, the User Groups page and Java-based User Properties application, and the Session Monitor.

Custom Help

The Custom Help page allows you to customize Help text for OTM Web-based applications. Typically, you only customize Help that is for end users.

All Web-based Help files can be customized. You can either:

- Replace them with customized help provided by you (the administrator)
- Annotate the help files

The custom Help page provides a list of all Web-based Help files. You can use a custom Help file instead of the standard Help by copying and then editing and/or annotating the standard Help.

OTM includes sample HTML files that you can use to create customized Help for the end user. Sample Help files are provided for the following Help topics:

- Dialing plans
- System speed call lists
- Flexible feature codes

Each individual Help page has Content and Index buttons to return you to the Help table of contents or index. Next and Previous buttons allow you to navigate to the next Help for topic. A Java applet shows the table of contents and index as navigation frames. Versions of the table of contents and index are also available without frames.

Customizing standard Help files

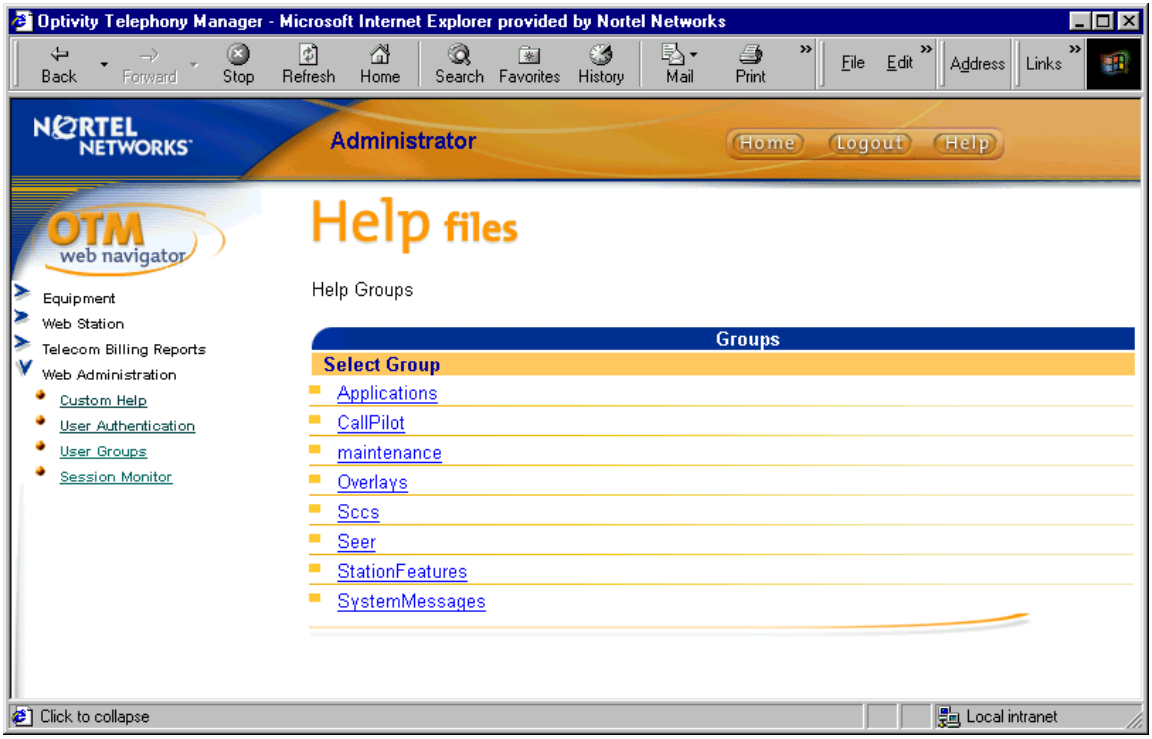
The following procedure shows how to create and annotate a custom Help file. All Help customization pages appear in the Content frame of the Web Navigator.

To create and annotate a custom Help file:

1 Click Custom Help under Desktop Services in the Web Navigator tree.

The Help Groups page opens (Figure 159).

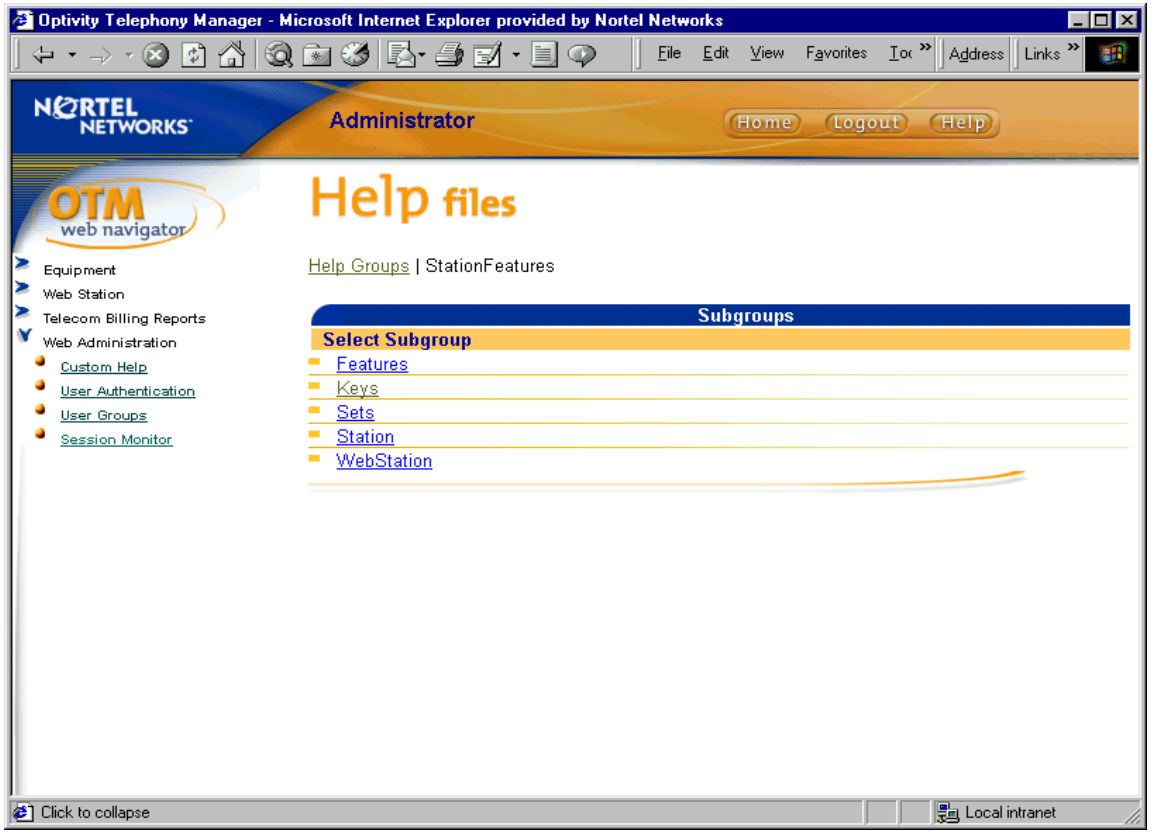
Figure 159 Selecting the standard OTM Help files - Help Groups



2 Click a Help Group. In this example, click StationFeatures.

The Help Subgroup page for StationFeatures opens (Figure 160).

Figure 160 Selecting the standard OTM Help files - StationFeatures subgroups



3 Click a Help Subgroup. In this example, click Keys.

A page that displays a list of the Help files for all key-based features opens (Figure 161).

Figure 161 Customizing standard Help files

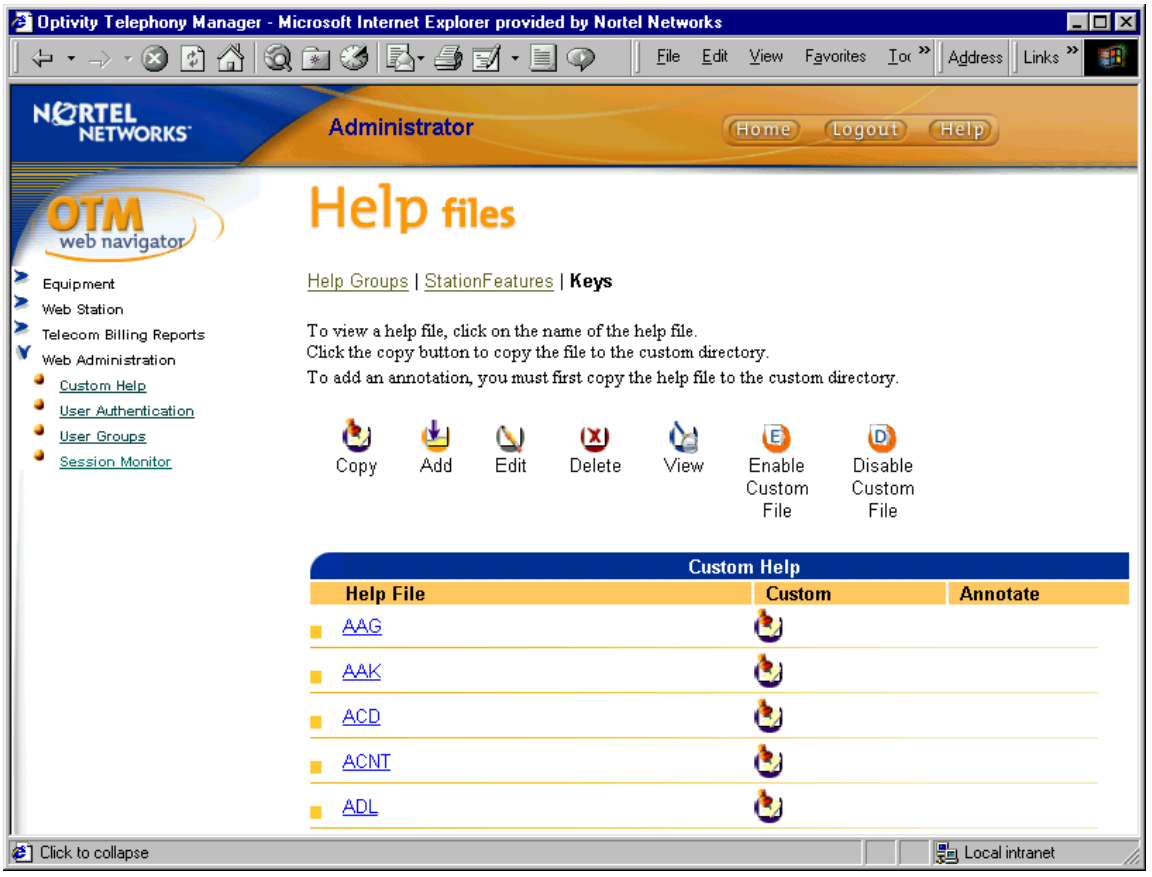


Table 26 explains the function performed by each of the buttons in the Custom Help feature.

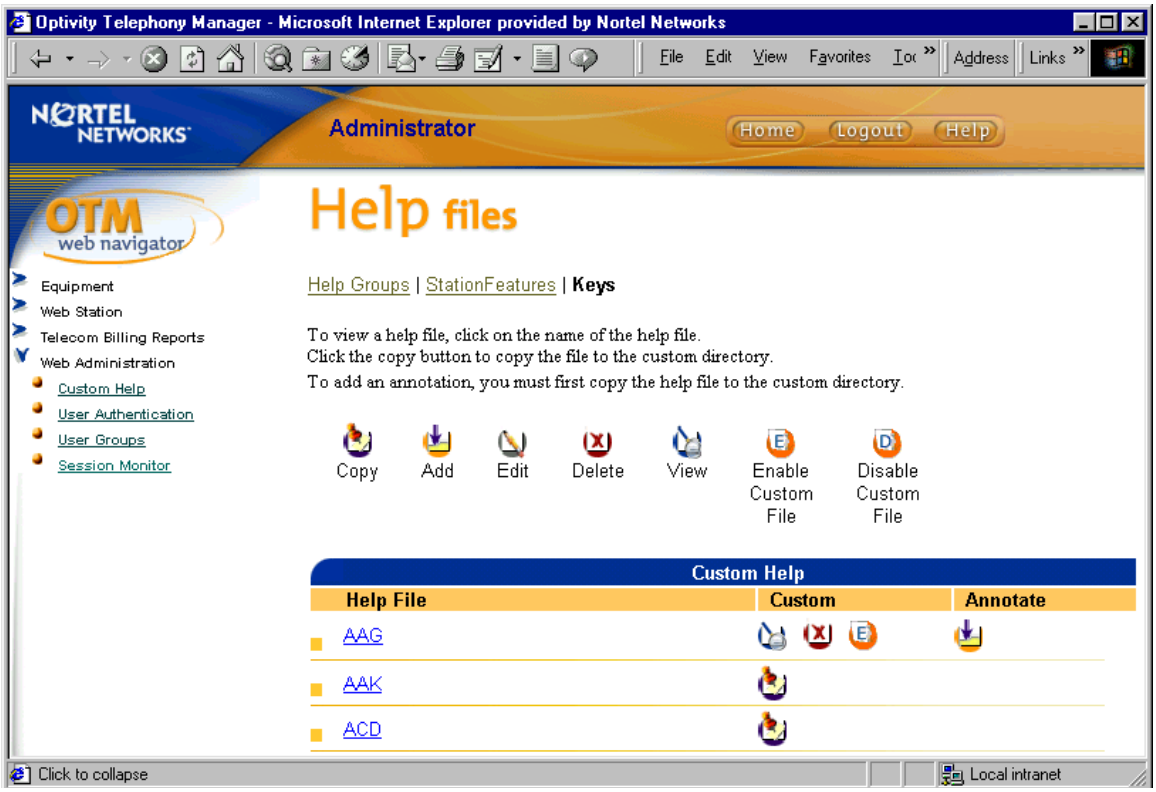
Table 26 Custom Help buttons

Button	Explanation
	Copy the standard Help file to the custom directory.
	Annotate the Help file in the custom directory.
	Edit the annotated Help file.
	Delete the annotation or delete the entire custom Help file.
	View the custom Help file.
	Enable end user viewing of the custom Help file.
	Disable viewing of the custom Help file and use standard Help.

4 Click Copy in the Custom column for ACD Answer Agent (AAG).

The buttons in the Custom and Annotate columns change (Figure 162).

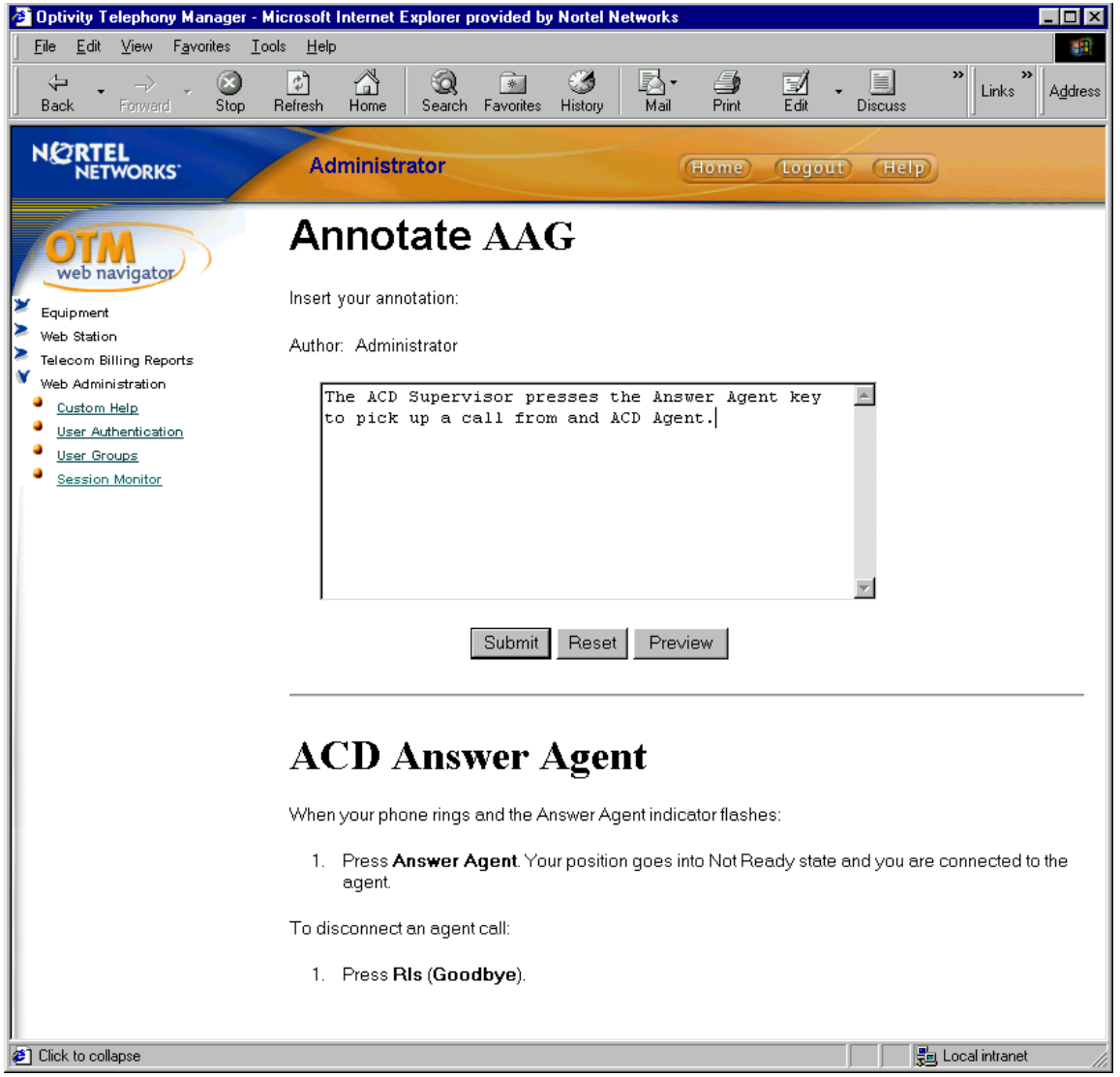
Figure 162 Copy a standard Help file



5 Click Add in the Annotation column to add your annotation.

The annotation entry page opens (Figure 163).

Figure 163 Annotating custom Help files



Note: Only custom Help files can be annotated.

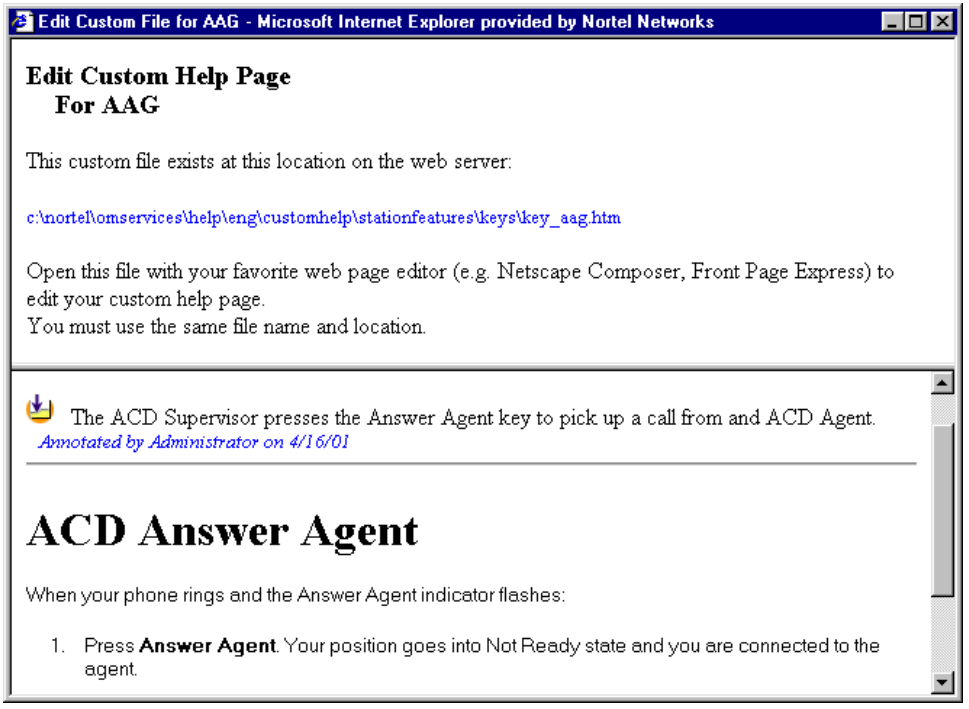
6 Add your annotation and press Submit.

7 Click Enable to enable viewing of your annotated file.

8 Click View to display your annotated file.

The custom Help file appears (Figure 164).

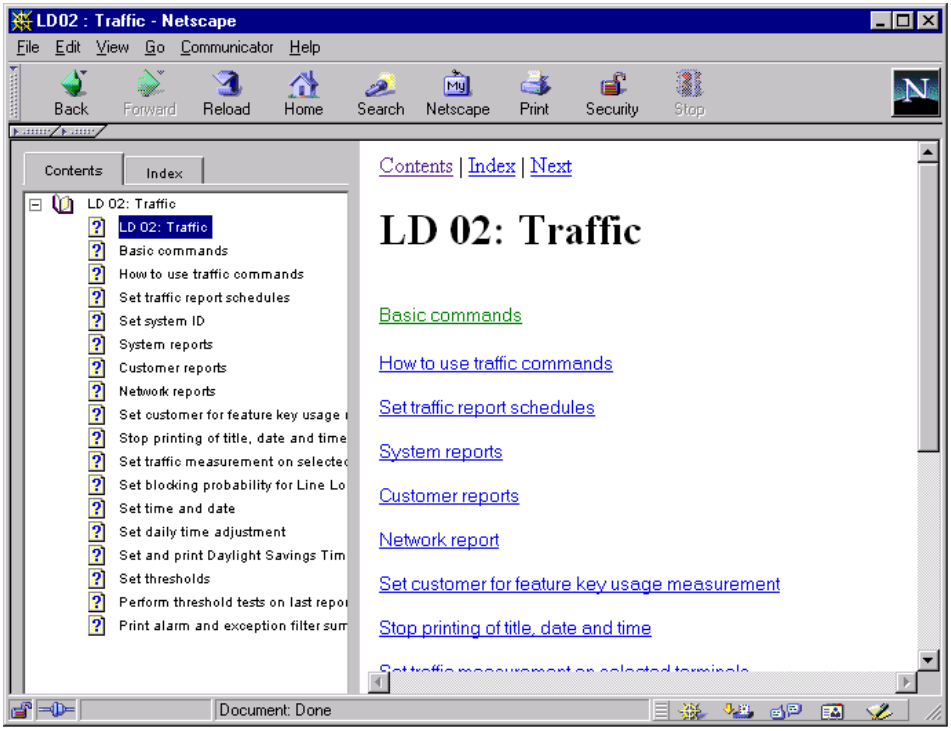
Figure 164 Viewing an annotated Help file



Additional Help topics

In addition to Help on features and keys, Web-based Help is available for a variety of maintenance and administrative tasks that can be performed using OTM. Figure 165 shows the Web-based Help file for overlay 02.

Figure 165 Sample Web-based Help screen



User authentication

You can select any of the following three methods or combination of these methods to authenticate OTM users:

- Local OTM Server account
- Windows NT Domain account
- LDAP authentication

Note: The Administrator account is always authenticated through the local server account because it is a default account on all supported Windows platforms.

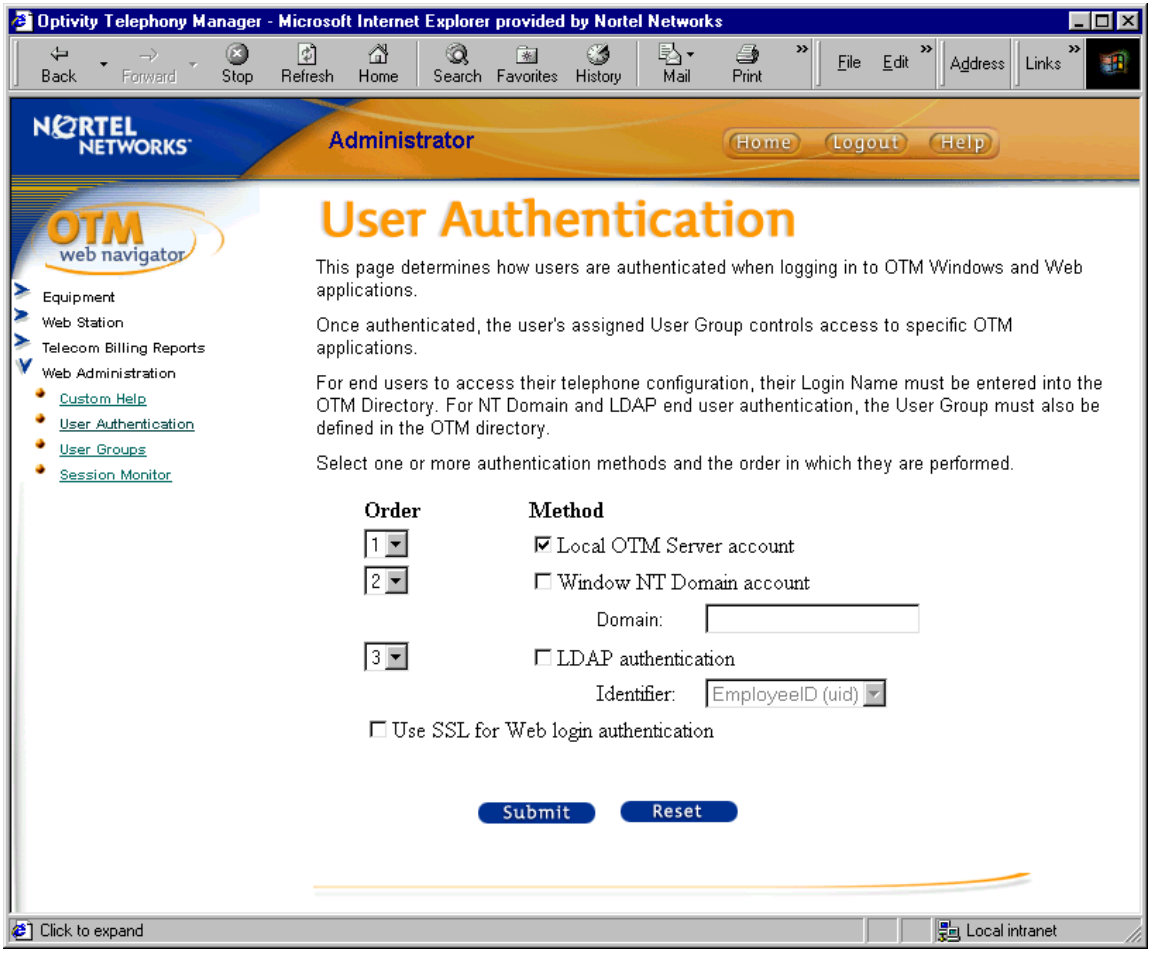
Note: The default authentication method is the Local OTM Server account. This method provides the best login performance because there is no requirement to search the OTM directory for the user's assigned User Group.

To configure authentication:

1 From the OTM Web Navigator tree, select User Authentication.

The User Authentication page opens (Figure 166).

Figure 166 OTM User Authentication page



2 Use the check boxes to select one or more of the available authentication methods:

   a If you select Windows NT Domain account, enter one or more domains in the Domain text box.

   b If you select LDAP authentication, use the drop-down list to choose either EmployeeID (uid), or EMail (email).

3 Used the drop-down lists to assign the order in which the authentication methods are performed.

Note: If you choose multiple authentication methods, OTM respects the order configured; however, it should be noted that the best performance is achieved by using the Local OTM Server account method.

4 To use the secure socket layer (SSL) during the authentication process, click the "Use SSL for Web login authentication" check box.

Note: If the OTM Server has the required certificate installed, setting the check box and protecting specific virtual directories on the OTM Server causes OTM to use SSL encrypted transport during authentication. In this case, Web login is performed using https:// rather than http://, and the traffic is encrypted. The OTM Server automatically switches to non-SSL transport once the user is successfully authenticated.

The selected method(s) are used to authenticate users on all OTM platforms: OTM Server, OTM Client, and OTM Web Client.

For information on configuring users for desktop access, see "Enable Web desktop access" on page 172.

Note: Authentication methods can also be configured using the Windows navigator. See "User authentication" on page 144.

User Groups

Navigator access is controlled by user group. A user's User Group assignment determines which features are available on the Telephone features page. You also use the User Groups page to indicate which users are permitted to make changes to the General and Keys pages.

Note: The migration from User Templates to User Groups has required that several changes be made to existing users profiles and access privileges. For more information, see "Migrating User Templates from earlier versions of OTM to User Groups" on page 84.

User groups must be added and deleted in the OTM Windows Navigator. See "Creating a User Group" on page 139.

OTM is shipped with the following User Groups and corresponding access rights:

- Administrators
  - — Full read/write access rights. Access rights cannot be changed for this user group.
- HelpDesk
  - — Full access to all Web Navigator tree items except those under Web Administration.
  - — Full Access to Web Desktop Services, including read/write and synchronization capabilities.
  - — No access to Windows Navigator applications.
- EndUser
  - — No access to Web or Windows Navigator applications.

— Web Desktop Services is read only. Only 21 features are available; the rest are hidden.

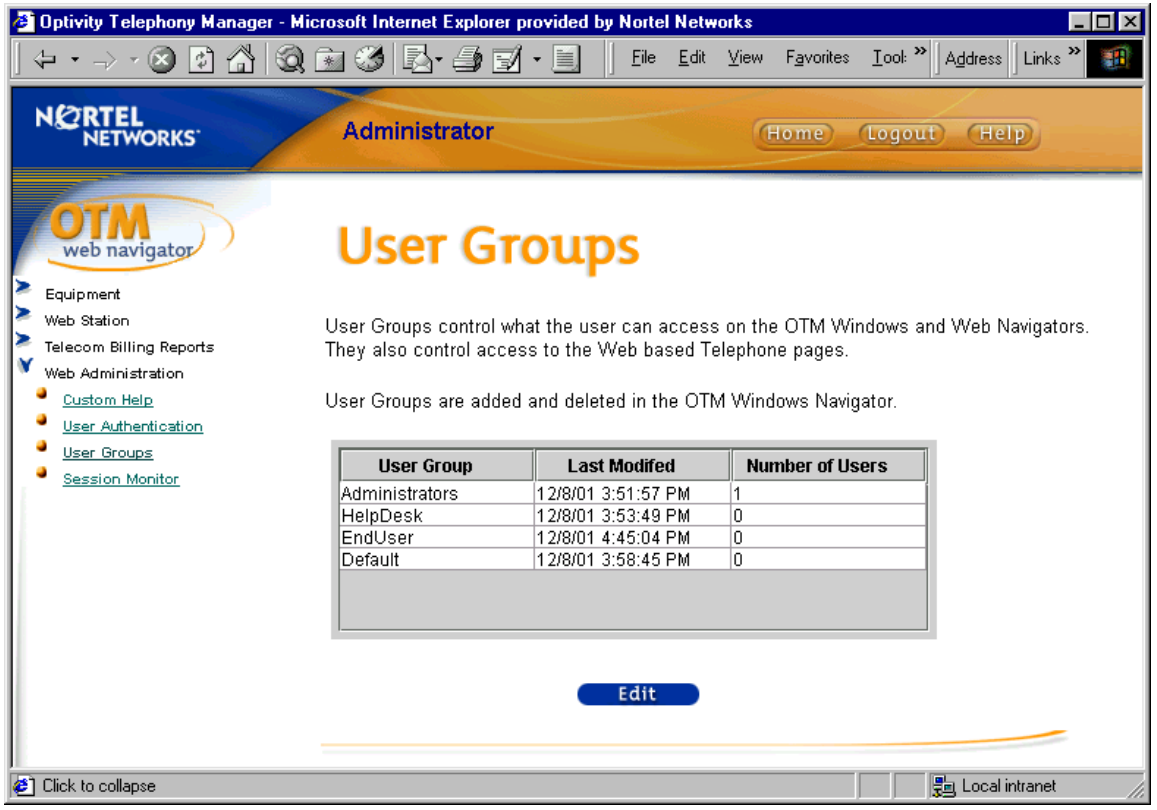
- Default
  — No access.

To view the available User Groups:

➔ Click the User Groups link located under Web Administration in the OTM Web Navigator tree.

The User Groups page opens (Figure 167).

Figure 167 User Groups page



Navigator access

Access to the sites, systems, and applications available in the both the Windows and Web Navigators is controlled on a user group basis through the User Group Properties Java application.

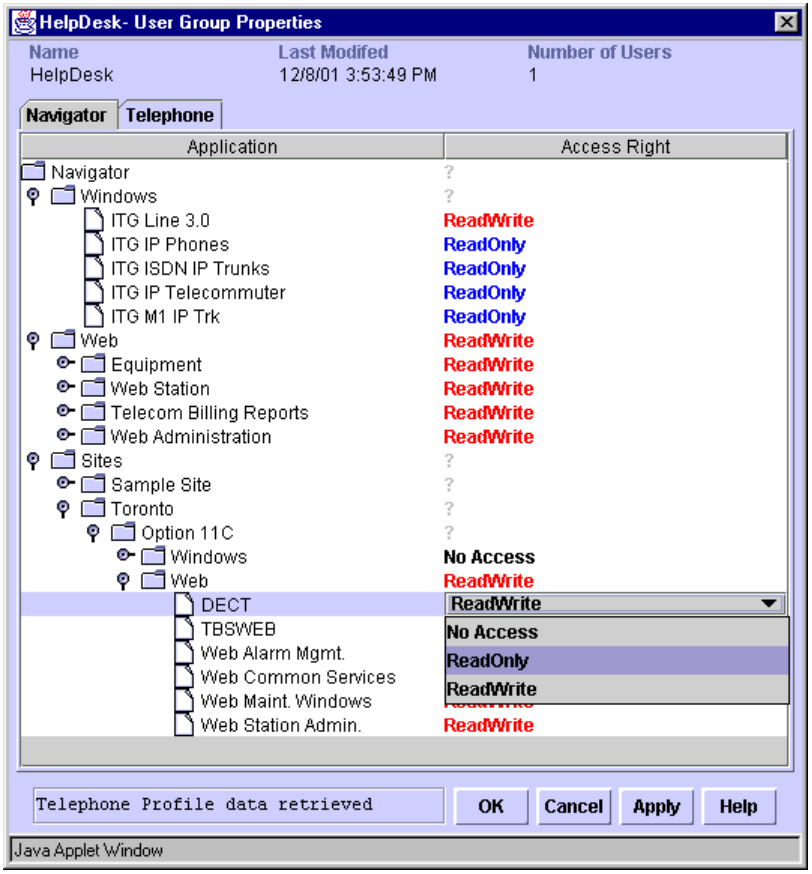
To modify the access rights of a user group:

1. Click to select a User Group.
2. Click Edit.

   The User Group Properties Java application launches and the User Group Properties dialog box for the selected user group opens (Figure 168).

Note: Alternatively, you may double-click the user group to display the User Group Properties dialog box for the selected user group.

Figure 168 User Group Properties dialog box—Navigator tab



The Access Right column lists the level of access allowed for each site, system, and application. This is the same tree structure and performs the same function as the Windows-based User Groups dialog box (Figure 54 on page 141).

Note: The question mark indicates that the subitems belonging to the item displaying the question mark have mixed access settings.

To modify access rights:

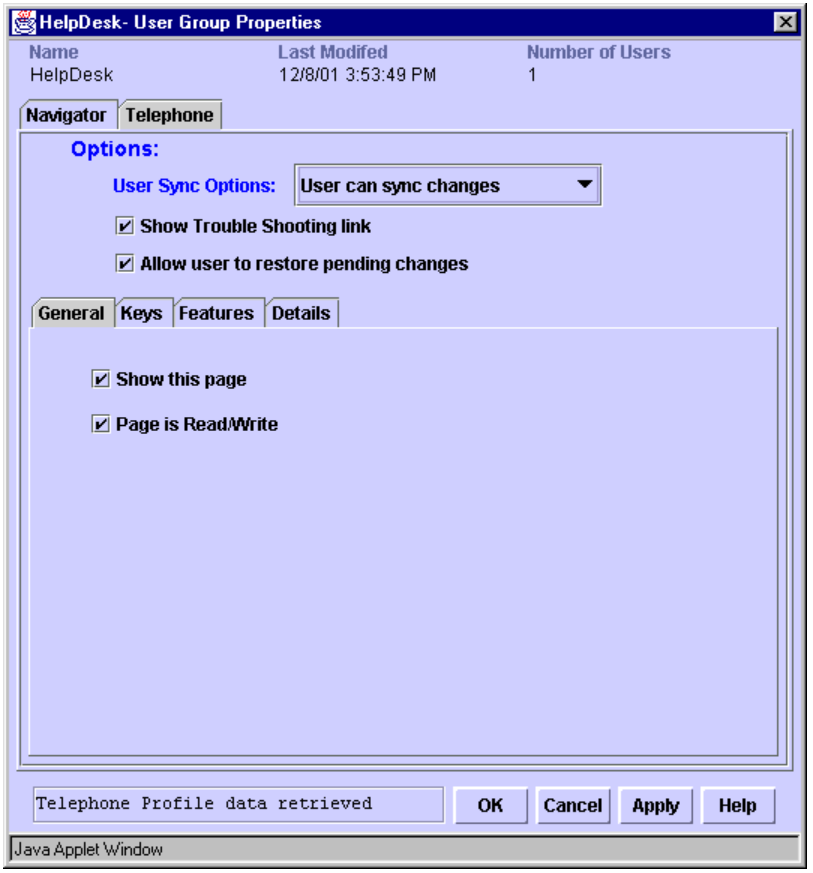
1. Use the drop-down list to select ReadWrite, ReadOnly, or No Access for each item in the tree.
2. Click Apply.

Telephone access

The Telephone tab in the User Group Properties dialog box is used to control access to the telephone pages on the Web for each user group (Figure 169).

For information on the telephone pages, or to view examples of telephone pages, see "Telephone pages" on page 387.

Figure 169 Telephone access properties dialog box—General Tab



The options that are configured in the upper section of this dialog box are applicable to all of the tabs in telephone pages. These options included:

- Allowing or denying this group the ability to synchronize changes with the Meridian 1 or Succession CSE 1000 system. If synchronization is denied, you must manually synchronize the changes with the Meridian 1 or Succession CSE 1000 system using Windows-based Station Administration or Web Station.
- Determining whether the troubleshooting link appears at the top of the telephone page for members of this group.
- Allowing or denying this group the ability to restore changes that have been made to a telephone.

To configure telephone access options:

1 Use the drop-down list to select either “User can sync changes” or “User cannot sync changes”.

2 Click the Show Trouble Shooting link check box to enable this option.

For EndUsers, clicking the link displays the Telephone Troubleshooting Help page, which includes a reset button (Figure 195 on page 397).

For Web Navigator users, clicking the link displays the maintenance page for the telephone with all of the available commands. See “Telephones/PE Units maintenance” on page 767.

3 Click the “Allow users to restore pending changes” check box to permit the users in this group to restore the changes made to a telephone.

Note: If you allow users to restore pending changes, they will be able to undo any changes that have been scheduled by the Administrator or HelpDesk but have not yet occurred. For more information on restoring pending changes, see “Restore button” on page 392.

4 Click Apply to apply your changes.

General tab

In the General tab, you use check boxes to determine whether the Telephone—General page appears for this user group, and whether the users in this group can make changes to this Telephone page. The Telephone—General page contains information such as site, system, location, and TN, which may not be appropriate for or valuable to end users.

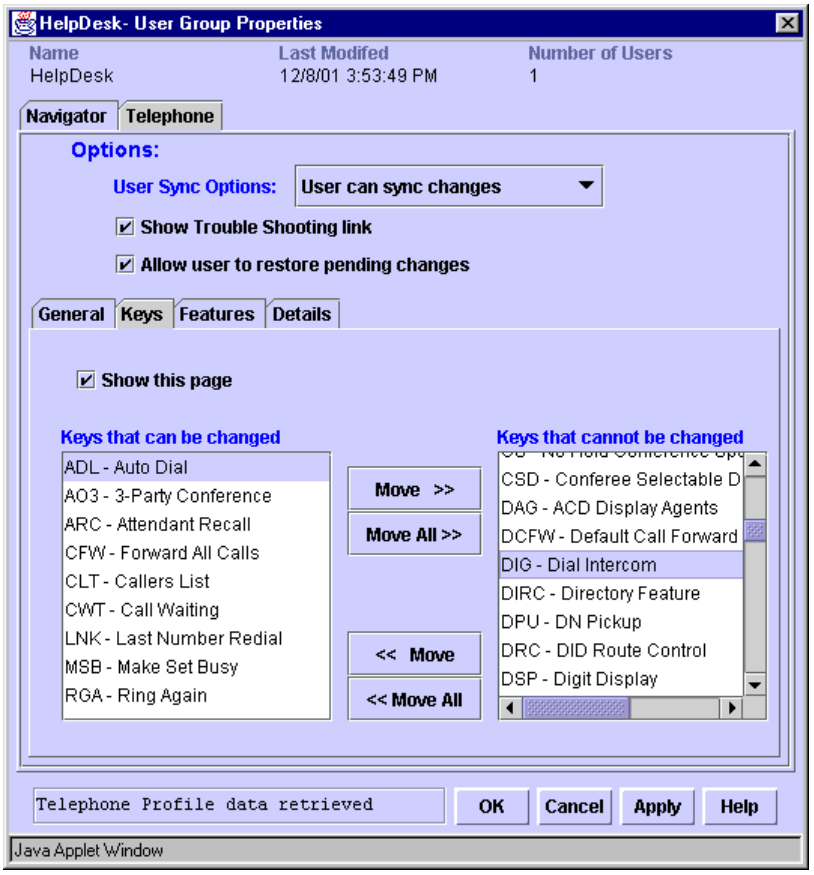
To configure the Telephone—General page:

1. Click the “Show this page” check box to allow this user group to be able to view the Telephone—General page (Figure 193 on page 395).
2. Click the “Page is read/write” to allow users in this group to make changes to the information that appears in this telephone page.
3. Click Apply to apply your changes.

Keys tab

In the Keys tab (Figure 170), you use the check box and lists of key-based features to determine whether the Telephone—Keys page appears and, if so, which keys the users in this group are able to change.

Figure 170 Telephone access properties dialog box—Keys tab



To configure the Telephone—Keys page:

1 Click the “Show this page” check box to allow this user group to be able to view the Telephone—Keys page (Figure 196 on page 399).

2 Use the “Move” and “Move All” buttons to move the key-based features that can be changed by this user group into the left column.

Put keys into the left column to allow users in this group to interchange these key types and change the key parameters.

Note: If the user selects a key that is not in the left hand column while viewing the Telephone—Keys page, the Change button does not appear.

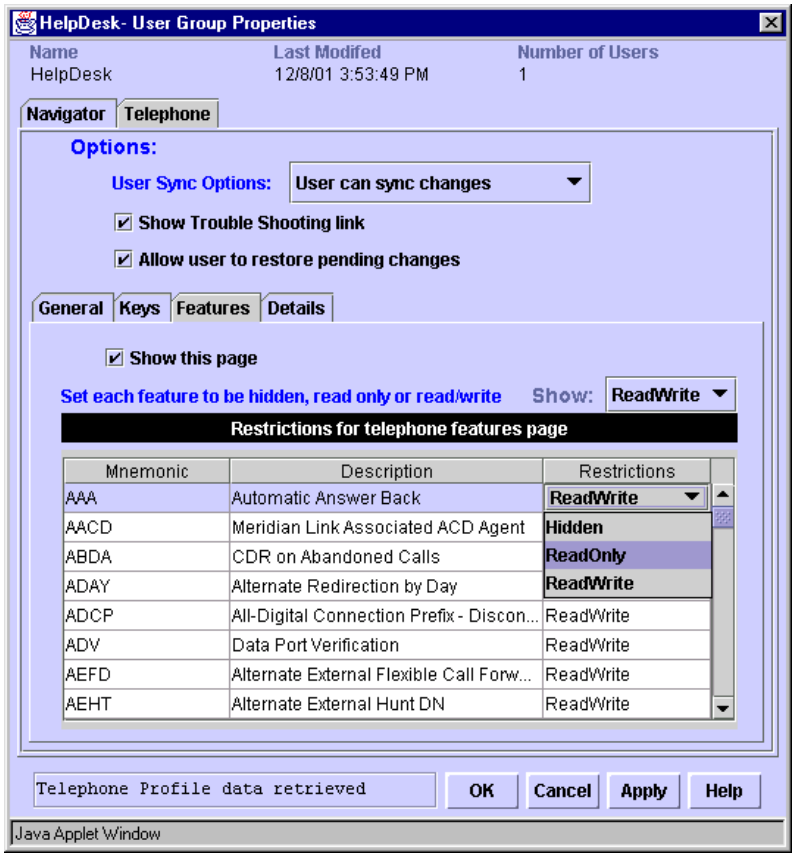
3 Click Apply to apply your changes.

Features tab

In the Features tab (Figure 171), you use the check box and list of features to determine whether the Telephone—Features page appears and, if so, which features the users in this group can view and change. The list of features contains all the non-key features listed alphabetically by prompt in LD10 and LD11. Each feature is assigned a restriction of Hidden, ReadOnly, or ReadWrite. If Hidden, the feature does not appear in the end user Feature drop-down list.

Note: Read/Write capability requires the OTM Premium package.

Figure 171 Telephone access properties dialog box—Features tab



To configure the Telephone—Features page:

1 Click the "Show this page" check box to allow this user group to be able to view the Telephone—Features page (Figure 216 on page 416).

2 Use the drop-down lists in the Restrictions column to configure each feature as ReadWrite, ReadOnly, or Hidden.

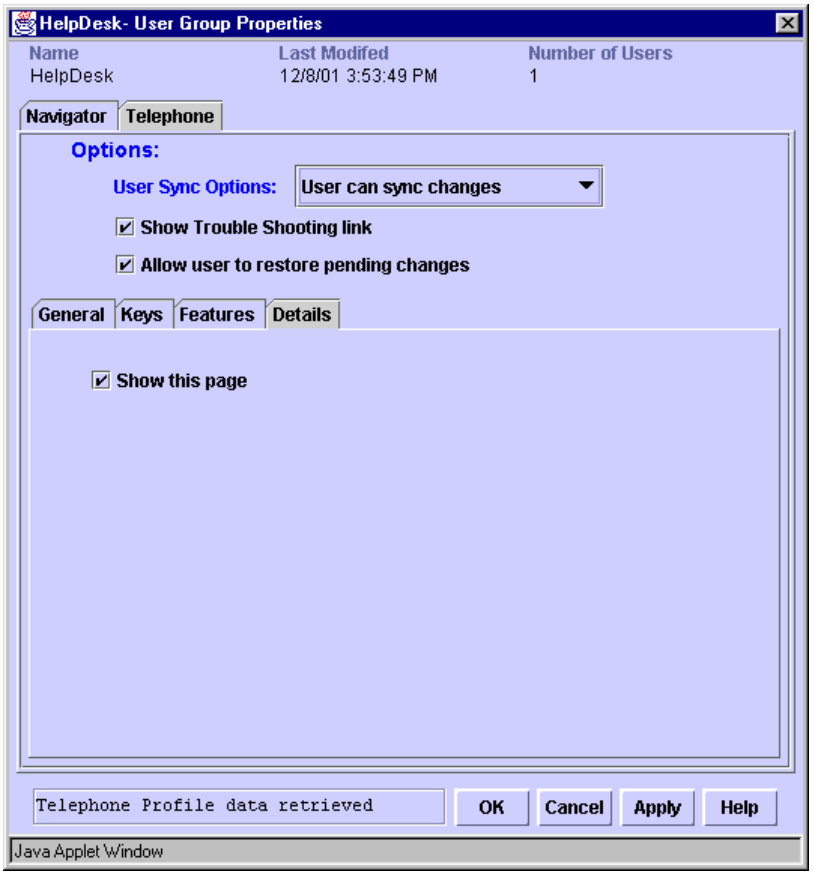
Note: The "Show" drop-down list contains: All, Hidden, ReadOnly, and ReadWrite. This is used to limit the size of the list.

3 Click Apply to apply your changes.

Details tab

In the Details tab (Figure 172), you use the check box to determine whether the Telephone—Details page appears (Figure 217 on page 417, and Figure 218 on page 418).

Figure 172 Telephone access properties dialog box—Details tab



Session Monitor

Login security prevents the web pages from being accessed without first successfully providing a valid login name and password combination. The Session Monitor page (Figure 173) contains a list of logged in users with the login time and IP address.

The administrator may log out users by clicking the corresponding Log Out check boxes and then clicking Log out.

Figure 173 OTM Administrator Session Monitor screen

OTM Web Virtual System Terminal

The Web Virtual System Terminal provides a single point of connectivity for a Web-based terminal window. Launch the OTM Web Navigator from Internet Explorer or Netscape Navigator, and select the system to connect to from the GUI. This does not require knowledge of such items as IP addresses and serial port settings because the information is stored on the server. You determine who gets access to what, and you can change the settings without interrupting everyday operation.

The OTM server connects to devices over IP network and serial ports on the OTM server. Web Virtual System Terminal supports connection primarily to a Meridian 1 or Succession CSE 1000 system via:

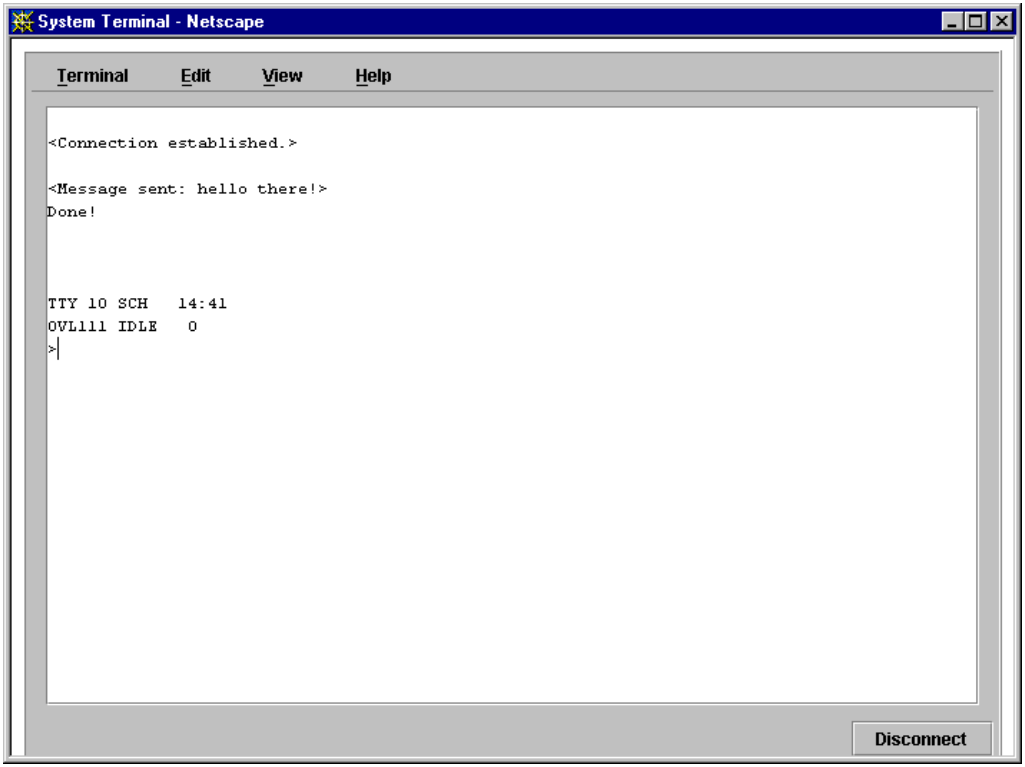
- Meridian 1 or Succession CSE 1000 system pseudo-TTY (PTY) port
- Direct serial connection
- Telnet

The Web Virtual System Terminal resembles the OTM Windows System Terminal application. When you connect to a Meridian 1 or Succession CSE 1000 system, it provides similar context-sensitive Help for the overlays and error messages. When you connect to other devices, it provides a basic Telnet connection. The Web Virtual System Terminal is a Java applet embedded in an HTML page. Once connected to the Terminal Server, the Web Virtual System Terminal communicates with the selected device through the Terminal Server. Only the first client that connects to a port can send character input to the host.

The Web Virtual System Terminal displays most messages in a window. However, some messages that do not require immediate attention appear between the < > characters in the terminal screen (Figure 174). These messages are not sent to the host device or logged on the server. The messages can be:

- Status of this client (connected, disconnected, read-only connection, and so on)
- Status of other client (monitoring this port, disconnected)
- Broadcast message (received from another client, sent to another client)

Figure 174 Terminal Client showing messages



OTM Web Virtual System Terminal menus

The OTM Web Virtual System Terminal window has the following menu items:

Terminal menu

- Connect - Connect to a virtual port. This item appears when the client is not connected to a port.

Note: For a non-administrator user, if a port is already in use by someone else, then the connection is not allowed.
If you have administrator privilege, you may connect to a port already in use by someone else. However, you may only monitor the session, and cannot send text to the host.

- Disconnect - Disconnect from a virtual port. This item appears when the client is connected to a port.
- Disconnect Others - Disconnect all other clients from a virtual port. This item appears only for a user with administrator privilege.

Note: If you select Terminal > Disconnect Others, then all other clients to the virtual port are disconnected, and you are then allowed to send text to the host.

- Send Message - Display a Send Message dialog box. This allows you to "broadcast" a message to all other users on the same virtual port.

Figure 175 Send Message dialog box

- Parse M1 Output - This menu has a check mark to enable parsing of overlay interaction to provide the context-sensitive Help. To reduce some unnecessary CPU overhead, you should uncheck this menu item for a "Generic" device. If it is checked, then the Help > Current Overlay and Help > Current Prompt menu items become visible to provide context-sensitive Help for the Meridian 1 and Succession CSE 1000 overlays.

Edit Menu

- Copy - Copy the selected text to the clipboard.
- Select All - Select all text in the output window.

View Menu

- Look & Feel - Cascading menu determines the look of and feel of the user interface. You can choose:
  Java
  Windows
  Motif
- Overlay Passthru - Make the applet behave like the MAT System Terminal application. It provides a separate edit box to enter commands, which allows for backspace while working in the M1 overlay environment.

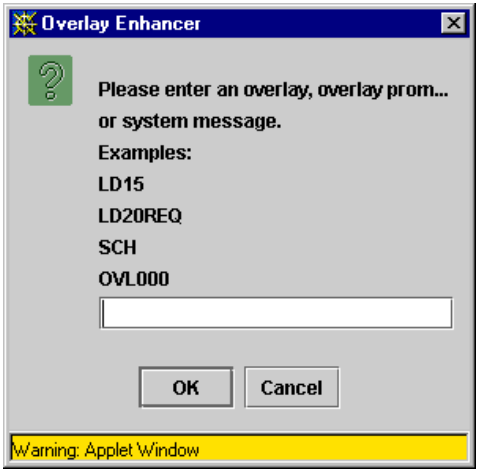
Note: If this menu item is checked, then the Help > Search M1 Help Files menu item becomes visible. If this menu item is unchecked, then it behaves like a standard terminal window.

Help Menu

- Current Overlay - Display Help for the current overlay in a separate browser window. The OTM Web System Terminal monitors character I/O to keep track of the overlay information.
- Current Prompt - Display Help for the current overlay prompt in a separate browser window. The OTM Web System Terminal monitors character I/O to keep track of the overlay information.
- I/O Navigator - Display the Overlay Enhancer dialog box. This allows you to search for Help on an overlay, overlay prompt, or error message.

Note: Like the OTM System Terminal, the OTM Web Virtual System Terminal has context-sensitive Help. It monitors system input and output to determine the current overlay and prompt. You can also search for help for an overlay (LD22, for example), overlay prompt (LD22 REQ, for example), or M1 message (AMH0007, for example). You can either highlight text in the terminal screen and then select Help > Search, or select Help > Search, and then type in the string to search for.

Figure 176 I/O Navigator Overlay Enhancer dialog box



Terminal Server

The Terminal Server application is a Windows application that uses the OTM database to obtain site, system, and IP address information. The Terminal Server supports direct serial connections and Meridian 1 or Succession CSE 1000 overlay connection over an IP network. If you connect over an IP network to a Meridian 1 or Succession CSE 1000 system, you can customize the Meridian 1 or Succession CSE 1000 port user types (SCH, MTC, BUG, TRF).

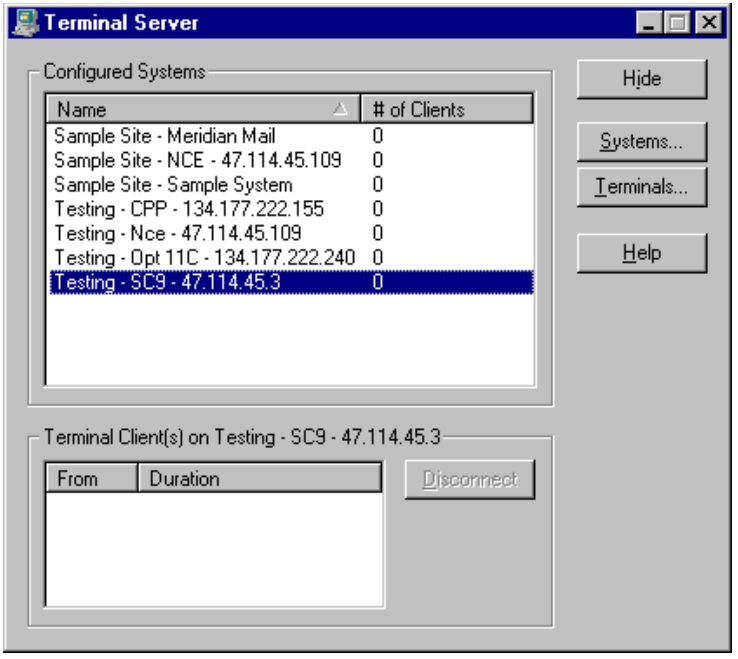
Terminal Server setup

To launch the Terminal Server application:

➔ From the Start menu, select Programs > Optivity Telephony Manager > Terminal Server.

The Terminal Server dialog box opens (Figure 177).

Figure 177 Terminal Server dialog box



The Terminal Server window displays two lists:

- configured systems
- configured ports

The configured systems list displays information on the virtual port that is configured:

- Name:
  As defined in the OTM Windows Navigator
- Number of clients:
  The number of terminal clients using the port

When you select an entry in the Configured Ports list, the Clients on Port list displays the following information for each terminal client using the port:

- From:
  IP address of the terminal client

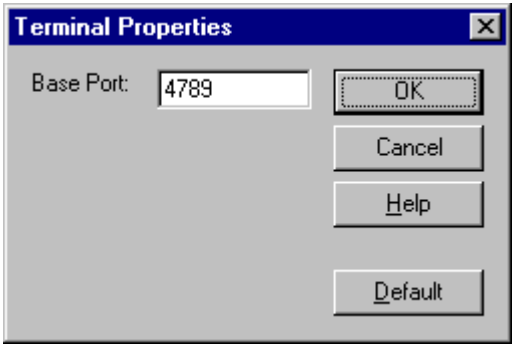
- Duration:
  How long the connection has been in use

The Disconnect button next to the Clients on Port list allows you to terminate the connection to one or more terminal clients.

The Terminal Server application also has the following buttons:

- Hide - Hide the application window. During normal operation, the Terminal Server application runs without user input, so hiding its window frees up some desktop space. You can view the window at any time by double-clicking the Terminal Service icon in the Task Bar tray.
- Systems - Configure the virtual ports. See "Virtual ports" next.
- Terminals - Configure the starting network socket port number for communications between the OTM Server and the OTM Web System Terminal (Figure 178). The default is 4789. Typically, you will not need to change this.
- Help - Get context-sensitive Help on the application.

Figure 178 Terminal Properties dialog box



Virtual ports

In the Terminal Server application, the Virtual Ports Properties window allows you to enable or disable connection to a particular device. It displays the virtual port number for each configured device, and the corresponding serial or network settings.

In the Virtual Port Properties window, a tree displays the devices that can be connected via a virtual port. For serial ports, the window retrieves the available serial ports from the Registry. For network connections, the window retrieves the site and system information from the OTM database. The virtual port for a system uses the same IP address assigned to System Terminal. The tree mirrors the tree in the OTM Navigator. It uses the communication profile in System Properties, determined as follows:

- For a Generic system, it uses the profile (serial or network) selected in the Application page in System Properties.
- For a non-Generic system, it uses the communication settings from the profile (serial or network) assigned to VT220 in the Applications page in System Properties.
- For any system, if a network (Ethernet) profile is selected, Terminal Server uses a Telnet connection.

To configure virtual port connection for a device, click Systems in the Terminal Server window, or double-click a Configured System in the list (this selects the corresponding device in the Virtual Port Properties window allowing you to quickly change the settings for a particular device).

To enable virtual port connection for a device, do one of the following:

- Double-click the disabled port in the tree.
- Select the item and check the Enabled check box.
- Click Enable All. This enables all the items listed in the tree with the default configuration. The item becomes bold to show that it is enabled.

The field to the right of the Enabled check box automatically fills in the Site - System name for the selected device. This is the name displayed in the Terminal Server's main window.

To disable a virtual port, do one of the following:

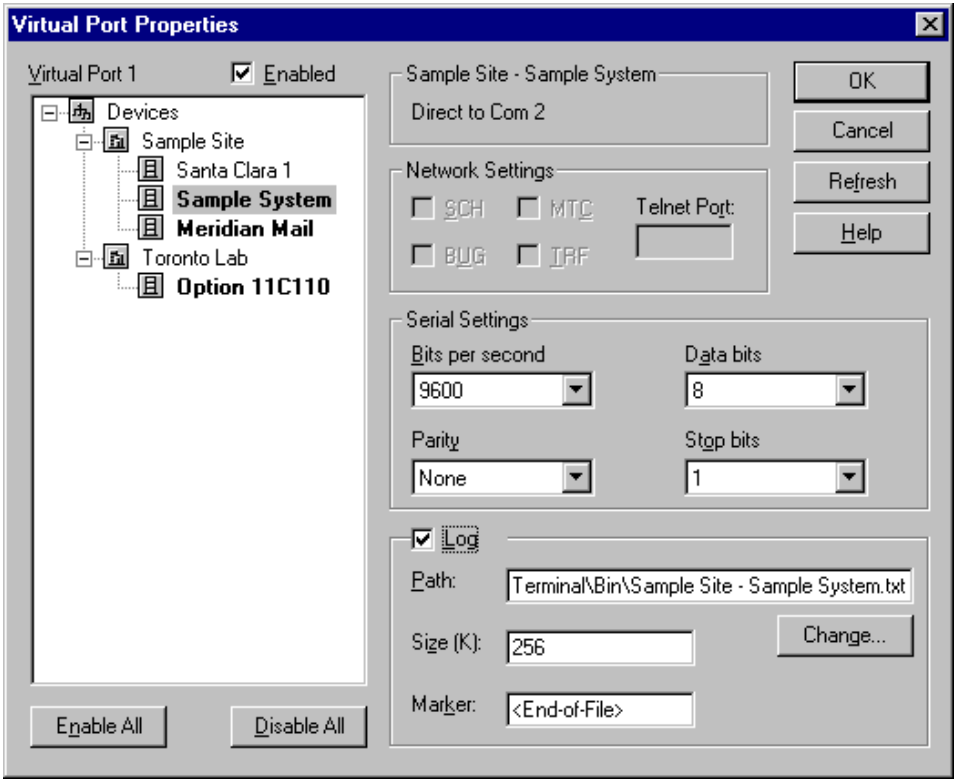
- Double-click an enabled item in the tree.
- Select the item and uncheck the Enabled check box.
- Click Disable All. This disables all the devices listed in the tree. The item is no longer bold, and does not appear from the Terminal Server main window when you click OK.

Serial connections

The Terminal Server application supports all the serial ports on the OTM Server PC plus the systems configured in the OTM Navigator. However, while more than 8 serial ports may be configured, the Terminal Server is limited to 8 simultaneous serial connections. (The limit depends on the OTM server hardware, the network capacity, the server's CPU capacity, and so on.)

For a serial connection, Direct to Com x appears, where x is the com port number. The fields for serial settings are enabled. The default is the serial settings from the OTM database. You can change the settings in the dialog box (Figure 179).

Figure 179 Virtual Port Properties (Serial with Logging enabled)

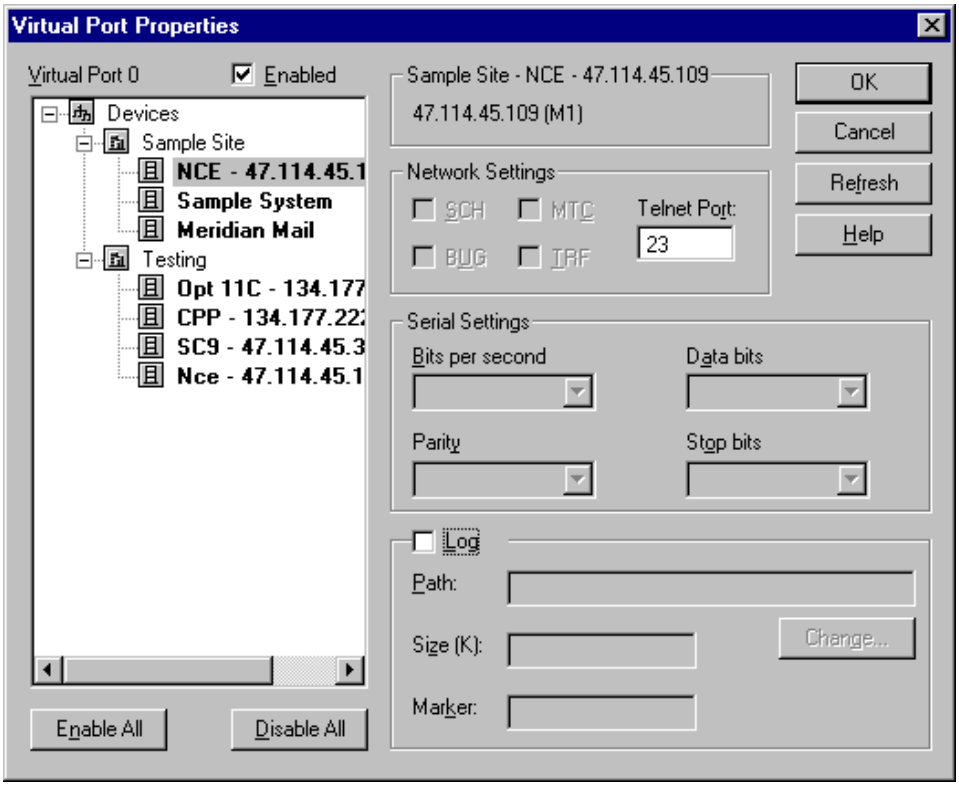


Network connections

For a network connection, the IP address appears. It also indicates whether the system is a Meridian 1, Succession CSE 1000, or Telnet (Figure 180).

- Make sure the IP address is correct. If the IP address is different from the OTM database's setting, click Refresh to update all of the network ports with the latest settings from the OTM database.
- If you select an M1 System, the fields for M1 port settings are enabled (default = SCH). The Telnet port field is disabled.
- If you select a non-M1 System, the fields for both serial and M1 port settings are disabled. The Telnet port field is enabled.
- Check the Log check box to turn on data capture. The log file name defaults to the Site - System name plus a .txt extension. The path and the file name can be changed by typing in the edit box or clicking Change.
- The maximum size of the log file is customizable (in the Size field) on a per-system basis, and defaults to 256 K. Once the file size reaches the limit, the Terminal Server starts from the beginning of the file, overwriting the oldest logs.
- Due to the circular nature of the log, the Terminal Server writes an end-of-file marker (customizable in the Marker field) at the end of the log entries.
- The log records the time and date of when a client connects and disconnects to the virtual port, and writes all text received from and sent to the host. This allows a network administrator to keep an activity log of the virtual port connection.
- If this ASCII log is to be viewed from a web browser, the file should be stored in a web-accessible path.

Figure 180 Virtual Port Properties (Network with Logging disabled)



Web Desktop Services

OTM Web Desktop Services allows users to view and modify the configuration of their telephones via a web browser.

The Web display includes a graphical view of the telephone, and shows the configured features. Help text is available for the features configured on the telephone. See “User Groups” on page 359 for information on your ability to restrict the display of certain features to specific user groups. For example, most Class of Service “features” are irrelevant for end users; therefore, you should specify that they not appear.

Installation and configuration of Desktop Services

The following procedure outlines the steps that you must take to install and configure Desktop Services:

1. Install OTM. See *Installing and Configuring Optivity Telephony Manager* (553-3001-230).
2. Create Windows NT accounts for EndUser and HelpDesk users as required.
3. Log on to the Web Navigator as Administrator and go to the User Authentication page.

Note: To navigate to the Administrator Login page, place **`/admin`** after the OTM IP address or host name in your Web Browser.

4. Configure authentication method(s) using the User Authentication page. See "User authentication" on page 356.
5. Go to the User Groups page and configure the Navigator and Telephone access properties for the HelpDesk, EndUser, and Default user groups. See "User Groups" on page 359.

Note: By default, HelpDesk users are given read/write access to all features, and access to all items in the Web Navigator tree except those in the Web Administration branch. HelpDesk users have no access to OTM Windows applications. EndUser users have read-only access to 21 features, and no access to the Windows or Web Navigators. Default users have no access.

Note: To allow Help Desk users to make changes to other user's telephone configuration data, make sure that they have access to Web Station.

6. For EndUser users, using the Employee Editor in the OTM Windows interface, enter the users' Login Name, User Group, and Web Reporting Access Rights in the users' OTM Directory entry. See "Enable Web desktop access" on page 172.

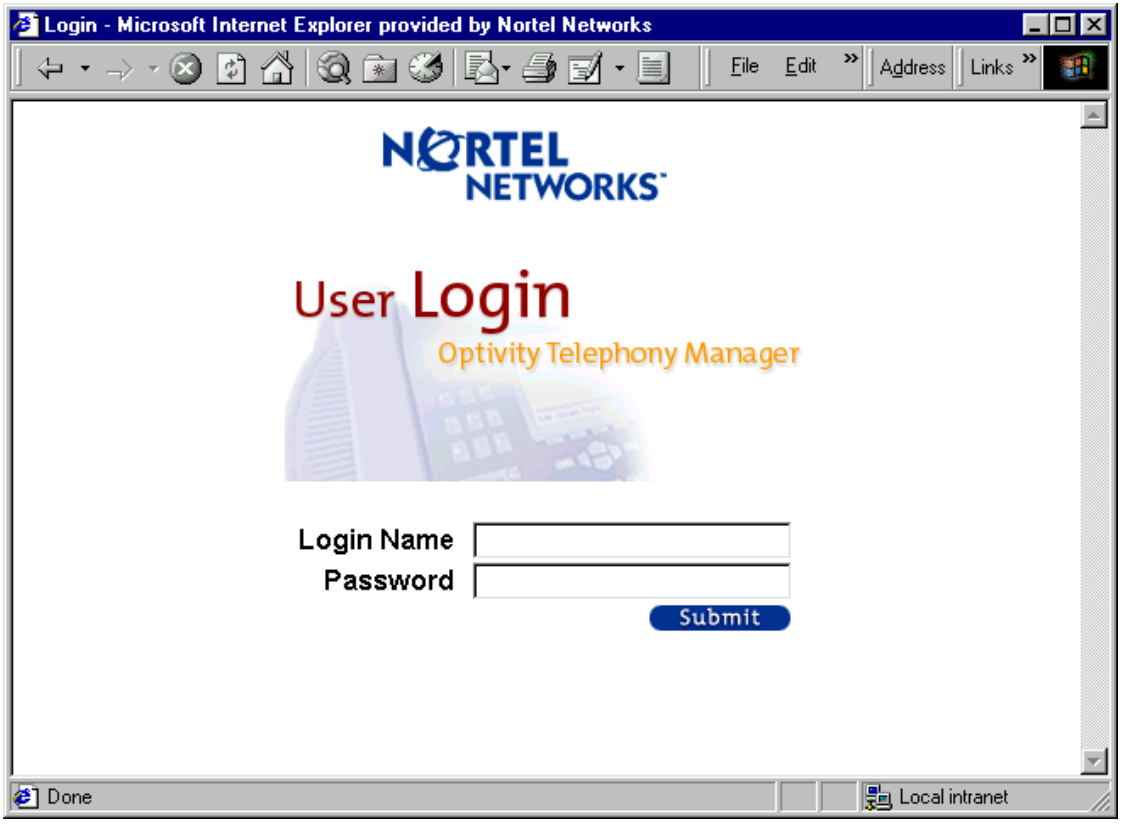
Appendix A, "Using Optivity Telephony Manager Web Desktop Services," provides reference information for Web Desktop Services end users. You may want to distribute copies of this appendix to the end users once you have installed and configured Desktop Services.

User Login page

Login security ensures protection against unauthorized entry and enforces access permissions for logged on users.

When a user points a web browser to the OTM end user URL a login page appears (Figure 181). If login is successful, the user's personal Desktop Service main page appears.

Figure 181 User Login page



EndUser Main Page Layout

The Web Desktop Services end user main page includes the following common elements:

- **Information Banner** (top): Contains the Nortel Networks logo, plus a Help, Logout, and Home button. The Help button takes you to general help on how to use these web pages. The Home button takes you to the My Profile page. The logout button takes you to the login page.
- **Navigation Bar** (left side): Lists hypertext links to various Desktop Service pages. When you single-click on an item in the Navigation bar, the related page appears in the Content Frame of the standard Web page.

Note: In the rare situations where a user has telephones on different switches managed by the OTM Server, the Navigation Tree expands to include the systems as the main nodes. The user selects the My Profile or Telephone(s) in the desired system.

- **Content Frame**: Contains the page based on the selection in the Navigation bar. There are four types of pages:

  Home page - General information about the user (name, department, and so on). The information displayed is determined by the administrator.

  Telephone pages - Contains telephone configuration data. A user may have more than one telephone; however, configuration data can appear for only one telephone at a time. The information displayed is determined by the administrator.

  Billing Reports - The TBS Web Reporting application displays billing reports in the content frame. For information on TBS Web Reporting, see *Optivity Telephony Manager Telemanagement Applications* (553-3001-331).

  Other Links - Contains links provided by the Administrator.

A line is placed at the bottom of each content page to visually indicate the end of the page. If vertical or horizontal scrolling is required, the entire page is scrolled.

My Profile page

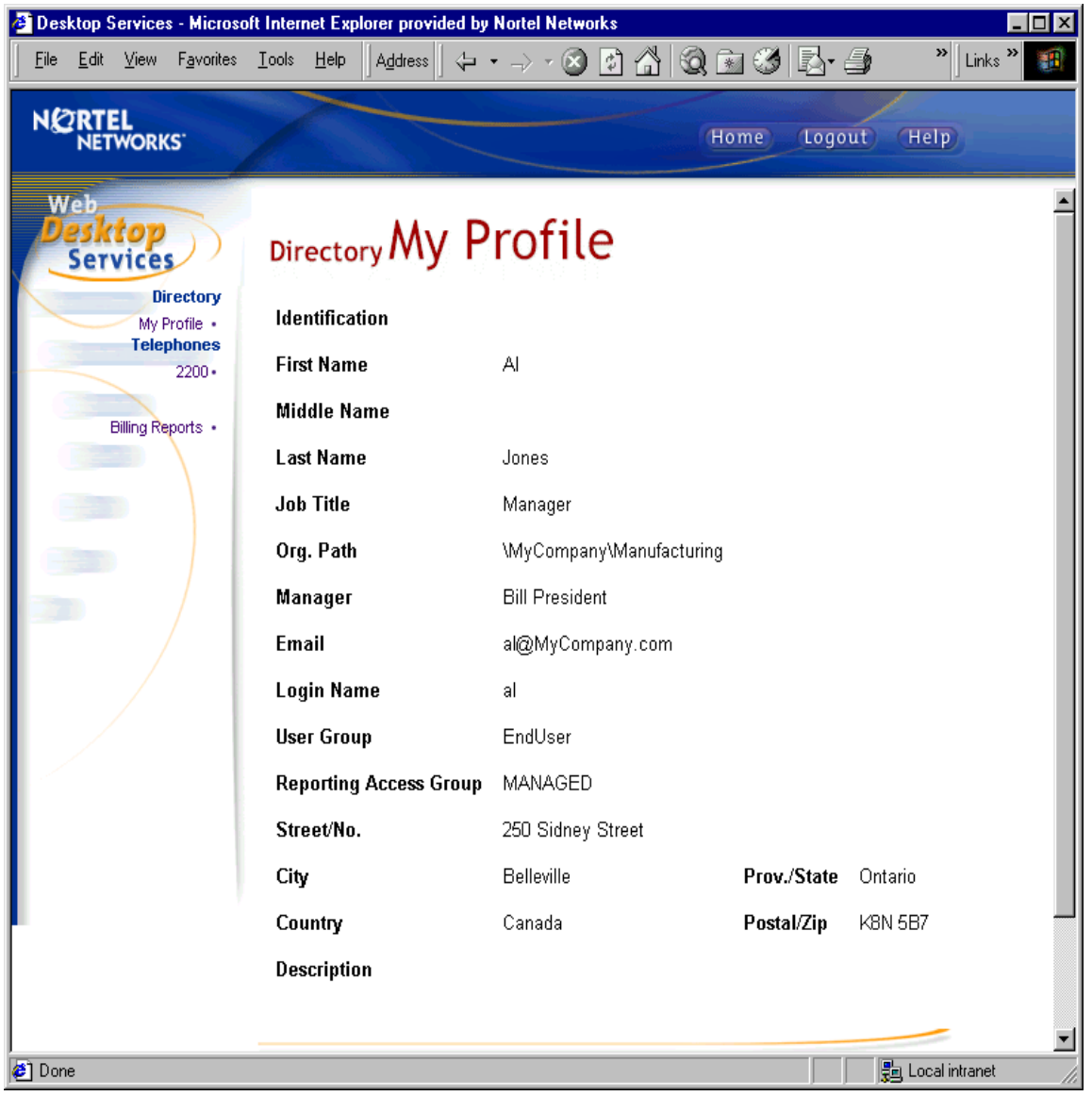
Once a user who is a member of the EndUser user group logs in to the User Login page, the My Profile page opens. This page contains general information about the user. The system retrieves this information from the OTM Directory. Click Home in the Banner or My Profile in the Navigation bar to go to this page.

The information that appears is fixed and cannot be changed. If there is no information for a field, it is left blank. Hidden fields do not appear. Only fields that are listed as read-only are visible.

- Employee first, middle, and last name
- Identification (employee ID)
- Job Title
- Org Path (this is extracted from the Organization Path in the OTM directory)
- Manager
- E-mail address
- Login Name
- User Group
- Web Reporting Role
- Address fields
- Description

Figure 182 shows an example of a My Profile Page.

Figure 182 My Profile page



Telephone pages

Administrators and HelpDesk users access the Telephone pages by logging into the Web Navigator and using the Find Telephones page. See "Find Telephones page" on page 331 for more information. End users access the Telephone pages by logging in to the end user pages as described in "User Login page" on page 383.

Note: When using the Find telephones page to access the Telephone pages, the Information Banner and the Navigation Bar shown in Figure 182, as well as the My Profile page, do not appear.

Once logged in, the end user is presented with a list of telephones in the Navigation Bar. The telephones are identified by prime DN. To get this list, the Web Server scans all the employee databases, one per Meridian 1 or Succession CSE 1000 system, on the server. If the employee has telephones in different systems, served by different OTM servers, then the employee must log in to the different servers to access these telephones.

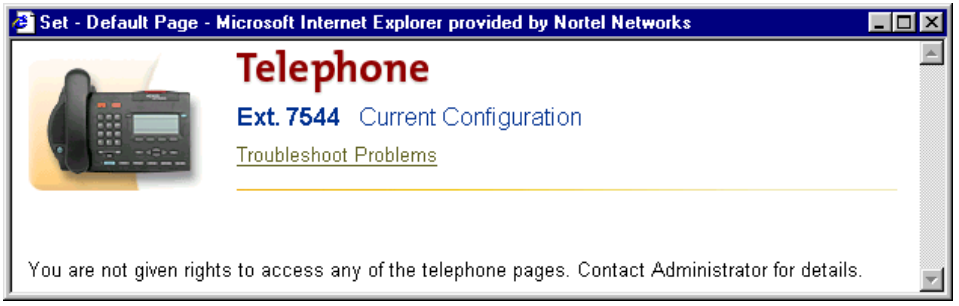
When a user clicks on a telephone in the Navigation Bar, the Telephone page appears in the Content Frame.

The Telephone page has a small graphic in the top left corner. This graphic is detailed enough for the user to recognize the type of telephone. The user's name and the prime DN of the telephone also appear.

The telephone has up to four sub-pages, accessed by links below the small telephone graphic. The capabilities provided by these web pages depends on the telephone type.

If a user's User Group settings do not allow access to at least one of the Telephone pages, the user receives a message indicating the problem (Figure 183).

Figure 183 Telephone page for user with no access

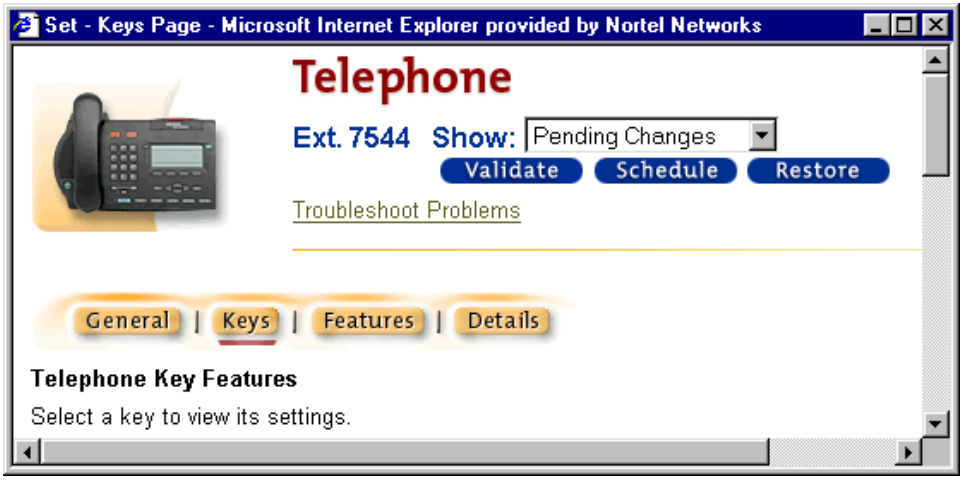


Current Configuration/Pending Changes

When the information for the telephone has been changed, but the changes have not been synchronized with the Meridian 1 or Succession CSE 1000 system, a Show Current configuration/Pending changes drop-down box allows the user to select which configuration is shown.

When there are pending changes, and the users have been assigned the “Allow Synchronization” and “Allow user to restore pending changes” options in their User Group properties, the drop-down box appears along with Schedule and Restore buttons. If the user’s access properties allow changes to the General, Keys, or Features pages, the Validate button also appears (Figure 184).

Figure 184 Configuration indication with synchronization allowed



Validate button

The Validate button is available to users who are allowed to make changes to the General, Keys, or Features pages. The Validate button is not available when the user is viewing the current configuration of a telephone. When a telephone has been marked for deletion in the OTM database, the Telephone pages show the deleted configuration. The Validate button is not available when the user is viewing the deleted configuration. The user clicks Validate to validate the changes that have been made to the configuration. The validation process determines whether there are any errors that can cause problems during synchronization with the Meridian 1 or Succession CSE 1000 system. When the user clicks Validate, if there are no errors, the page shown in Figure 185 opens. If there are errors, the Station Validation Results indicate the errors that are present in your telephone configuration (Figure 186).

Figure 185 Station Validation Results with no errors

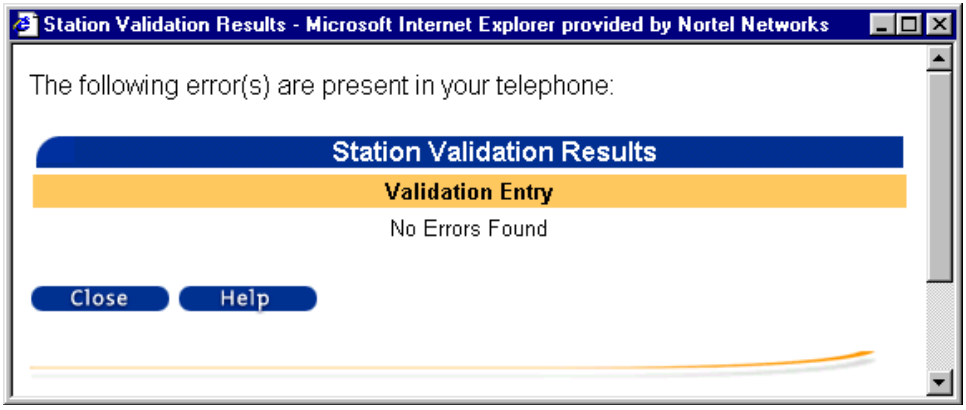
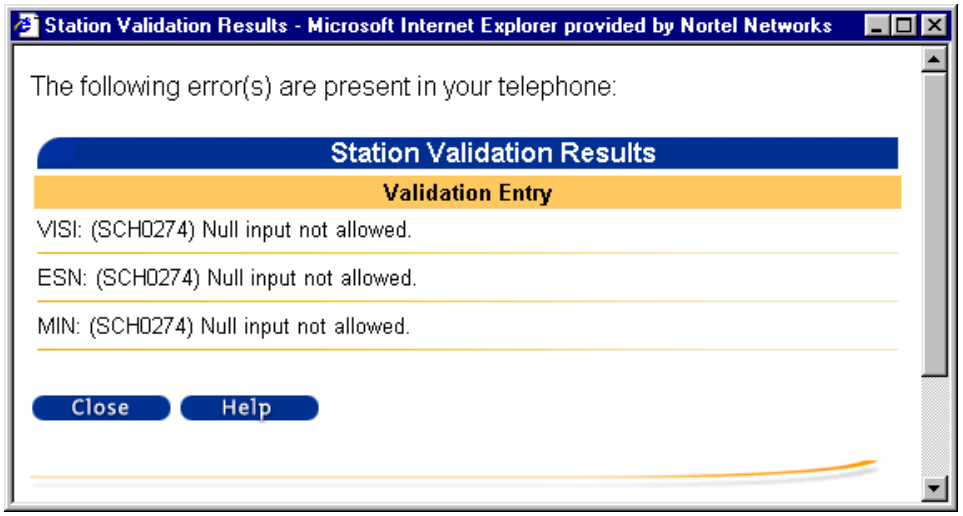


Figure 186 Station Validation Results with errors

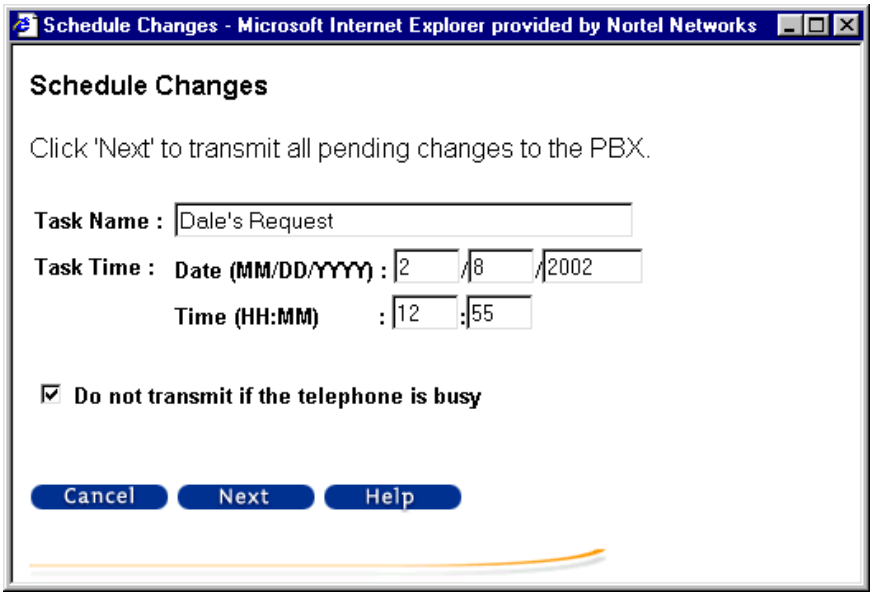


Schedule button

For telephones with pending changes, the user clicks Schedule to schedule synchronization with the Meridian 1 or Succession CSE 1000 system. When the user clicks Schedule, the Schedule Changes dialog box opens (Figure 187).

Note: Synchronization tasks are handled by the Windows scheduler on the OTM Server. The client requesting the sync does not need to be connected to the OTM Server when the task is run.

Figure 187 Schedule Changes dialog box



To schedule a sync task:

1 Enter a Task Name in the Task Name text box.

There is no limit on the number of characters in the name.

2 Use the Task Time text boxes to set the start time for the task.

Note: The boxes are pre-filled with a time value that is 2 minutes ahead of the current time.

Note: If the Task Time passes before you click Next, the task is accepted and run immediately after you click Next.

3 Click the “Do not transmit if the telephone is busy” check box to have the sync task check the status of the telephone before making changes to the telephone configuration.

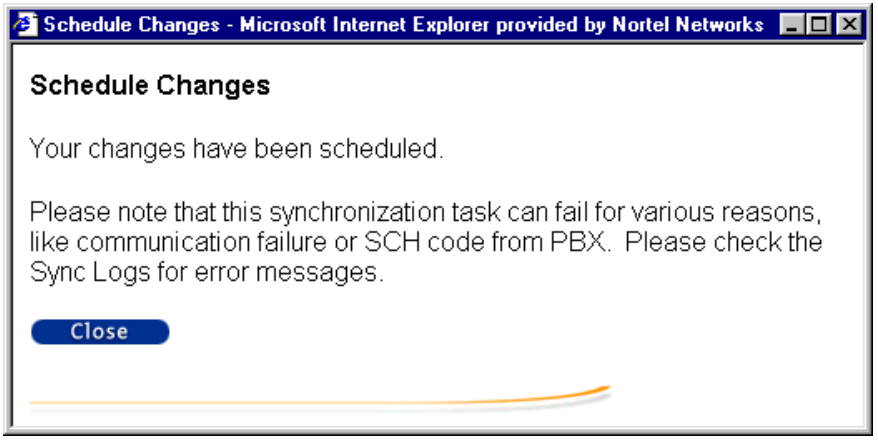
Note: If the box is not checked, and the telephone is busy, the telephone call is dropped. This is a limitation of the PBX.

Note: If the telephone is busy, the changes are not made and the event is logged in the appropriate transmit log. The transmit is not automatically rescheduled. It is up to the user to check the log and reschedule the transmit.

4 Click Next.

The Schedule Changes confirmation dialog box opens (Figure 188).

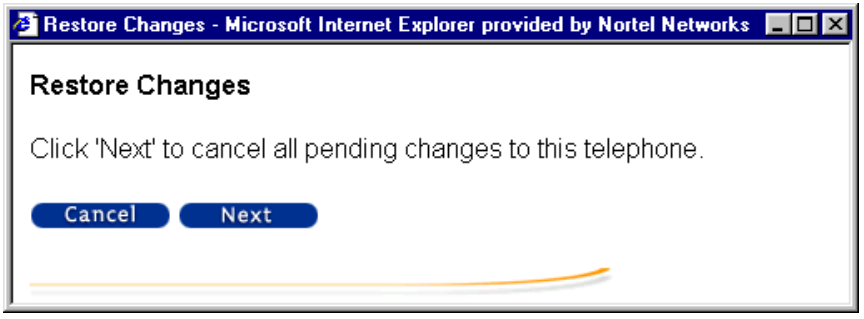
Figure 188 Schedule Changes confirmation



Restore button

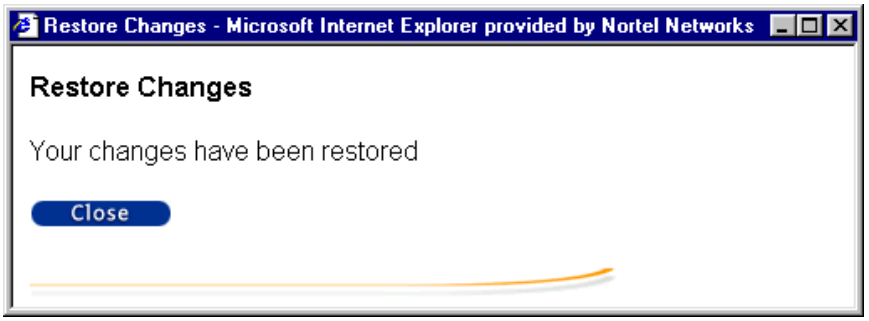
When the user clicks Restore, the Restore changes dialog box opens (Figure 189).

Figure 189 Restore Changes dialog box



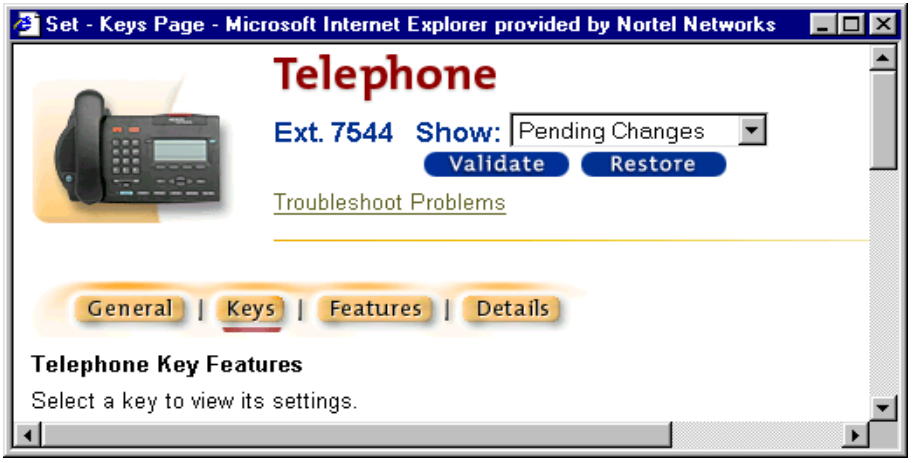
If the user clicks Cancel, the dialog box closes. If the user clicks Next, the Restore Changes confirmation dialog box opens (Figure 190).

Figure 190 Restore Changes confirmation



When there are pending changes and the user does not have the Allow Synchronization option, the drop down-box along with the Validate and Restore buttons appear (Figure 191). The user is not allowed to schedule synchronization.

Figure 191 Configuration indication with synchronization not allowed



When the telephone and the Meridian 1 or Succession CSE 1000 system are synchronized, “Current Configuration” appears at the top of the page, and the drop-down box no longer appears (Figure 192).

Figure 192 Configuration indication when there are no pending changes

Telephone General page

The General page provides general information about the telephone. The following information appears on the Telephone General page:

- **Station Location** - A text field similar in purpose to the System field. You may want to use this to provide more user friendly names.

Note: If you use Find Telephones to access the Telephone pages, you should click Refresh from Database button on the Find Results page after you modify a telephone's location. This updates the Location information and the HTML link to the Telephone pages. See "Find Results page" on page 333.

- **System** - Identifies the site, system, and customer number, if applicable, where the phone is connected. This information is retrieved from OTM common services and appears in the format "Site - System - Customer x".
- **Phone type** (M2317, M2616, M3903, and so on)
- **Terminal Number** (TN): Address of the telephone
- **Key Based Modules**

- **Designation** - A unique 1–8 character telephone identifier. This data is stored in station data and the overlays. This field is often used to identify the location of the phone within the building (for example, cable pair), and is the response to the prompt DES in LD 10 and LD 11.

Figure 193 shows an example of the Telephone General page.

Figure 193 Telephone General page

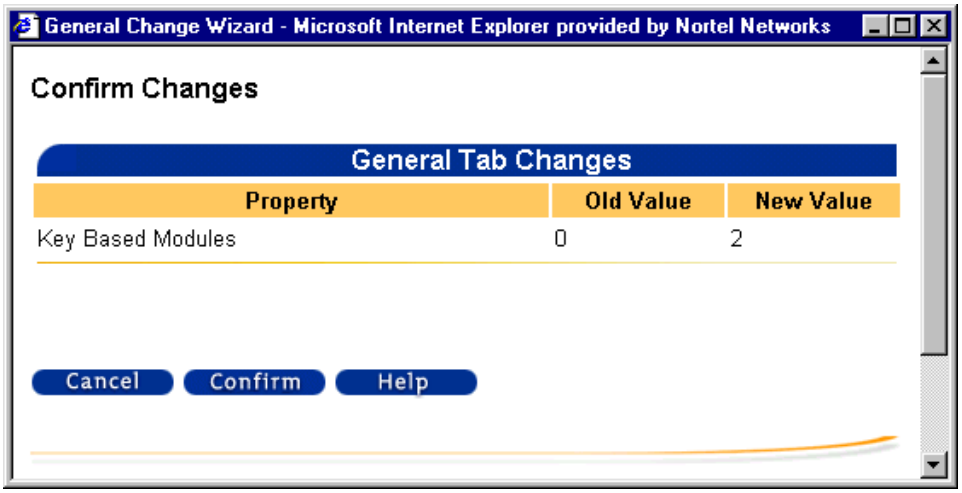
The following fields may be changed by users if allowed by their User Group's Telephone access properties:

- Station Location
- Display Based Modules

- Key Based Modules
- Designation

If the user changes one or more of these fields and clicks Submit, the Confirm Changes dialog box opens (Figure 194).

Figure 194 Confirm changes to the General Phone Properties page



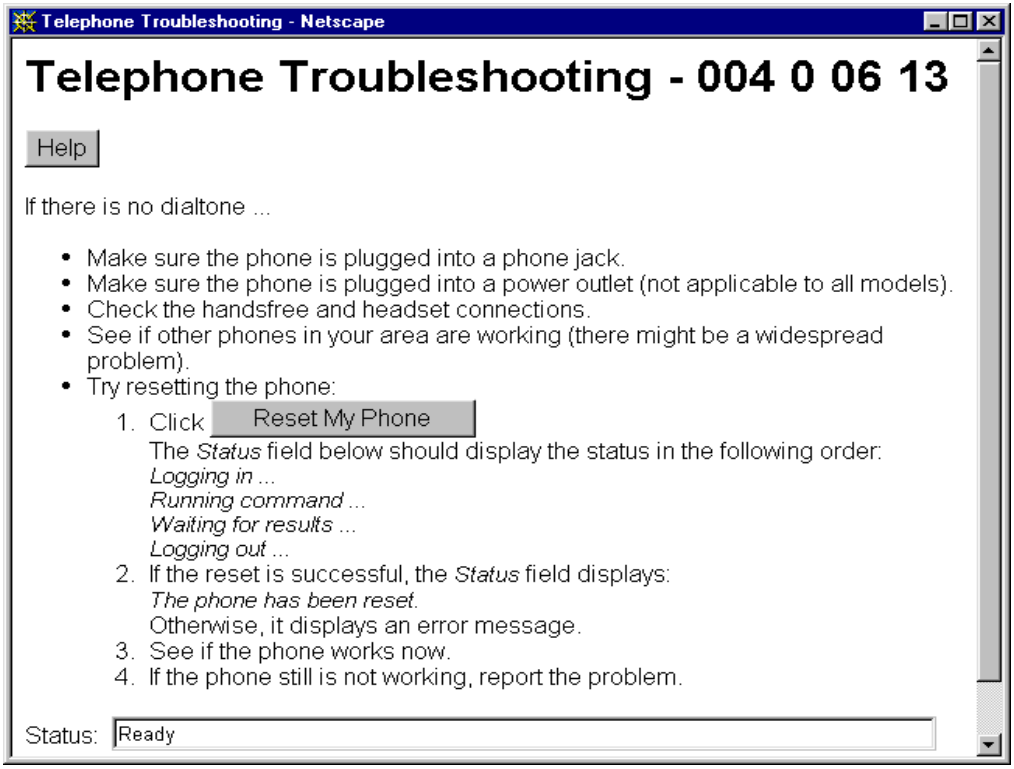
The user verifies the information and clicks Confirm. If there are no errors, a change confirmation page opens. See "Change confirmation pages" on page 419 for more information. If there is an error in the proposed change, error details appears instead of the change confirmation page.

Telephone Troubleshooting page

The Troubleshoot Problems link, at the top of the Telephone pages, provides access to the Telephone Trouble Shooting page. You can access the Telephone Troubleshooting page from the Telephone pages via the Troubleshoot Problems link. The Telephone Troubleshooting page is shown in Figure 195. The Reset My Phone button performs an enable and status command on this telephone via a Maintenance Windows API.

Note: For the Troubleshoot Problems link to function properly, the user's User Group must be configured to allow access to the switch.

Figure 195 Telephone Troubleshooting page



Telephone Keys page

The Telephone Keys page displays a graphical layout of the function keys assigned to the telephone. The layout varies for different telephone types.

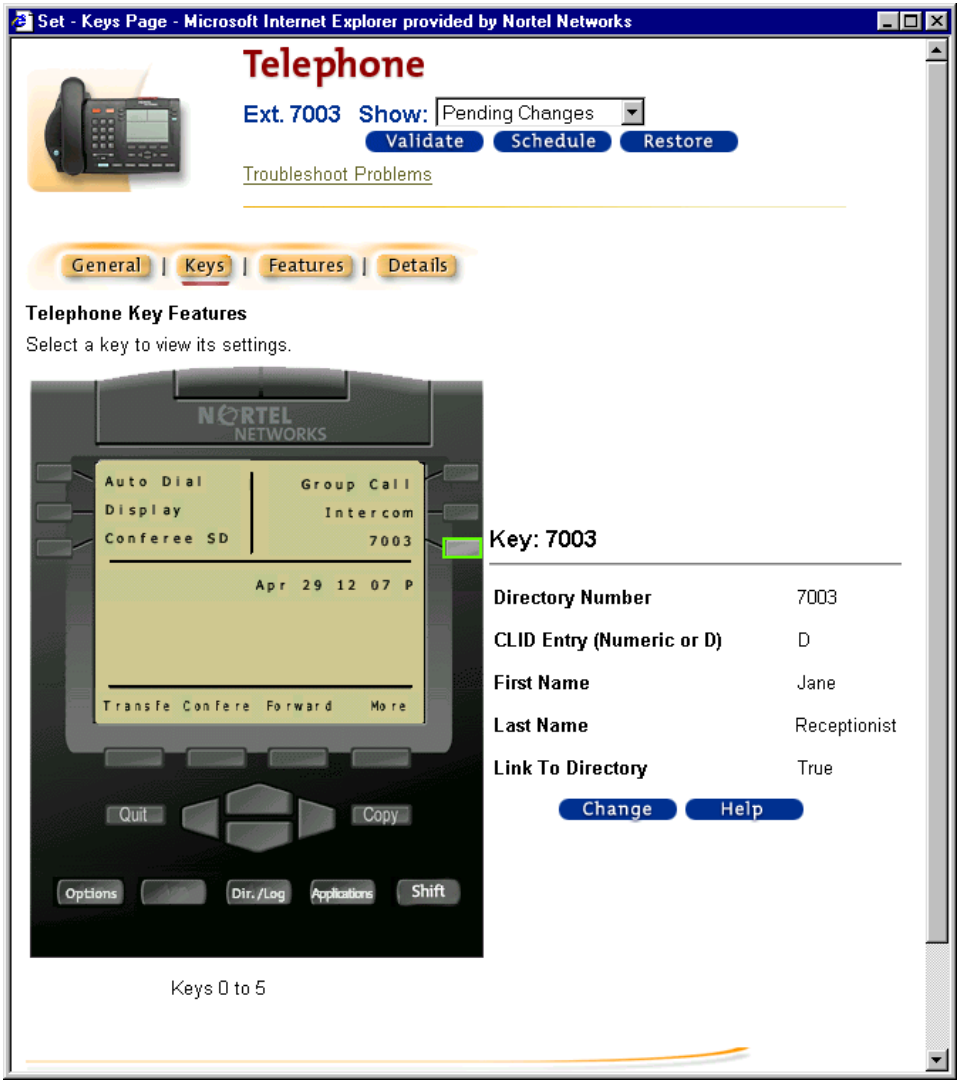
All current feature key assignments are always visible. The key labels on the graphic match the labels in Station Administration. For M3900 series and IP telephones these labels match the soft labels on the set, and the text is shortened to 7 characters. When the page first appears, key 0 is selected. You can select other keys by clicking on a key. Click the Shift key to access the second layer of keys on the M3903, M3904, and IP telephones. From the second layer of keys, you can access the display-based or key-based expansion module keys. Figure 196 shows an example of the first layer of keys on the Telephone Keys page for an M3904 telephone.

When a key is selected, the following occurs:

- The key is highlighted. The method used to highlight depends on the phone type.
- The name of the key and its configurable parameters, if any, appear beside the telephone graphic.

A Help button takes you to help on how to use the selected key.

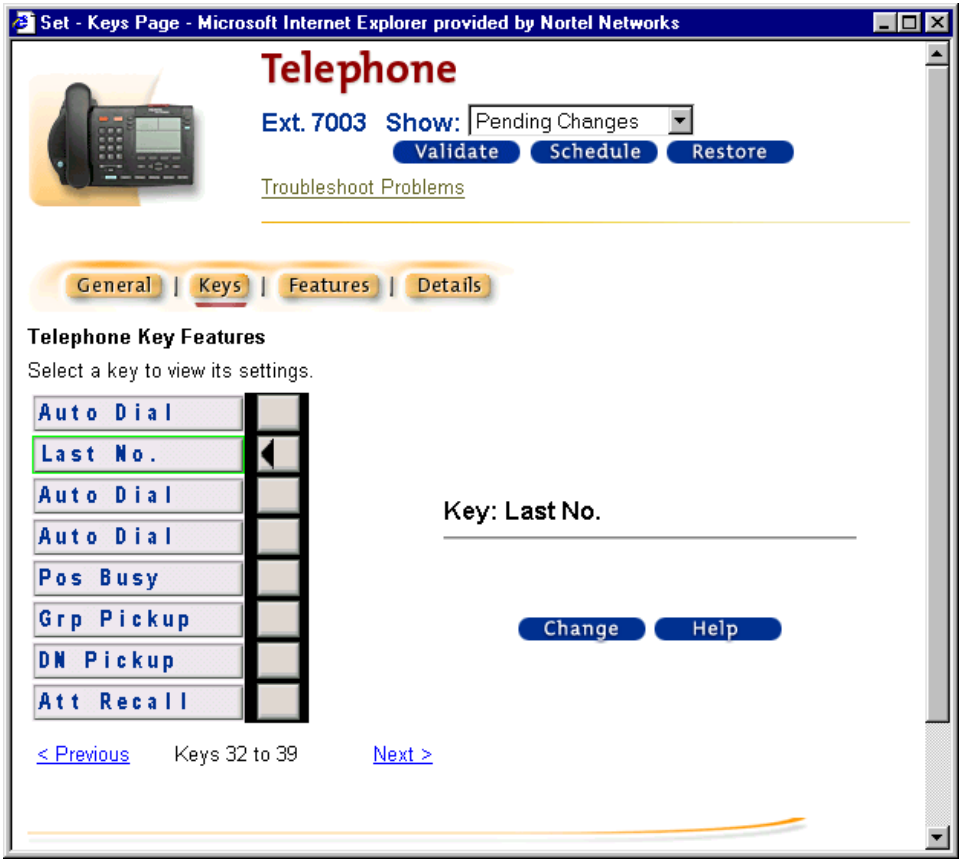
Figure 196 Telephone Keys page



If the telephone has a display-based expansion module, a graphic indicates which set of keys appears. Use the Next and Previous buttons to “scroll” the graphic from one set of keys to the other.

Figure 197 shows the user interface for the keys associated with a display-based expansion module attached to the M3904 shown in Figure 196.

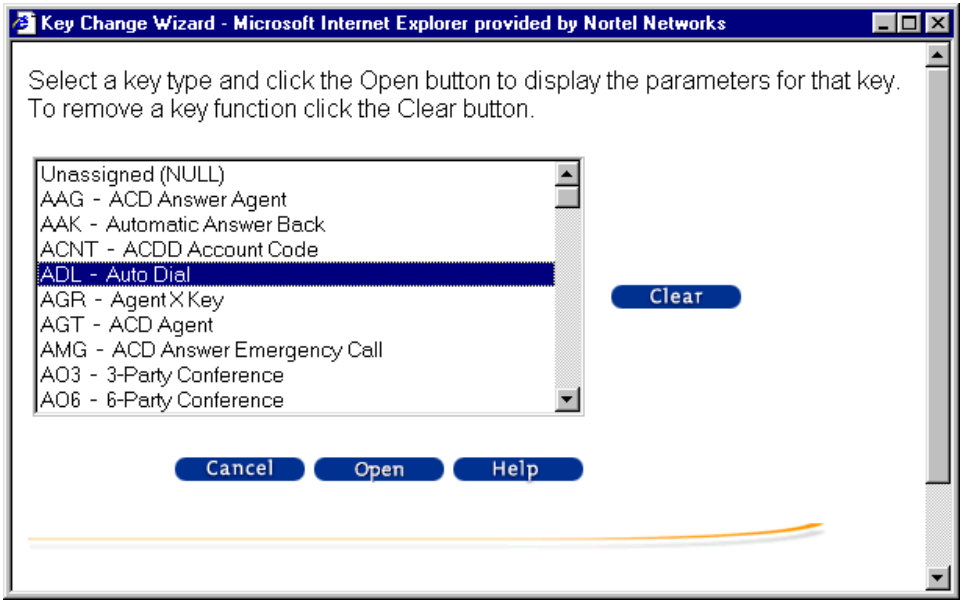
Figure 197 Telephone Keys page — display-based expansion module keys



Changing a key

If permitted by your User Group access properties, when you click Change after selecting a key, a new browser window opens with the appropriate controls for changing the key you selected. In this browser window, a list of the possible key choices appears (Figure 198). This list is dynamic and is based on both the telephone type and the key selected. For example, key 17 on an M2317 telephone must be a transfer key.

Figure 198 Select Auto Dial key type



The Help button is context-sensitive and accesses the information in the Input/Output guide on configuring a key for the selected feature or service.

The key's parameters, if any, appear on subsequent pages of the wizard.

Note: The Clear button removes the key function and takes the user to the next page in the key change wizard. As shown in Figure 198, if the telephone key that you have selected is currently unassigned (null), the Clear button does not appear.

Changing the parameters of an Auto Dial key

Use the following procedure to change the telephone number assigned to an Auto Dial key:

1. Click an Auto Dial key in the graphic on the Telephone Keys page.
2. Click Change. The Key Change Wizard launches.
3. Click "ADL — Auto Dial" in the list of key types (Figure 198).

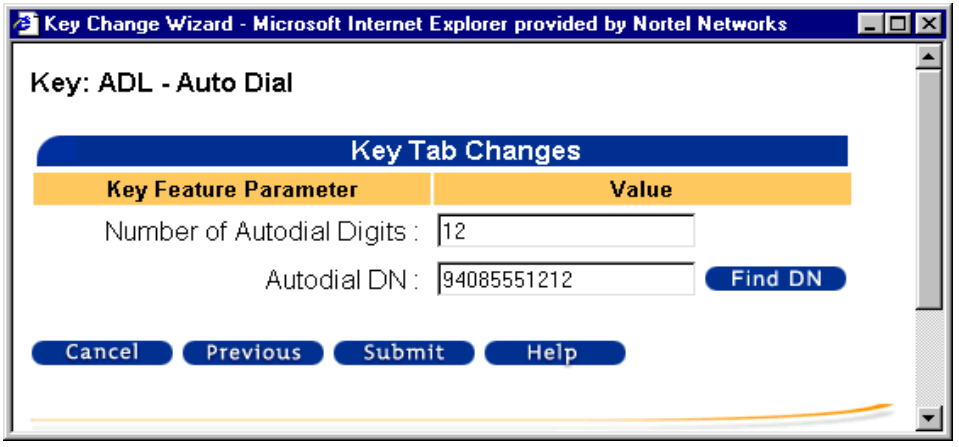
4 Click Open.

5 Type the new maximum number of autodial digits and the new Autodial DN in the edit boxes (Figure 199).

Note: If you change the Number of Auto Dial digits to a value that is greater than the default number in the Meridian 1 or Succession CSE 1000 system, or if you enter an Auto Dial Number that has more digits than the default value, you receive a validation error.

Note: You use the Find DN button to look up Directory Numbers. It appears whenever there is a DN edit box. For information on using the Find DN button, see "Finding Directory Numbers" on page 411.

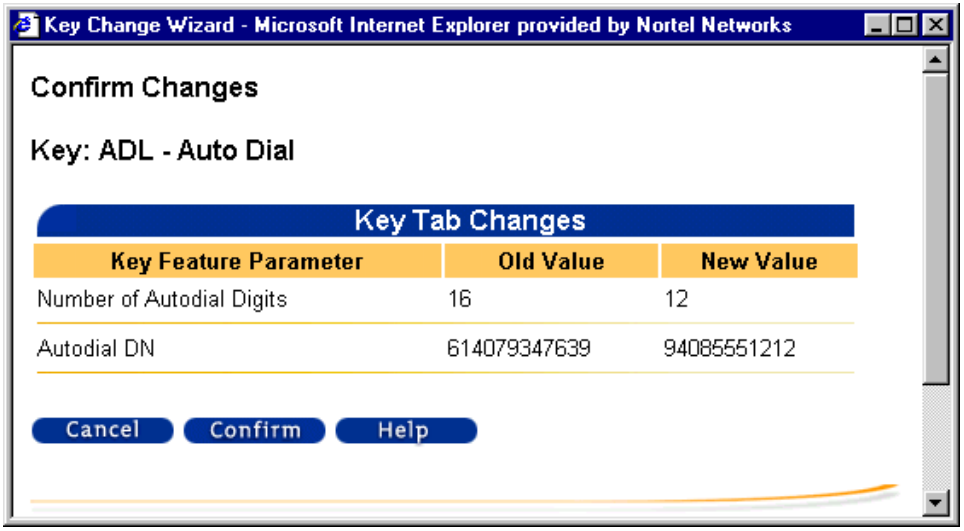
Figure 199 Autodial key change wizard



6 Click Submit.

The key change summary page opens (Figure 200).

Figure 200 ADL key change summary



7 Click Confirm.

A confirmation page appears. See “Change confirmation pages” on page 419.

Changing the parameters of an MCR DN key

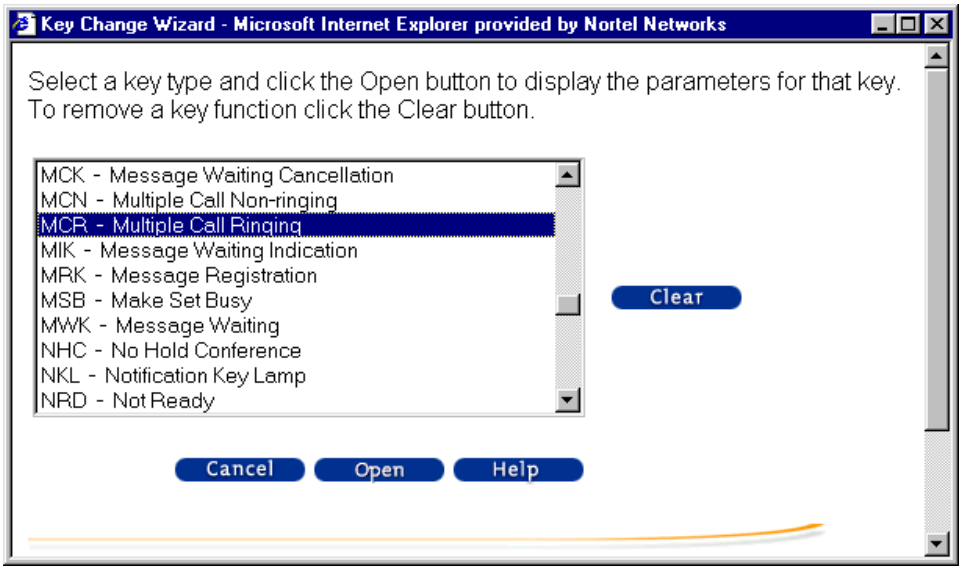
Use the following procedure to change the first name and last name parameters associated with an MCR DN key:

1 Click an MCR DN key in the graphic on the Telephone Keys page (Figure 196 on page 399).

2 Click Change.

The Key Change Wizard launches. The current key type, “MCR - Multiple Call Ringing,” is highlighted (Figure 201).

Figure 201 Select Multiple Call Ringing key type



3 Since you are not changing the key type, simply click Open.

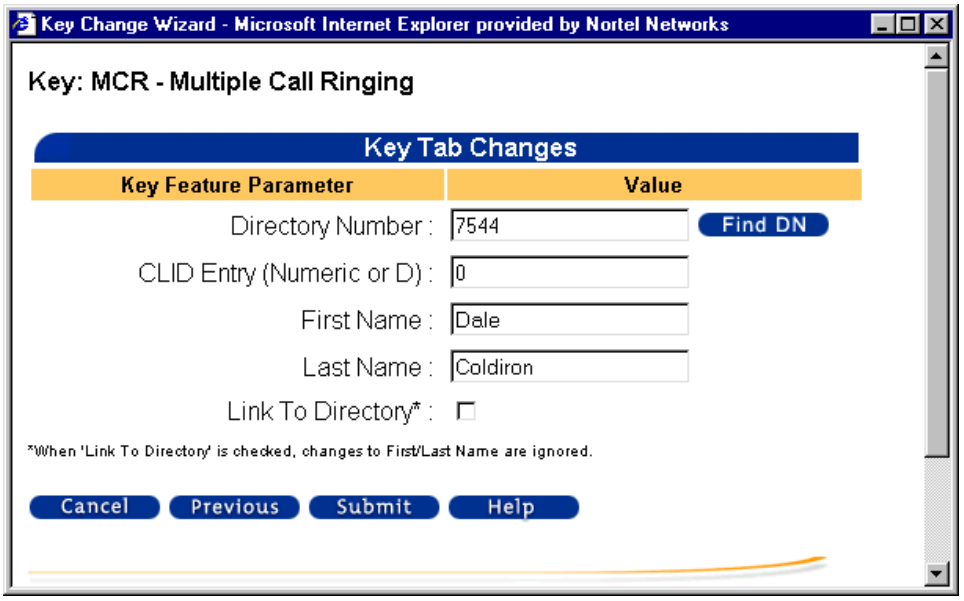
The key change wizard displays the current parameters for the selected key (Figure 202).

Note: You can only modify the DN, CPND, and CLID. You may not view or change the DN's Voice Mailbox, ANI, or MARP.

Note: When the Name Display Link to Directory check box is checked in Station Administration, the values for the First Name and Last Name fields are obtained from the directory and are not editable.

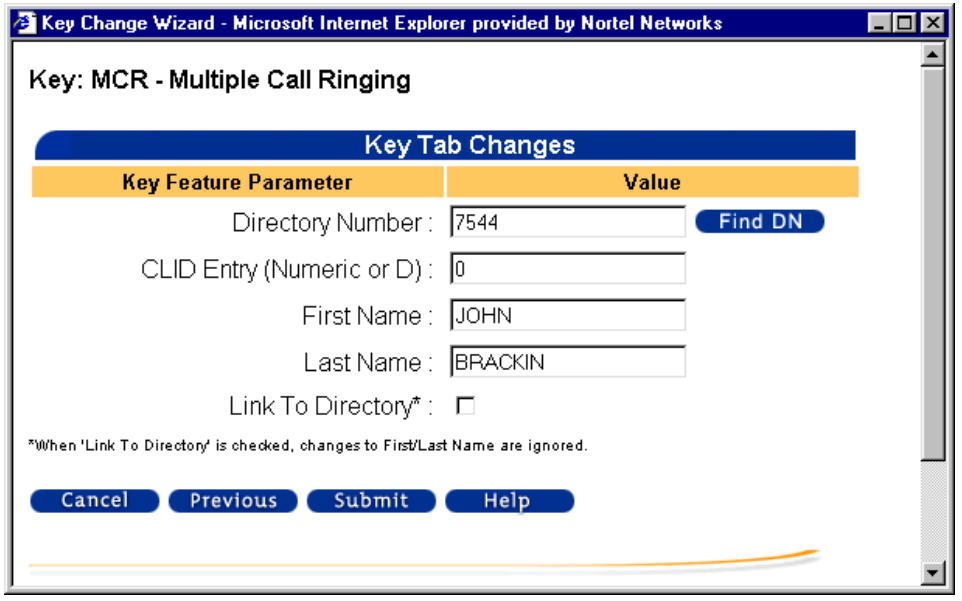
Note: If the key change wizard does not display a Directory Number, or if you want to change the Directory Number, see "Finding Directory Numbers" on page 411.

Figure 202 Current parameters for Multiple Call Ringing DN key



4 Change the First Name and Last Name (Figure 203).

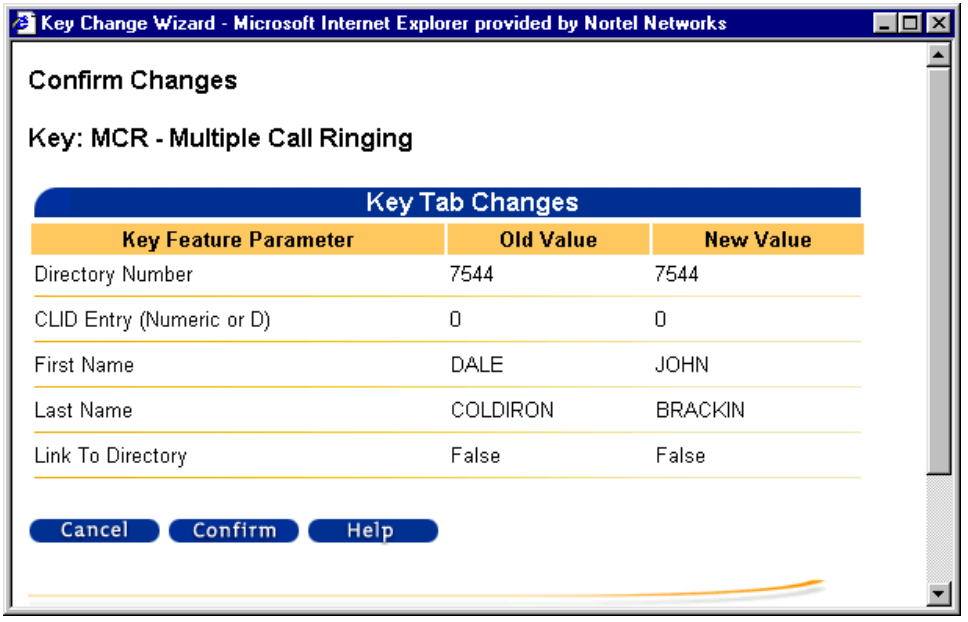
Figure 203 Changed parameters for Multiple Call Ringing DN key



5 Click Submit.

A summary page opens that displays your changes (Figure 204).

Figure 204 MCR key change summary page



6 Click Confirm. A confirmation page appears. See "Change confirmation pages" on page 419.

Changing a feature key type

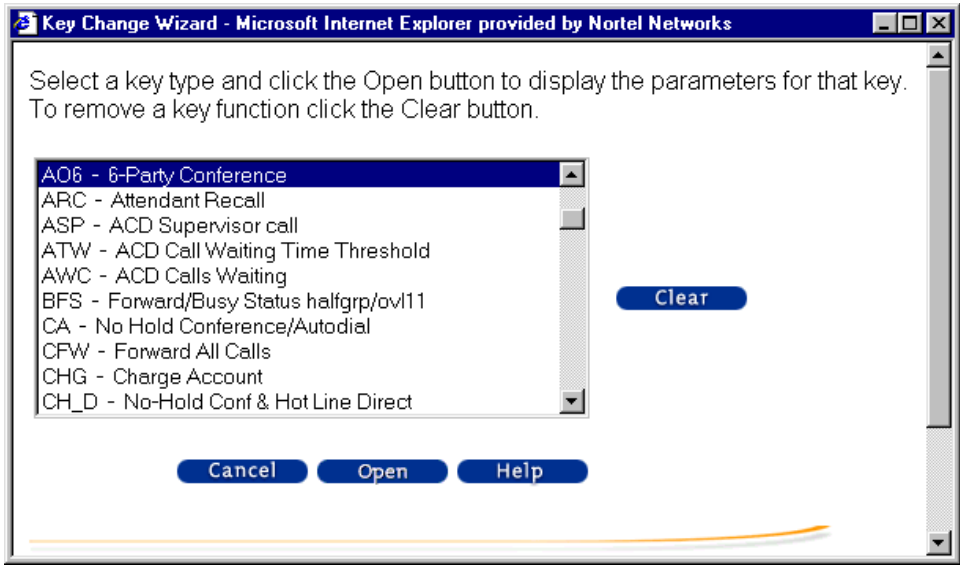
Use the following procedure to change a Conference key to a Call Forward key:

1 Click the Conference key in the graphic on the Telephone Keys page (Figure 196 on page 399).

2 Click Change.

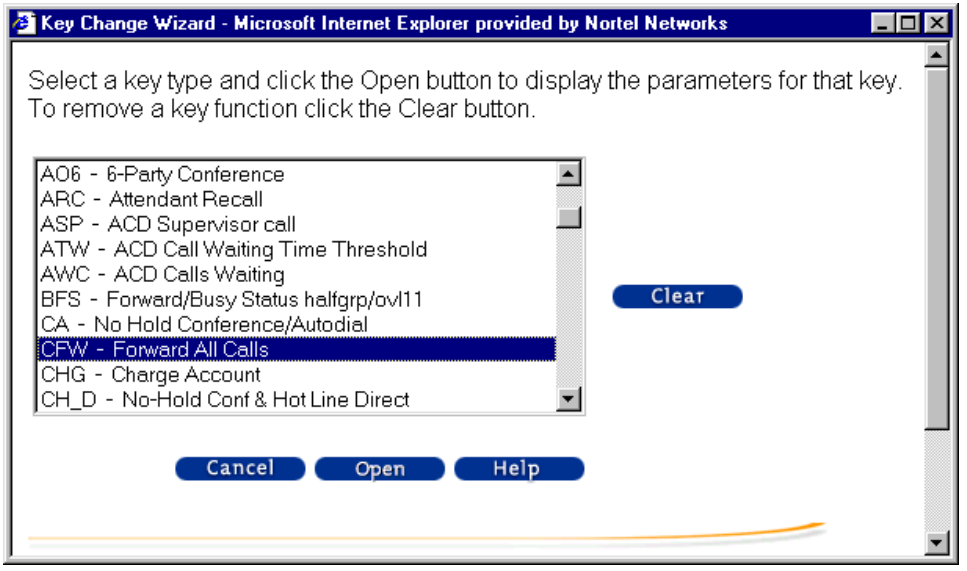
The Key Change Wizard launches. The current key type is highlighted (Figure 205).

Figure 205 Key Change Wizard displaying current key type



3 Click “CFW - Forward All Calls” in the list of key types (Figure 206).

Figure 206 Select the Forward All Calls key type

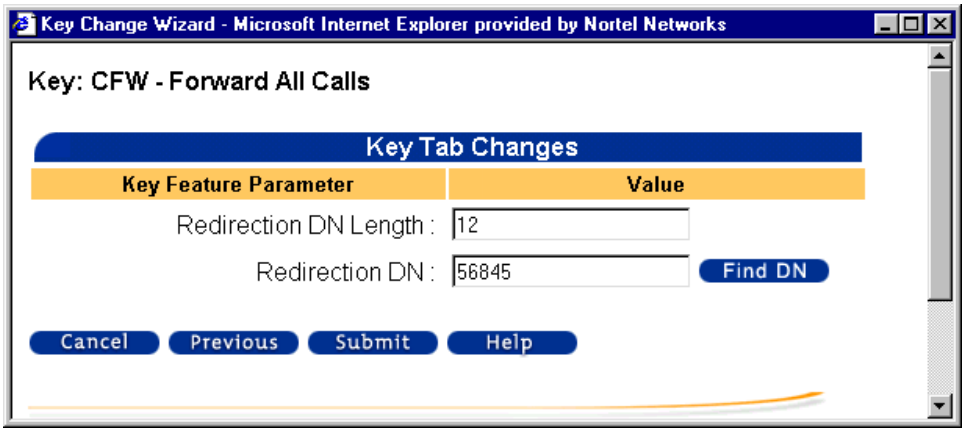


4 Click Open.

5 Enter the Redirection DN Length and Redirection DN in the edit boxes (Figure 207).

Note: When changing a key type, the default values do not appear. If you enter a Redirection DN length that is greater than the default value in the Meridian 1 or Succession CSE 1000 system, or if you enter a Redirection DN that has more digits than the default value, you receive a validation error.

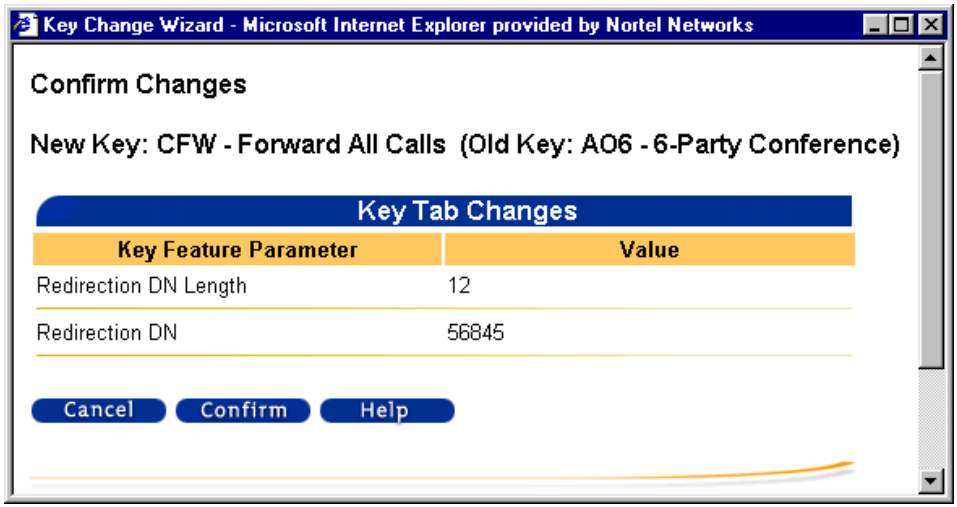
Figure 207 Forward All Calls Key Change Wizard



6 Click Submit.

The key change summary page opens (Figure 208).

Figure 208 CFW key change summary page



7 Click Confirm.

A confirmation page appears. See "Change confirmation pages" on page 419.

Removing a key

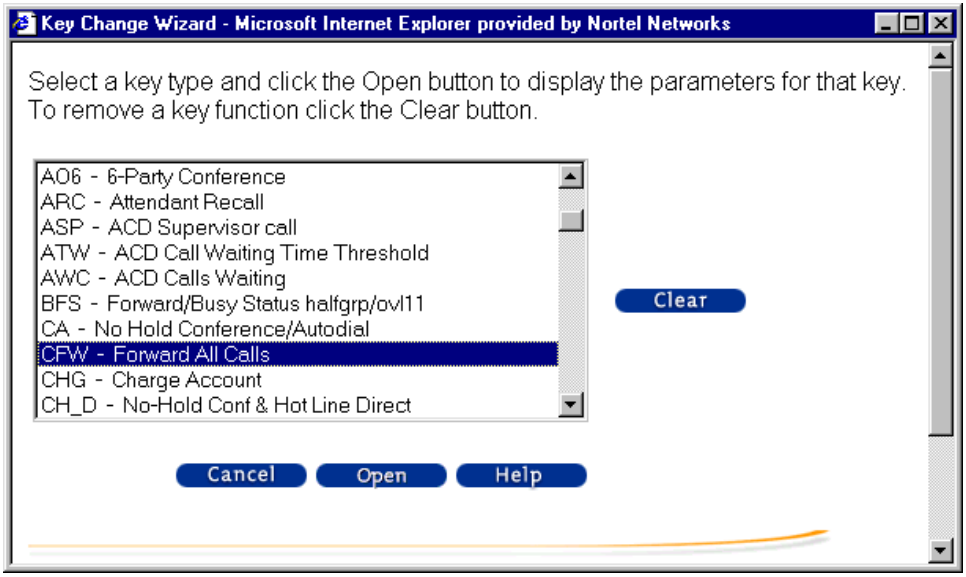
Use the following procedure to remove the function associated with a key, creating a blank, or unassigned, key:

1 Click a key in the graphic on the Telephone Keys page (Figure 196 on page 399).

2 Click Change.

The Key Change Wizard launches. The function associated with the selected key is highlighted in the list (Forward All Calls in this example) (Figure 209).

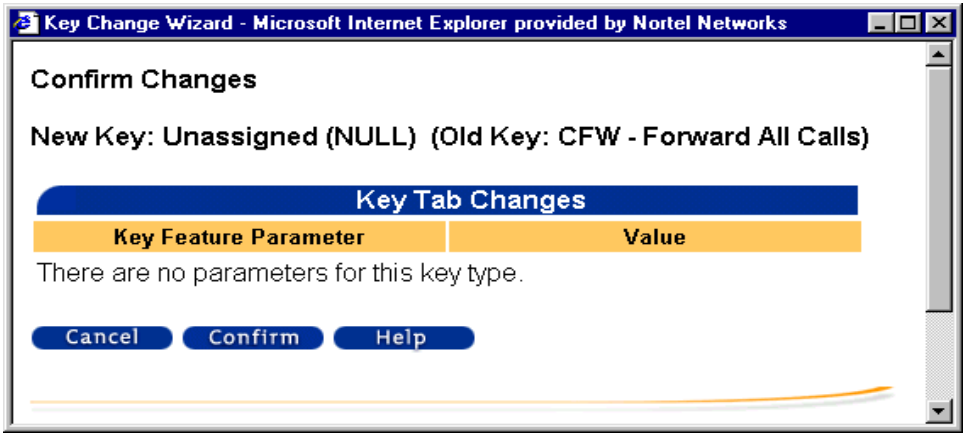
Figure 209 Current key function displayed in the Key Change Wizard



3 Click Clear.

The key change summary page appears (Figure 210).

Figure 210 Unassigned key change summary page



4 Click Confirm.

A confirmation page appears. See “Change confirmation pages” on page 419.

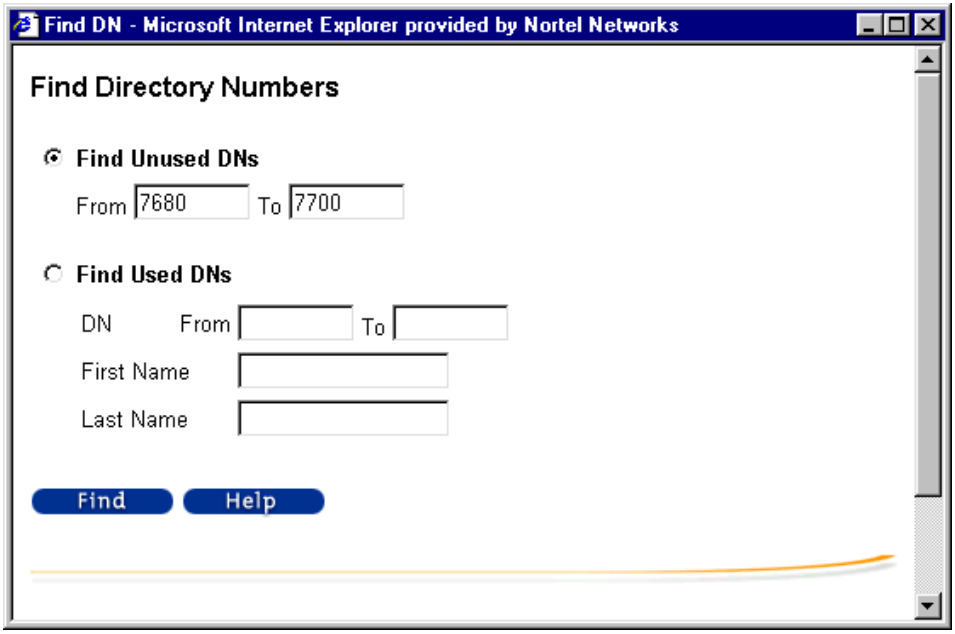
Finding Directory Numbers

You use the Find DN button to look up used or unused Directory Numbers. It appears next to the edit box for any DN key.

Find Unused Directory Numbers

1 Click Find DN (Figure 202 on page 405). The Find Directory Numbers page appears (Figure 211).

Figure 211 Find Directory Numbers page



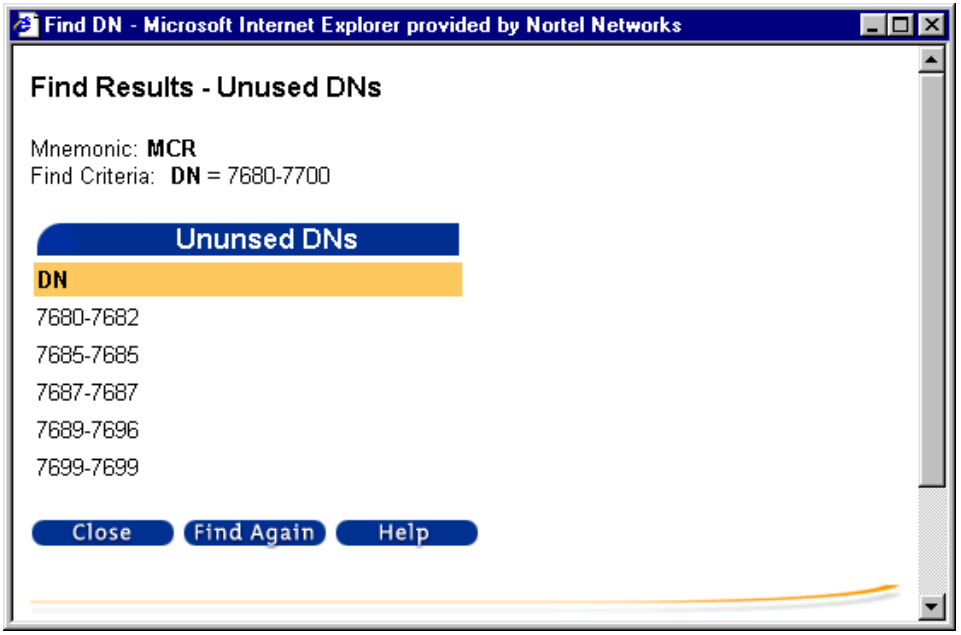
2 Click Find Unused DNs.

3 Enter a range of DNs on which to search.

Note: You must have a Numbering Plan defined in the System Properties in OTM Windows Navigator to use the Find Unused DNs feature. If the Numbering Plan is not defined, or if there are no unused DNs, an error message appears (Figure 213).

4 Click Find. If unused DNs are found, a page similar to the example shown in Figure 212 appears. If there are no unused DNs found, the message shown in Figure 213 appears.

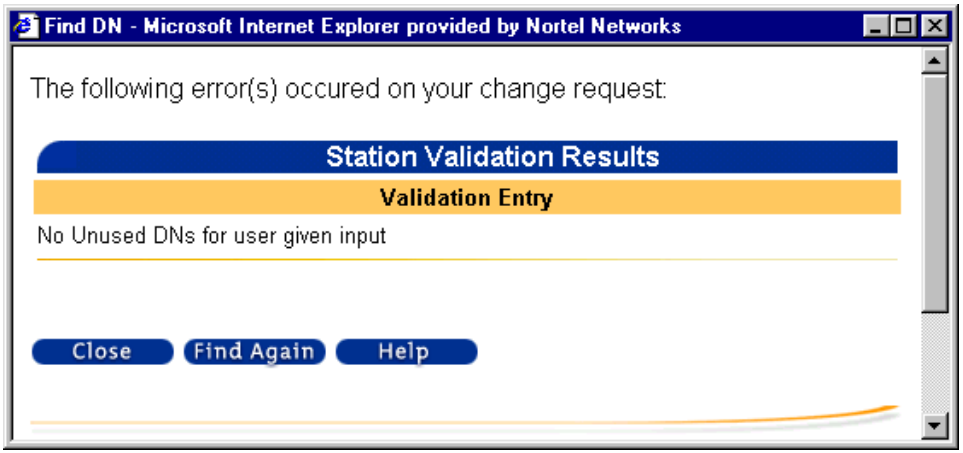
Figure 212 Find results when Unused DNs exist



Note: Only the unused DNs belonging to the same site, system, and customer as the telephone are shown.

Note: If you click Find Again, you return to the previous page, and you can enter a different range of DNs.

Figure 213 Find results when no Unused DNs exist



Find Used Directory Numbers

1 Click Find DN (Figure 202 on page 405). The Find Directory Numbers page opens (Figure 211 on page 411).

2 Click Find Used DNs.

3 Click the radio button that corresponds to your search criteria.

- To search by DN, enter a range of DNs on which to search.
- To search by last name, enter the last name of the person whose name is assigned to the DN you are seeking.
- To search by first name, enter the first name of the person whose name is assigned to the DN you are seeking.

4 Click Find. If DNs that match your search criteria are found, a page similar to the example shown in Figure 214 appears. If there are no DNs that match your search criteria, a message similar to the one shown in Figure 215 appears.

Figure 214 Find results when there are matching used DNs

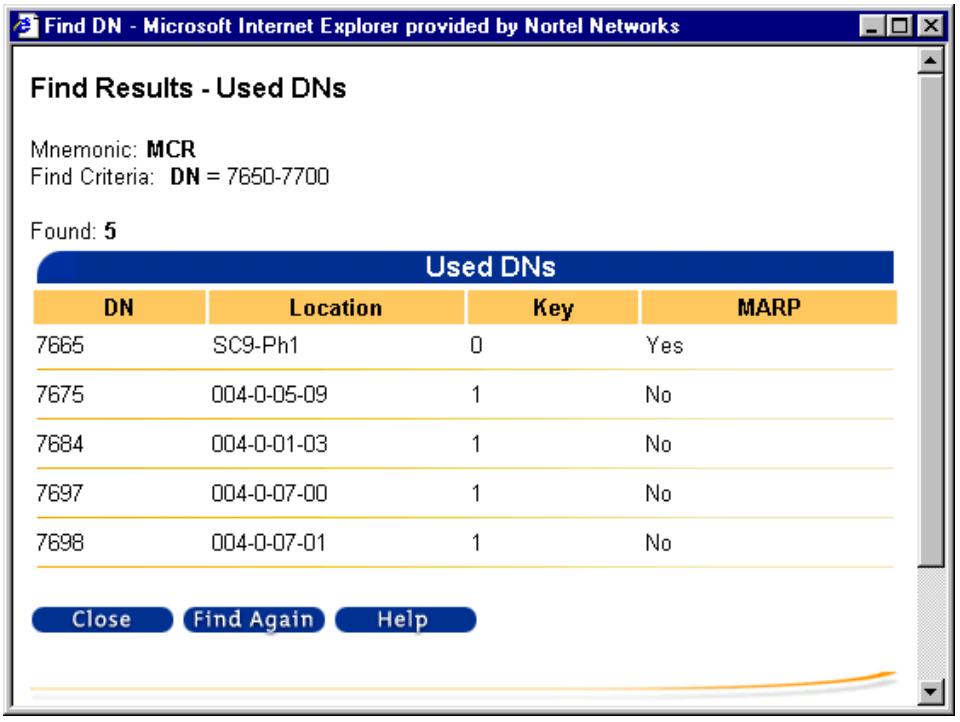
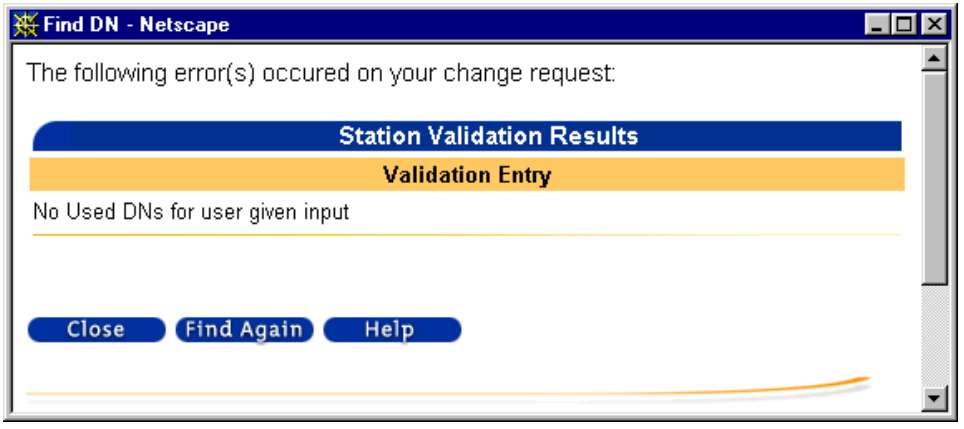


Figure 215 Find results when there are no matching used DNs



Telephone Features page

The Telephone Features page allows you to view and change features that are not assigned to keys. Features are related to individual prompts in LD 10 or 11, with one or more configurable parameters.

The administrator determines which features the user can see in the list. If the User Group access properties allows changes, the Submit and Reset buttons appear (Figure 216).

Whenever possible, a drop-down list box containing all possible values for the feature is provided. In cases where this is not possible, for example when entering a call forward DN, an edit box is provided.

Figure 216 Telephone Features page

Telephone Details page

The Telephone Details page provides a summary of the complete telephone configuration. It consists of two tables, one for the keys (Figure 217), and one for the features (Figure 218).

Figure 217 Telephone Details layout (Keys)

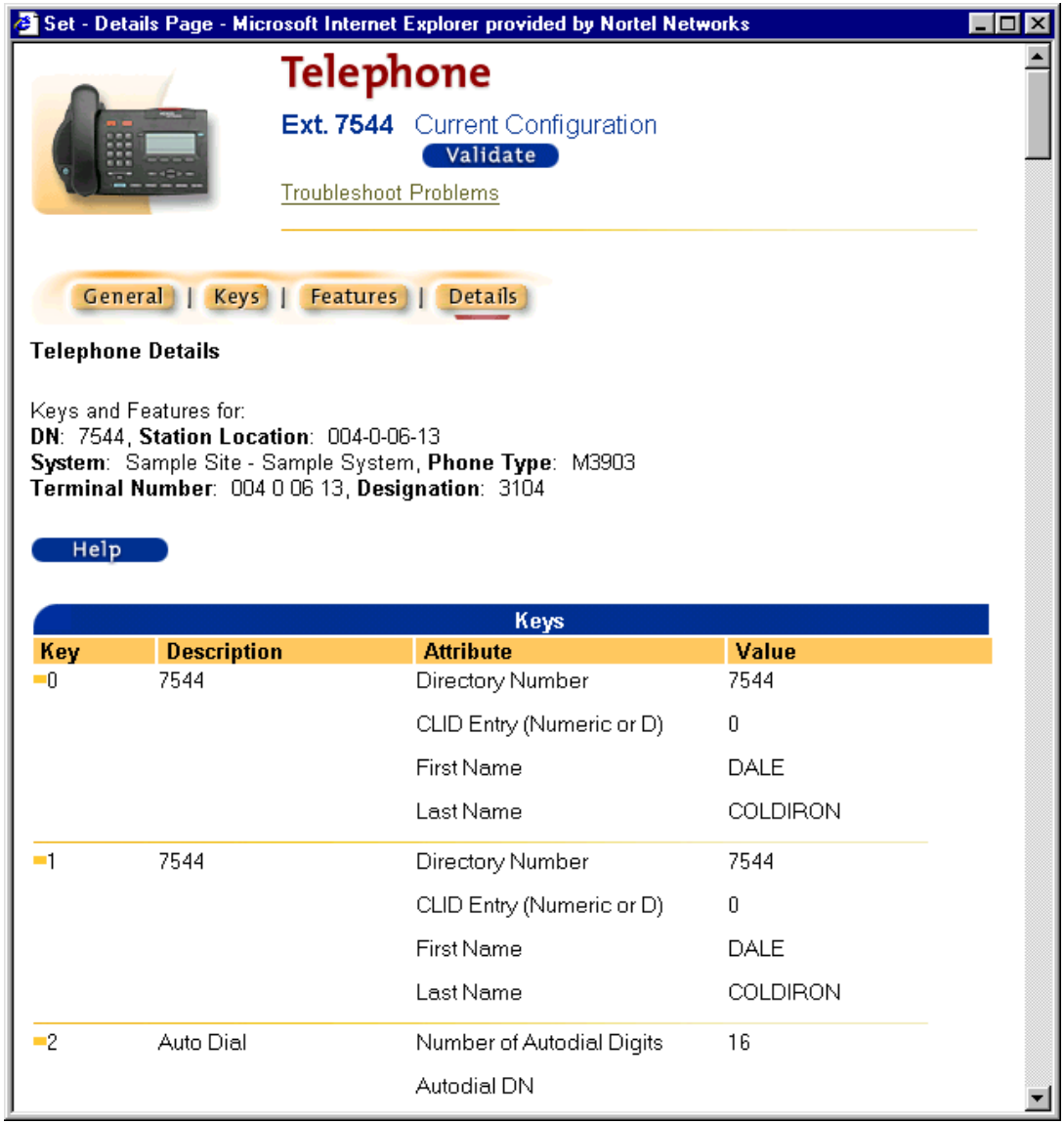
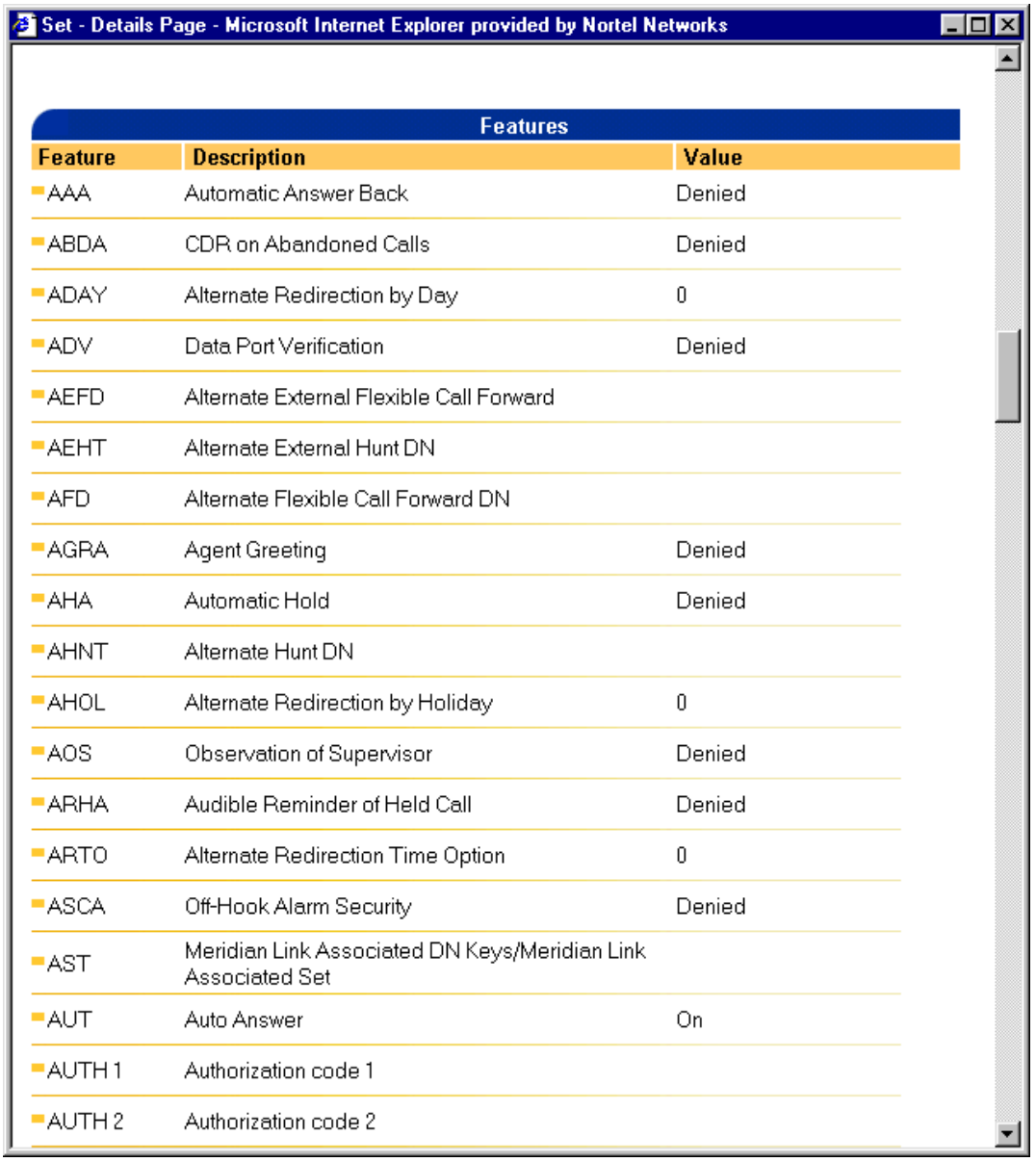


Figure 218 Telephone Details layout (Features)



Features

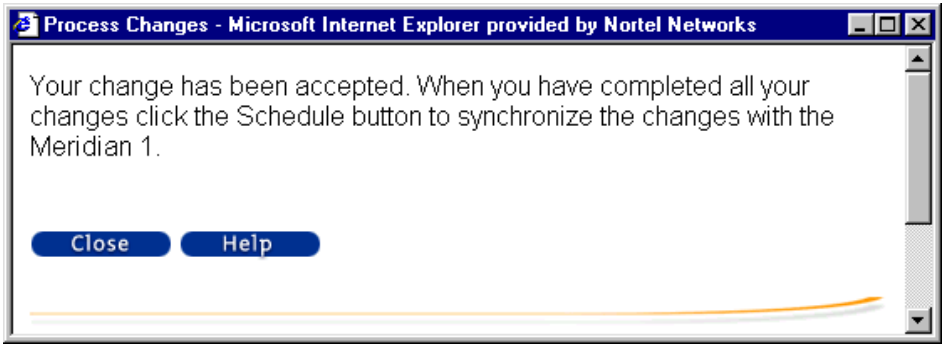
Feature	Description	Value
AAA	Automatic Answer Back	Denied
ABDA	CDR on Abandoned Calls	Denied
ADAY	Alternate Redirection by Day	0
ADV	Data Port Verification	Denied
AEFD	Alternate External Flexible Call Forward	
AEHT	Alternate External Hunt DN	
AFD	Alternate Flexible Call Forward DN	
AGRA	Agent Greeting	Denied
AHA	Automatic Hold	Denied
AHNT	Alternate Hunt DN	
AHOL	Alternate Redirection by Holiday	0
AOS	Observation of Supervisor	Denied
ARHA	Audible Reminder of Held Call	Denied
ARTO	Alternate Redirection Time Option	0
ASCA	Off-Hook Alarm Security	Denied
AST	Meridian Link Associated DN Keys/Meridian Link Associated Set	
AUT	Auto Answer	On
AUTH 1	Authorization code 1	
AUTH 2	Authorization code 2	

Change confirmation pages

A confirmation page appears when you click Confirm in the change summary page for the General, Keys, or Features tab. The confirmation page varies based on the User Group access properties.

When the User Group access properties allow the Meridian 1 or Succession CSE 1000 synchronization option, the page shown in Figure 219 appears.

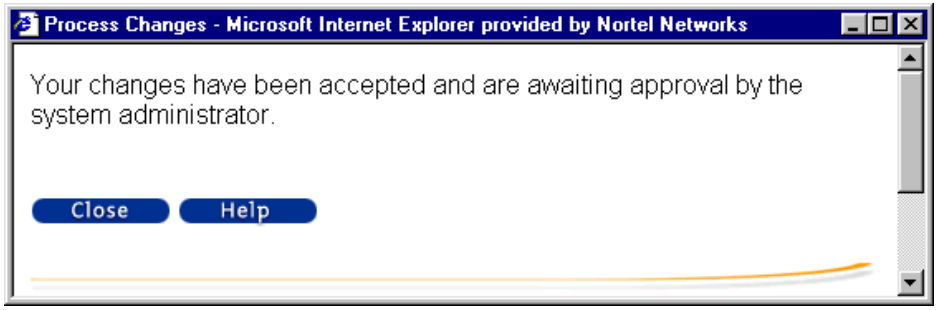
Figure 219 User confirmation with automatic synchronization



If the User Group access properties do not permit automatic synchronization, any changes that have been input occur the next time you perform a synchronization, and the page shown in Figure 220 appears.

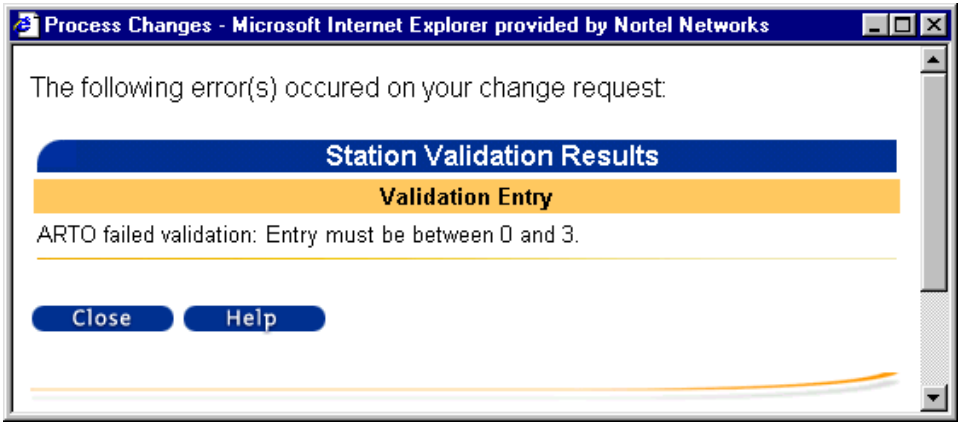
Note: Use Station Administration to view pending changes. Revert any scheduled changes that you do not want to occur prior to synchronization.

Figure 220 User confirmation when system administrator approval is required



If there is a validation error, the user is presented with an error message similar to the example shown in Figure 221.

Figure 221 Example of a validation error message



Telephone change procedure for an End User

The following procedure outlines the steps that a user, who is a member of the EndUser user group, takes to make changes to their telephone.

1. Launch a supported web browser and navigate to the OTM host name or IP address provided by the System Administrator.
2. Log in to Desktop Services using the end user Windows NT login name provided by your System Administrator.

   The My Profile web page appears. This contains your OTM Directory information (Figure 182 on page 386).
3. Click a telephone extension link in the Navigation Bar.

   The General page appears. If allowed by your System Administrator, you can change the Station Location, Key Based Modules, and Designation fields (Figure 193 on page 395). To make a change:

   a. Enter the new value and click Submit.

      A page containing a summary of the changes opens (Figure 194 on page 396).

   b. Click Confirm.

A confirmation message appears (Figure 219 through Figure 221 beginning on page 419).

Note: The sync status of the telephone appears at the top of the Telephone pages. When the information for the telephone has been changed, but the changes have not been synchronized with the Meridian 1 or Succession CSE 1000 system, a Show Current configuration/Pending changes drop down box allows you to select which configuration is shown. Once the telephone and the Meridian 1 or Succession CSE 1000 system have been synchronized, "Current configuration" appears at the top of the page, and the drop-down box no longer appears.

4 Click Keys.

The Keys page appears. If allowed by your System Administrator, you can change the key-based features, or functions, assigned to any of the keys. To make a change:

a In the graphical representation of your telephone, click the key you want to change (Figure 196 on page 399).

b Click Change.

A list of the available choices for the selected key appears in the Key Change Wizard (Figure 198 on page 401).

c Select a new key-based feature to assign to the key, and then click Open.

d If required, the Key Change Wizard opens a page that requests you to enter the parameters for the selected key (Figure 199 on page 402).

e Enter the parameters and click Submit.

A page containing a summary of the changes appears (Figure 200 on page 403).

f Click Confirm.

A confirmation message appears (Figure 219 through Figure 221 beginning on page 419).

5 Click Features.

The Features page appears. If permitted by your System Administrator, you can change the allowed/denied status or settings of features assigned to your telephone (Figure 216 on page 416). To make a change:

a Do one of the following:

- Select the appropriate value for the desired feature from the drop-down box.
- Enter the value of the parameter associated with the desired feature in the edit box.

b Click Submit.

A page containing a summary of the changes appears.

c Click Confirm.

A confirmation message appears (Figure 219 through Figure 221 beginning on page 420).

6 Click Details. Information on the Keys and Features currently assigned to your telephone is presented on the Details page. This page is always read only (Figure 217 on page 417, and Figure 218 on page 418).

7 If a Schedule button appears at the top of the Telephone pages, your System Administrator has permitted you to automatically synchronize all of the changes you have made with the information stored on the Meridian 1 or Succession CSE 1000 system. If there is no Schedule button, your System Administrator will review your changes and manually synchronize the changes with the Meridian 1 or Succession CSE 1000 system. If the Schedule button is present:

a Click Schedule.

b Assign a Task Name, and then click Next to accept the default Task Time, 2 minutes from now.

Note: Click the "Do not transmit if the telephone is busy" check box to avoid disconnecting an active call on your telephone.

c Wait 2 minutes for the changes to be transmitted to the system.

d Click Refresh in your browser.

When the Show Current configuration/Pending changes drop-down list no longer appears, all of your changes have been made and the telephone has the new configuration.

8 If allowed by your network administrator, click the Billing Reports link in the Navigation bar to view your telephone billing reports from the Telecom Billing System (TBS). For information on the TBS Web Reporting application, see *Optivity Telephony Manager Telemanagement Applications* (553-3001-331).

Telephone change procedure for a Web Navigator User

The following procedure outlines the steps that a Web Navigator user takes to make changes to a telephone.

1 Launch a supported web browser and navigate to the OTM host name or IP address, provided by the System Administrator, with "/admin" appended to the address.

2 Log in to the Web Navigator using the login name provided by your System Administrator.

3 Click the Find link under Telephones in the Navigation Bar.

The Find Telephones page opens.

4 Perform a search to locate the record for the telephone you want to change.

See "Find Telephones page" on page 331 for information on how to perform a search.

5 On the Find results page, click the link in the Location column that corresponds to the telephone you want to change.

The General page for the telephone appears. If allowed by your System Administrator, you can change the Station Location, Key Based Modules, and Designation fields (Figure 193 on page 395). To make a change:

a Enter the new value and click Submit.

A page containing a summary of the changes appears (Figure 194 on page 396).

b Click Confirm.

A confirmation message appears (Figure 219 through Figure 221 beginning on page 419).

Note: The sync status of the telephone appears at the top of the Telephone pages. When the information for the telephone has been changed, but the changes have not been synchronized with the Meridian 1 or Succession CSE 1000 system, a Show Current configuration/Pending changes drop down box allows you to select which configuration is shown. Once the telephone and the Meridian 1 or Succession CSE 1000 system have been synchronized, "Current configuration" appears at the top of the page, and the drop-down box is no longer displayed.

6 Click Keys.

The Keys page appears. If allowed by your System Administrator, you can change the key-based features, assigned to any of the keys. To make a change:

a In the graphical representation of the selected telephone, click the key you want to change (Figure 196 on page 399).

b Click Change.

A list of the available choices for the selected key appears in the Key Change Wizard (Figure 198 on page 401).

c Select a new key-based feature to assign to the key, and then click Open.

d If required, the Key Change Wizard opens a page that requests you to enter the parameters for the selected key (Figure 199 on page 402).

e Enter the parameters and click Submit.

A page containing a summary of the changes appears (Figure 200 on page 403).

f Click Confirm.

A confirmation message appears (Figure 219 through Figure 221 beginning on page 419).

7 Click Features. The Features page appears. If allowed by your System Administrator, you can change the allowed/denied status or settings of features assigned to the telephone (Figure 216 on page 416). To make a change:

a Do one of the following:

- Select the appropriate value for the desired feature from the drop-down box.
- Enter the value of the parameter associated with the desired feature in the edit box.

b Click Submit.

A page containing a summary of the changes opens.

c Click Confirm.

A confirmation message appears (Figure 219 through Figure 221 beginning on page 419).

8 Click Details. Information on the Keys and Features currently assigned to the telephone appears on the Details page. This page is always read only (Figure 217 on page 417, and Figure 218 on page 418).

9 If a Schedule button appears at the top of the Telephones pages, your system administrator has permitted you to automatically synchronize all of the changes you have made with the information stored on the Meridian 1 or Succession CSE 1000 system. If there is no Schedule button, your System Administrator will review your changes and manually synchronize the changes with the Meridian 1 or Succession CSE 1000 system. If the Schedule button is present:

a Click Schedule.

b Assign a Task Name, and then click Next to accept the default Task Time, 2 minutes from now.

Note: Click the "Do not transmit if the telephone is busy" check box to avoid disconnecting an active call.

c Wait 2 minutes for the changes to be transmitted to the system.

d Click Refresh in your browser.

When the Show Current configuration/Pending changes drop-down list no longer appears, all of your changes have been synchronized and the telephone has the new configuration.

Note: If the Show Current configuration/Pending changes drop-down box continues to appear, locate the record for the telephone using the Find Telephones page. If the changes have been transmitted to the Meridian 1 or CSE 1000 system, the sync status for the telephone appears as TRN. Any other value in the sync status column indicates that the synchronization process has failed. You should either resubmit the request or review the log files on the OTM server.

Billing Reports

The Billing Reports link is visible in the Navigation bar if the user has a Web Reporting Role other than "No Access" defined in their OTM Directory record. Web Reporting Roles are: All, Peer, Managed, Personal and No Access. If the Web Reporting Role is No Access, or if it is left blank, the Billing Reports link is not displayed. Billing Reports requires the Billing Enhanced Package and is available with all three levels of OTM, General, Enhanced, and Premium.

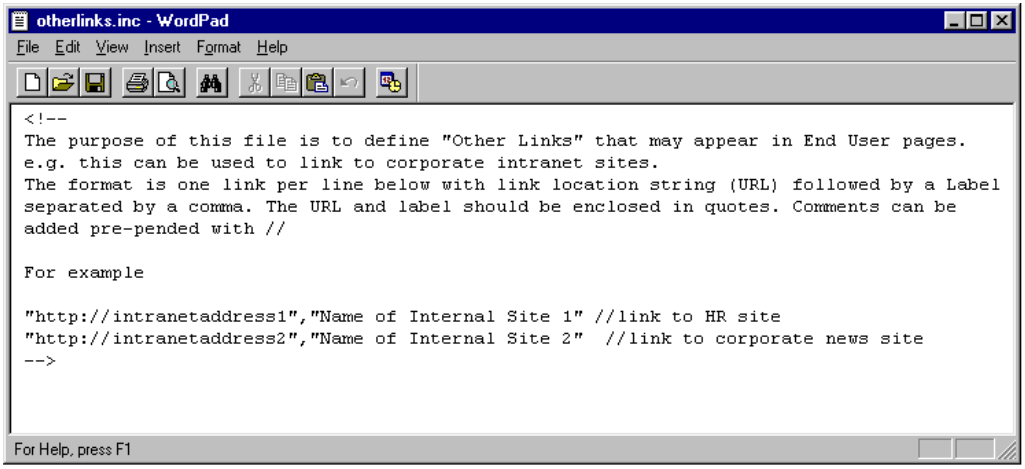
Other Links

You can define the Other Links button of the Navigation Bar for Web Desktop Services users. If you do not define links, then this section is not visible. To define Other Links edit the HTML file (Figure 222). The file is located in *<Nortel>\OMServices\OMStation\EndUser\Eng*.

To launch web pages from the Windows or Web Navigator, double-click on the item in the Navigator. You are asked whether you are launching a Terminal or an Application. If you select Application, a web browser window opens. The URL for the application is set in the Web URL field in the Properties—Applications tab. This process automatically adds a Generic system in OTM.

To launch an executable file from the Windows Navigator, double-click on the item in the Navigator. You are asked whether you are launching a Terminal or an Application. If you select Application, the executable file will launch. The location for the executable is set in the path field in the Properties—Applications tab.

Figure 222 Other Links



Meridian Mail

One possible item that could go into the Other Links section is a link to Personal Mailbox Administration (PMA). This link takes users to the URL for logging in to the Meridian Mail web pages. Users must enter the mailbox number and password to proceed. Once logged in, users can view and change their mailbox configuration. This feature is available with Meridian Mail 13 and later releases.

Figure 223 Meridian Mail Login

Chapter 4
Station Administration

Optivity Telephony Manager (OTM) provides system administrators with powerful tools for maintaining and updating Meridian 1 and Succession CSE 1000 systems. The OTM software package consists of OTM Common Services and several OTM applications, each of which provides specific system management capabilities. This chapter describes the OTM Station Administration application.

Overview

The Station Administration application helps administer databases that define end-user stations (telephones) on Nortel Networks Meridian 1 and Succession CSE 1000 systems. The Station Administration application contains the following modules:

Station Administration

This module allows you to change station data on an individual or selected group basis.

CPND

Use this module to manage Call Party Name Display (CPND) data.

List Manager

Use this module to manage data for Speed Call, Group Call, and Group Hunt lists.

Report Generator

This module allows you to create and produce standard or customized reports.

Conversion utility

This module provides import and file rebuild capabilities.

Communications

This module synchronizes system data. It is used to copy OTM data to Meridian 1 and Succession CSE 1000 systems, and to copy system data to OTM.

Related OTM documents

The information presented in this chapter should be read in conjunction with *Installing and Configuring Optivity Telephony Manager* (553-3001-230), which describes the installation and configuration of OTM. Refer to Chapter 2, "Common services," for information on how to operate and maintain the different applications within the OTM suite.

OTM Directory

The OTM Directory feature allows you to share common user data (Name, Department, and so on) between OTM applications such as Station Administration and Telecom Billing System. OTM Directory Services is described more fully in Chapter 2, "Common services," beginning on page 160.

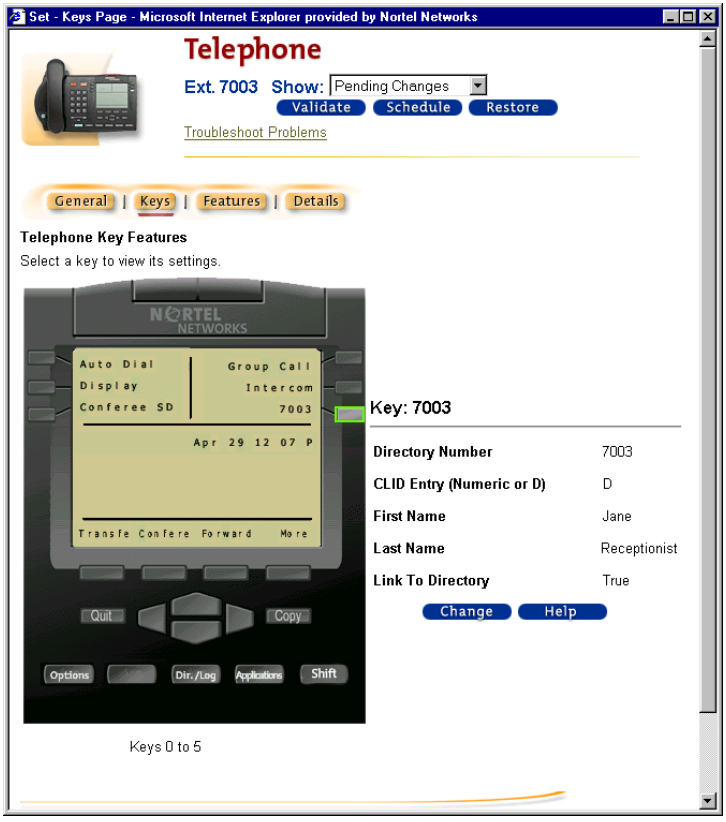
OTM Desktop Services

OTM Desktop Services allows end users to view and modify the configuration of their telephone through a web browser.

The OTM Web Navigator provides many of the same functions available in the OTM Windows Navigator. The OTM Windows Navigator allows you to view, configure, and administer sites, systems, and users. Although the Web Navigator does not offer all of the same features, the presentation of Meridian system and feature information is easy to navigate. OTM Web security meets the same criteria as provided by Windows NT.

One of the advantages of the OTM Web interface is the ability for users to configure their telephones through their web browser. As an administrator, using Web Desktop Services, you can also block end-user access to configuration screens. A particularly useful Desktop Services feature is the ability to customize the Help files to suit specific customer needs. The web display of telephone data includes a graphical representation of the telephone (Figure 224). The page shows the features that are configured for the telephone, and provides access to Help text for telephone features.

Figure 224 Telephone Keys Page



For more information on Web Desktop Services, refer to "Web Desktop Services" on page 381.

Web-based Station Administration

A subset of the functionality available in Station Administration is also available using the Web interface. Table 27 outlines the features that are available using Windows-based Station Administration and which of these features are supported through the Web-based Station Administration interface. For information on additional features that are available with Web-based Station Administration, see Chapter 3, "Web Services," on page 317.

Table 27 Comparison of Windows and Web-based Station Administration

Functionality	Supported in Windows-based interface	Supported in Web-based interface
Station Administration		
Record View [A]	Yes	Yes
Addition of a new telephone	Yes	No
Deletion of an existing telephone	Yes	No
Swapping of two telephones	Yes	No
Restore [B]	Yes	Yes
Global Update [C]	Yes	No
Modify a telephone		
— Modify telephone owner	Yes	No
— Modify customer number	Yes	No
— Modify location	Yes	Yes
— Modify key configuration		
• Key feature list	Yes	Yes
• DN list	Yes	Yes [D]
— Modify feature/CLS configuration [E]		
• Feature list	Yes	Yes
• TN list [F]	Yes	No
— Modify admin fields [G]	Yes	No
— Modify value for number of key-based expansion modules	Yes	Yes
— VMB, MARP, ANIE configuration	Yes	No
— CPND name configuration for a DN	Yes	Yes [H]
— Interaction with Employee Editor [I]	Yes	Yes
Validation of a telephone	Yes	Yes
Forms interface or Power User tool	Yes	No
Form editor [J]	Yes	No
Designation strips [K]	Yes	No
Print reports [L]	Yes	No
Templates		
Template configuration [M]		
— Addition/deletion/modification/validation	Yes	No
Hardware		
Hardware configuration [N]		
— Addition/deletion/modification/validation	Yes	No

Table 27 Comparison of Windows and Web-based Station Administration (continued)

Functionality	Supported in Windows-based interface	Supported in Web-based interface
CPND Customer Configuration		
CPND Customer Configuration [O]		
— Addition/deletion/modification/validation	Yes	No
CPND Name Configuration		
CPND Name Configuration [P]		
— Addition/deletion/validation	Yes	No
— Modification	Yes	Partially [Q]
— Interaction with Employee Editor	Yes	Yes
Synchronization with Meridian 1 or Succession CSE 1000 systems		
Transmission of telephone changes to the system	Yes	Yes [R]
Retrieval of telephone information from the system	Yes	No
Synchronization of CPND customer data	Yes	No
Synchronization of CPND name data	Yes	No
Employee Editor User Interface		
Employee Editor UI [S]	Yes	Partially [T]
— Addition of new employee	Yes	No
— Modification of existing employee	Yes	Partially [U]
— Deletion of an employee	Yes	No
Rebuild directory	Yes	No
Audit - full/partial [V]	Yes	No
Report Generator		
Report Generator [W]	Yes	No
Conversion Utility		
Conversion Utility [X]	Yes	No
Station Administration Options		
Operation mode - Installation/Maintenance [Y]	Yes	No
Operation mode - Ignore numbering plan/hardware check [z]	Yes	No
Online Help/Documentation		
Station Administration Help	Yes	Yes

Notes:

[A] Reading station data records and displaying the selected information in tabular form.

[B] Changes made by the administrator are rolled back.

[C] Making changes to multiple telephones.

Table 27 Comparison of Windows and Web-based Station Administration (continued)

Notes: (continued)

[D] Search provided for used/unused DNs in Web-based Station Administration.

[E] CLS = Class of Service; Feature = non-key based features.

[F] Shows list of TNs and associated location if the TN is assigned.

[G] Non-Meridian 1 or Succession CSE 1000 data fields used to store administration related information.

[H] Only the CPND name associated with a DN that is assigned to a key can be modified.

[I] The Employee Editor needs to be updated whenever the DN, Location, or TN for a telephone is modified.

[J] A tool to create custom forms.

[K] Printed labels that are used on telephone keys to indicate the associated feature.

[L] Canned reports based on Mnemonics, Feature Groups, and so forth.

[M] Templates that can be used to create new telephones with predetermined feature/key configurations.

[N] Hardware view of Windows-based Station Administration is used to manage the information about digital and analog line cards.

[O] CPND view of Windows-based CPND Administration stores customer information related to CPND name.

[P] CPND Name view of Windows-based CPND Administration stores CPND Name information associated with DNs.

[Q] Can be modified while modifying a key configuration in Web-based Station Administration.

[R] Only Schedule Now option available. Each task can transmit the changes for only one telephone.

[S] Provides the capability to add/modify/ delete employees to the Station Administration employee database.

[T] Provided as the “Directory Update” application in Web-Based OTM.

[U] Only the User Group, Published, Login, and Report Access Group fields can be modified.

[V] Brings Station Administration and Directory into sync.

[W] Generated custom reports based on Station/CPND database.

[X] Utility to run database conversion. Usually runs during the end of installation; however, you can also launch it from Windows-based Station Administration.

[Y] In maintenance mode, you are provided with an option to schedule the transmission of changes the very next moment after you apply changes to a telephone. In installation mode, you configure all of the telephones and then schedule a bulk transmission of the changes.

[Z] Provides options to turn off validation of DNs against the numbering plan and validation of TNs against hardware data.

Before you start

Before you can start using OTM Station Administration, you must retrieve station, customer, and other associated data files from the Meridian 1 or Succession CSE 1000 system. The following summarizes the steps to follow before you can use OTM Station Administration.

Ensure site and system information is defined

The properties of sites and systems must be defined before you can use Station Administration. See Chapter 2, "Common services" for detailed procedures.

- Define site properties in the New Site Properties sheet.
- Define system properties in the System Properties dialog box. Be sure to completely define information in the following tabs:
  - General tab - Include system name and short name.
  - Communications tab - Include at least one communications profile.
  - System Data tab - Add information on the system type and release. Identify System Parameters and enable software Packages.
  - Applications tab - Be sure to enable the Station Administration application and a corresponding communication profile.
  - Customers tab - Be sure to add at least one customer (usually Customer 0) and define this customer's properties to include a customer name, user ID, and password. You must define unique names, IDs and passwords for each customer added.
  - Numbering Plans tab - Define a numbering plan for each customer using the Numbering Plans tab found under the Customer Properties sheet. Station Administration uses information entered here to provide a list of available extensions (DNs), and validates the extensions against the applicable feature (for example, ACD DN).
  - Network tab - Define Gatekeeper Zones and Survivable Cabinets in Meridian 1 systems. Define Gatekeeper Zones, primary and alternate Signalling Servers, as well as Media Gateways and Branch Offices for Succession CSE 1000 systems. This tab appears in the System Properties dialog box for Call Servers, Meridian 1 systems, Media Gateways, Survivable Cabinets, and Branch Offices.

Once defined, sites and systems appear as icons in the OTM Navigator and System windows.

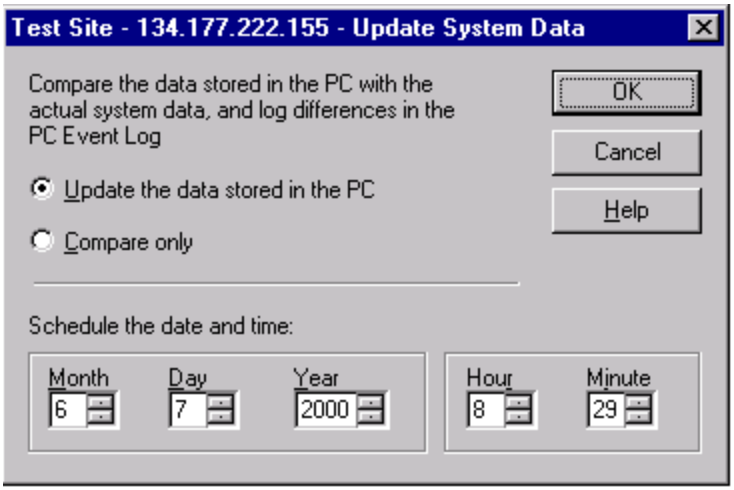
Update the system data

To update the system data:

1 From the OTM Navigator window, double-click on the system to open the system window for the system you want to update.

2 Choose File > Update System Data. The Update System Data dialog box opens (Figure 225).

Figure 225 Update System Data dialog box



When you update the system data, your X11 packages, Customer Data Block information, and Configuration Record information are brought over to OTM.

3 Click OK to update the system data.

Note: If you have configured a Succession CSE 1000 system as a Succession Branch Office but have not enabled Package #390, the update process is aborted. The following error appears in the event log “Error: Branch Office Package #390 is not present: Aborting ‘Update System Data’.” To correct this problem, enable Package #390, or reconfigure the system as a non-Branch Office system.

Retrieve customer station data

Open the System window. View the applications available for the system you have defined and open the Station Administration application under the Stations icon. With the Station Administration window open, retrieve station data for the system. Choose Synchronize-Retrieve-All from the menu bar.

Note: When station data is retrieved, the primary Directory Number and names from the name display assigned to station prime Directory Number are used to populate the OTM Directory. Refer to "OTM Directory services" on page 479 for further detail.

Retrieve Reserve Unit TNs

With the Station Administration window open, retrieve Reserve Unit TN information. Choose Synchronize > Retrieve > Reserve Unit TNs. The Synchronization window opens. Click OK to begin retrieval.

Retrieve CPND configuration

Open the System window. View the applications available for the system you have defined and open the CPND application under the Stations icon. The CPND Name window appears listing names of users on the system. Choose View > CPND from the menu bar. The CPND window appears.

Choose Synchronize > Retrieve > Specify from the menu bar. The Call Party Name Display Retrieve window opens. Enter the customer number. Click OK. The Synchronization window opens. Click OK to begin retrieval.

Retrieve CPND names

With the CPND window open, choose View > CPND Name. The CPND Name window appears. With the CPND Name window open, retrieve CPND data for each customer on the system. Choose Synchronize > Retrieve > All from the menu bar. The Synchronization window opens. Click OK to begin retrieval.

Repeat this step for each customer on the system.

Note: CPND names are automatically retrieved as part of customer Station data retrieve. This step is not necessary if you have performed a customer Station data Synchronize > Retrieve > All.

Additional considerations

While getting started with Station Administration, you communicate with the Meridian 1 or Succession CSE 1000 system. For further information, see "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 557.

Retrieval of information from large systems can be time consuming and negatively affect system performance. You can use the Scheduler utility to plan when to perform these tasks, usually during hours when the number of users on the system are low, to minimize the effect of this operation on the system's performance.

Using Station Administration

Before using OTM Station Administration, you must install and configure the software. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for installation instructions.

Overview

OTM Station Administration supports creation, maintenance, change, and reporting of single and multi-line station data and Call Party Name Display (CPND) information. Station data defines the setup for each user (telephone) connected to the Meridian 1 or Succession CSE 1000 system.

Station data can be collected from the Meridian 1 or Succession CSE 1000 system, or can be created within OTM. You can change this data within OTM and upload it to update the Meridian 1 or Succession CSE 1000 database.

Each system has a number of stations. You can set up each station individually. In practice, many stations have features in common. All features of any station can be set individually, or in groups with common criteria. The Station Administration module lets you create many stations with identical features using templates. However, those features that can be considered unique for a station (such as DN, TN, name, and location) are accessible through a dialog box that graphically represents the appearance of the instrument at that station. All other features are accessible from this dialog box through function buttons.

Station data considerations

You should be aware of the following considerations when operating the Station Administration module:

Location

The OTM application uses one field (Location) in the station data base to identify and index a station record. Station data records are stored and retrieved by the value in this field. Since this is the primary identifier for a station within OTM, each station must be assigned a unique Location value. A new station cannot be created in OTM until you assign a unique Location value. Furthermore, Location is the only station record field that is required by OTM (see “DES” next). OTM validates this field during data entry and does not allow non-unique values or no value.

The Location field is not stored in the Meridian 1 or Succession CSE 1000 system. Data retrieved from Meridian 1 or Succession CSE 1000 system containing stations not currently defined in OTM has the fully qualified Terminal Number field value (with dashes for separators instead of blanks) assigned to the Location field. You can edit this value to conform with your Location value rules.

DES

The DES field is a required field for station data residing on the Meridian 1 or Succession CSE 1000 system. It is possible to create station data within OTM that has no DES field value (this 1–6 character designator value can be assigned through the Administration feature of the Features function in Station

Administration). In such cases, OTM attempts to assign the first 6 characters of the Location value to DES. If this value contains non-alphanumeric values OTM leaves the DES field blank (location can contain all Windows-acceptable characters, but DES can have only letters and numbers).

Any station with no DES value causes an error during transmission of OTM data to the Meridian 1 or Succession CSE 1000 system. The Validation utility checks the DES and any other field values that can cause transmission failures. Refer to "Station data validation" on page 478.

Meridian 1 or Succession CSE 1000 station data retrieved from a system always has a DES value.

Sync status

The Station list includes the current Synchronization status. Values include:

- **NEW**: A station that has been created on OTM but not yet transmitted to the Meridian 1 or Succession CSE 1000 system.
- **TRN**: A station that has been synchronized with the Meridian 1 or Succession CSE 1000 system. The OTM software has determined that the version of this station in the OTM PC data base is consistent with the version of this station on the Meridian 1 or Succession CSE 1000 system.
- **CHG**, or **RPL**: A station that has been changed (or marked for replacement) on the Meridian 1 or Succession CSE 1000 system. The OTM system has determined that the station has been updated on the OTM PC data base and that the version on the Meridian 1 or Succession CSE 1000 system does not yet reflect the OTM update activity.
- **OUT**: A station that has been marked for deletion on the OTM PC data base. It will not be deleted from the OTM PC data base until the station has been OUTed (deleted) on the Meridian 1 or Succession CSE 1000 system during a Synchronization/Transmit operation. An OTM user may update a station marked **OUT**. The OTM system asks whether the station is to be restored before allowing you to update the station.
- **CUR**: A duplicate record containing all of the original configuration of a record that is in the process of being modified. The **CUR** record is created when the user double clicks on a record whose sync status is **TRN**, **CHG**, or **RPL**. If there is no change made and the sync status is **TRN**, the **CUR** record is deleted.

- **SWP**: A station that has been marked to have its Terminal Number swapped with the Terminal Number of a different station. If the previous sync status of the two stations is not **NEW**, their sync status is changed to **SWP**.

The OTM Delete or Cut operation works slightly differently depending on the station's synchronization status. A station marked NEW can be deleted immediately from the OTM PC data base, since it has not been configured on the Meridian 1 or Succession CSE 1000 system. A station with any other status is marked OUT, since the station must be OUTed on the Meridian 1 or Succession CSE 1000 system before the station may actually be deleted from the OTM PC data base. A station marked OUT will continue to appear in the list of stations until it has been successfully OUTed from the Meridian 1 or Succession CSE 1000 system. A station with a status of OUT on the OTM PC database on which you apply Edit - Cut or Edit - Delete continues to be marked OUT until it has been successfully synchronized.

Synchronization considerations

If the Station Administration module is in Maintenance mode (set from Options - Mode in Station Administration module), you are prompted to schedule data transmission to Meridian 1 when any modifications are made to the data stored in OTM.

You can schedule synchronization when prompted, or schedule later.

Reports and text files

All log report activity is performed, by default, in the current working directory for the System (the system subdirectory in your PC system). Other reports are sent to the PC directory of your choice. Here is a list of text files with the appropriate extension found in the working directory:

- Report Forms (*filename*.FRM)
- Reports (*filename*.TXT)
- Communications Logs (*filename*.LOG)

Note: You need only supply the *filename* when prompted to save these files; OTM automatically supplies the appropriate extension.

- Validation Data (you provide the extension)
- Designation Strips (you provide the extension)

Parsing retrieved data

Meridian 1 or Succession CSE 1000 data retrieval is actually a two-stage task. OTM first retrieves the data to a file in the system subdirectory, and then it parses the file to conform with the OTM data base rules.

The connection to the Meridian 1 or Succession CSE 1000 system is only required during the retrieval stage. If you are connected to the system through a modem, OTM disconnects the modem immediately after the retrieval and before the parse. The parsing takes place on the PC only. If you interrupt the parse, for example, by turning off or rebooting the PC, it can be restarted by using Synchronization Retrieve - Parse Only.

Multi-Tenant

If the TENA package is equipped, you must supply a tenant number (TEN).

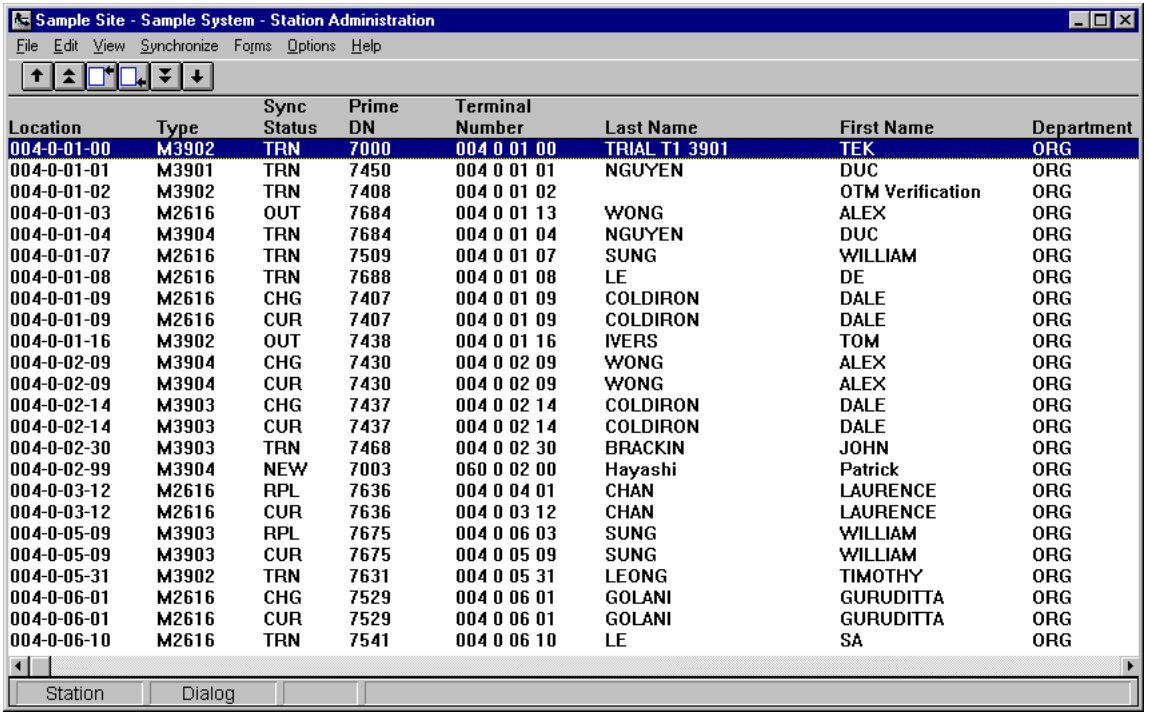
System Hardware

During station data retrieval, the system hardware information is updated with cards that will support the type of stations being retrieved. This may not actually match the hardware used (although it will be compatible). If an exact match is required, you must manually update the hardware data in the Station Hardware view.

Station Administration window

When you start Station Administration, the OTM Station Administration window opens, allowing access to station data for a single Meridian 1 or Succession CSE 1000 system. Figure 226 shows the OTM Station Administration window.

Figure 226 Station Administration window



Location	Type	Sync Status	Prime DN	Terminal Number	Last Name	First Name	Department
004-0-01-00	M3902	TRN	7000	004 0 01 00	TRIAL T1 3901	TEK	ORG
004-0-01-01	M3901	TRN	7450	004 0 01 01	NGUYEN	DUC	ORG
004-0-01-02	M3902	TRN	7408	004 0 01 02		OTM Verification	ORG
004-0-01-03	M2616	OUT	7684	004 0 01 13	WONG	ALEX	ORG
004-0-01-04	M3904	TRN	7684	004 0 01 04	NGUYEN	DUC	ORG
004-0-01-07	M2616	TRN	7509	004 0 01 07	SUNG	WILLIAM	ORG
004-0-01-08	M2616	TRN	7688	004 0 01 08	LE	DE	ORG
004-0-01-09	M2616	CHG	7407	004 0 01 09	COLDIRON	DALE	ORG
004-0-01-09	M2616	CUR	7407	004 0 01 09	COLDIRON	DALE	ORG
004-0-01-16	M3902	OUT	7438	004 0 01 16	IVERS	TOM	ORG
004-0-02-09	M3904	CHG	7430	004 0 02 09	WONG	ALEX	ORG
004-0-02-09	M3904	CUR	7430	004 0 02 09	WONG	ALEX	ORG
004-0-02-14	M3903	CHG	7437	004 0 02 14	COLDIRON	DALE	ORG
004-0-02-14	M3903	CUR	7437	004 0 02 14	COLDIRON	DALE	ORG
004-0-02-30	M3903	TRN	7468	004 0 02 30	BRACKIN	JOHN	ORG
004-0-02-99	M3904	NEW	7003	060 0 02 00	Hayashi	Patrick	ORG
004-0-03-12	M2616	RPL	7636	004 0 04 01	CHAN	LAURENCE	ORG
004-0-03-12	M2616	CUR	7636	004 0 03 12	CHAN	LAURENCE	ORG
004-0-05-09	M3903	RPL	7675	004 0 06 03	SUNG	WILLIAM	ORG
004-0-05-09	M3903	CUR	7675	004 0 05 09	SUNG	WILLIAM	ORG
004-0-05-31	M3902	TRN	7631	004 0 05 31	LEONG	TIMOTHY	ORG
004-0-06-01	M2616	CHG	7529	004 0 06 01	GOLANI	GURUDITTA	ORG
004-0-06-01	M2616	CUR	7529	004 0 06 01	GOLANI	GURUDITTA	ORG
004-0-06-10	M2616	TRN	7541	004 0 06 10	LE	SA	ORG

The OTM security system allows the system administrator to make functions available on a user-by-user basis. Those menu items that are not available to you are shown dimmed. The menu bar contains the following drop-down menus:

- **F**ile
- **E**dit
- **V**iew
- **S**ynchronize
- **F**orms
- **O**ptions
- **H**elp

File menu

Use the File menu to access the station data of a selected system.

Reports: Lets you design and generate reports based on existing station data. This item includes the Report Generator and two existing reports, as follows:

- **Bridges:** A list of bridges on the system.
- **Multiple appearances:** A list of multiple-appearance stations.
- **Excess DNs:** A list of DNs in the OTM Directory that do not have matching DNs in Station Administration.

Desig. Strip: Sends data for labeling buttons and keys on an instrument to an OTM viewer where you can browse and print the data.

Print: Sends the station list to an OTM viewer (described in "Generating reports" on page 583) where you can browse and print the data. Choose from the following display formats:

- **Short Format**: One-page abbreviated list of station data.
- **By Feature Group**: Station data by Feature Group.
- **By Field Mnemonic**: Station data by Meridian 1 or Succession CSE 1000 field mnemonic.

Validate: Validates field values (full or partial, selectable in a submenu) for selected station records:

- **Partial**: Checks selected fields in the station records that, if incorrect, can cause a transmission failure during synchronization.
- **Full**: Checks all fields in the selected station records.

Audit: Synchronizes records in the OTM Directory and Station databases:

- **Partial**: Checks the OTM Directory data base for all changed employee records and updates the Station database.
- **Full**: Attempts to bring the Station database into full synchronization with the OTM Directory database by cross-checking each Station record with the OTM Directory.

Rebuild Directory: Rebuilds the OTM Directory database. Select From CPND Database to use the information stored in the CPND database, or From Station Database to use the information store in the Station Administration database. This option has been provided to allow you to overcome a situation in which the OTM Directory database has become corrupt.

Conversion utility: Launches the conversion utility, used to update OTM data. For more information, see "Conversion utility" on page 430.

Close: Closes Station Administration and returns to the OTM window. OTM automatically saves station updates as they are made. This means that you need not close an open system before quitting the application.

Note: See "OTM Directory services" on page 479 for more information on database synchronization and updating.

Edit menu

Use the Edit menu to change data within an open system. The OTM-specific actions include:

Add / Delete / Update / Restore: Adds/removes/modifies/restores stations for the currently open system.

Global Update / Select / Select All: Allows you to modify selected fields in a group of selected stations.

User Field Names: Assigns names for the 10 user-defined fields for the current system.

View menu

Use the View menu to choose the station data parameters you want to view. The currently selected view is indicated by a check mark against the menu selection and appears in the status bar of the main window.

Station: This option displays a list of all stations defined for this system. When you choose an Edit function, the highlighted station record is opened. If none are defined, you can only choose Edit > Add.

Pending: This option shows all pending records. This provides a list of all stations that are not synchronized with the Meridian 1 or Succession CSE 1000 system.

Template: This option accesses templates that contain station definitions that the open system may use frequently.

Hardware: This option displays line cards used in the system. The Reserve TN feature adds new fields in this view to reserve units on the supported card types.

Employee Selector: This option launches the Employees editor.

External Parties: This option launches the External Parties editor.

Roles/Projects: This option launches the Roles/Projects editor.

Organizational Hierarchy: This option launches the Organizational Hierarchy editor.

Sort: This option appears when the Station or Pending view is selected. The list can be sorted by a criterion selected from a submenu that appears when you choose this item. The criteria include

- Name
- Directory Number
- Location
- Terminal Number
- Instrument (telephone) Type
- Sync Status
- Department

Note: Sorting only affects the displayed list. It does not change the actual order of the station records within the data base.

Synchronize menu

Use the Synchronize menu to schedule communications with the Meridian 1 or Succession CSE 1000 system. The Synchronize menu lets you set up reception or transmission of station data using the OTM communications functions. See "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 557.

Retrieve: Allows selection of station data for retrieval from the Meridian 1 or Succession CSE 1000 system into the station data base. You can define criteria to select stations for download from the Meridian 1 or Succession CSE 1000 system. Retrieve also allows a Parse Only option that formats retrieved data for OTM.

Transmit: Allows selection of station data for transmission to Meridian 1 or Succession CSE 1000 system.

Reconcile: Compares discrepancies between station data and the OTM data base and deletes invalid set information from the OTM data base. Information about deleted sets is recorded in a log file. See "Communications logs" on page 573.

Note: Before using Reconcile, be sure to Retrieve the latest station data first. This ensures the station data is compared to the latest OTM data base.

Forms menu

Use the Forms menu to configure form-based station administration.

Forms Interface: Enable or disable form-based station administration.

Select Form: Select which form to be used by form-based station administration.

Edit Custom Form: Run the station form editor.

Options menu

Use the Options menu to configure options that affect the operation of the Station Administration and CPND Administration modules.

Mode: Invoke the mode function to configure the operational mode and optional station data validations.

Help menu

Use the Help menu to display documentation to help you understand and use the application.

Contents: Displays the Contents page of the online documentation system.

Search Help On: Allows you to type in key words and select a topic of interest from the list of Help topics.

How to Use Help: Provides basic instructions about using the online documentation system.

Accessing Station data

Choose View - Station to display the list of stations defined for the system. Each line in the list contains the following information for one station. Refer to "Managing station data" on page 458 for a more complete description of these fields.

Location: A unique station identifier. OTM uses the value here as an index to the station.

Type: The instrument defined for the station.

Sync Status: An indication of whether Meridian 1 or Succession CSE 1000 data and the data in OTM are synchronized. The following list defines the synchronization status for station data:

- **NEW**: A station defined in OTM that has never been uploaded to the Meridian 1.

- **TRN**: The station is synchronized with the Meridian 1 or Succession CSE 1000 system.
- **CHG**: The station has been modified in OTM but not in Meridian 1 or Succession CSE 1000 system.
- **RPL**: A station defined in OTM to replace synchronized station data.
- **OUT**: A synchronized station deleted from OTM but not yet from the Meridian 1 or Succession CSE 1000 system.
- **CUR:** The station is synchronized with the Meridian 1 or Succession CSE 1000 system.
- **SWP:** The station has been modified in OTM but not in the Meridian 1 or Succession CSE 1000 system.

Prime DN: The prime directory number.

Terminal Number: The station terminal number, representing the address within the Meridian 1 or Succession CSE 1000 system.

Last/First Name: The station user's name.

Department: The department in which the station is used.

This represents part of the data record for a station so that you can identify that station in the listing. The rest of the station data is available as described in “Managing station data” on page 458.

The Pending View

The Pending View shows all pending records, that is, all Station records that have not yet been synchronized with the switch. Only CHG, RPL, NEW, OUT, and SWP records are available in this view. Pending shows both the CHG and CUR versions of a station.

The Template view

Choose View > Template to display a list of station templates defined for the system. The list contains the same information for a template as the Station view contains for a station, with one exception, the Sync Status field is not shown in Template view. The value of the Location field in the list is the actual name of the template as displayed in the template list field of the Add Station dialog box.

The Hardware view

Choose View > Hardware to display a list of line cards, for station TN assignment. If Hardware Validation is active, then the TN added to each set is validated against the TN card type. The cards defined under the hardware view are also used for automatic TN assignment.

The Reserve TN dialog box is accessed through the Hardware Configuration dialog box. Click Reserve Units.

New stations

You can add new stations to the list in the Station Administration view. Use a template that defines data for the station or stations that you are adding, or add each station individually. You must give each new station a unique Location field value.

If OTM is in Maintenance mode, you are prompted to schedule communication with Meridian 1 or Succession CSE 1000 system whenever you add new stations in OTM. You can synchronize the system data now, schedule a time for synchronization, or cancel the prompt and schedule synchronization later. See "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 557.

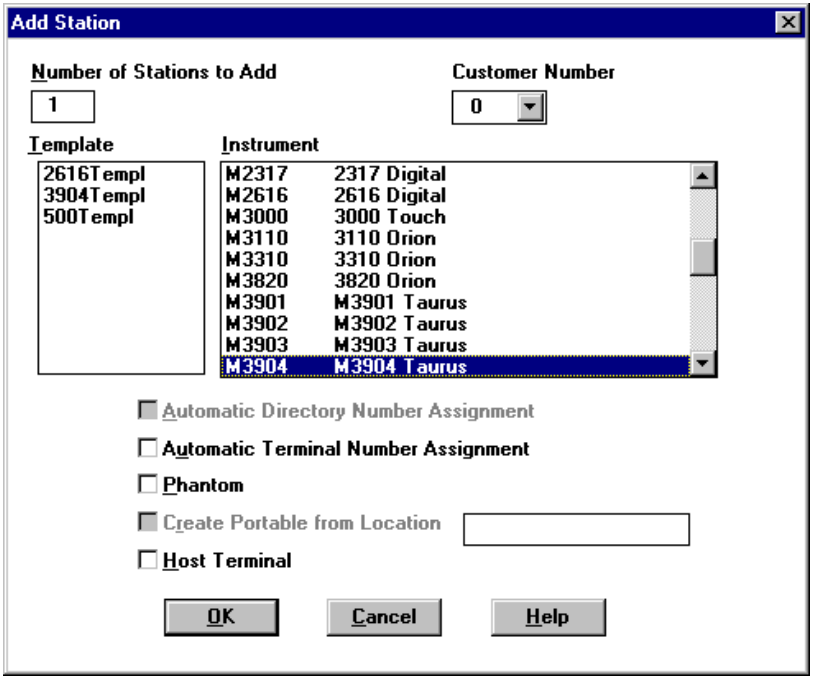
Station template

Data that is common to many stations can be stored in a template. In a single operation, using a template, you can define multiple stations that have data in common. The only data that must be added to stations defined with a template is the Location field value, so that each station added using the template can be identified in the list and by the Station Administration module. A template can contain all or part of a station definition and stations defined using templates can be changed in the same way as stations defined individually. You can change template data in exactly the same way as station data.

Add stations

To add new stations, choose Edit > Add from the Station Administration window Station view. The Add Station dialog box opens (Figure 227).

Figure 227 Add Station dialog box



Note: The Instrument field and the Template field are mutually exclusive. An instrument would be defined in the template. If an instrument is selected, there can be no selected template.

At any time, you can click Cancel to return to the Station list window without adding stations.

When the data for this dialog is complete, click OK to display one of the two dialog boxes listed below:

Adding a single station

If you are adding a single station, the dialog box for the selected set opens. You can update the station data now, or just give it a unique identifier in the Location field and click OK to accept the current data and update later if required. See "Managing station data" on page 458.

Adding a phantom station

The Phantom Terminal Number (PHTN) feature permits you to define and configure TNs with no associated physical hardware. This feature, when used in conjunction with the Call Forward All Calls (CFW) and Remote Call Forward (RCFW) features, allows a call to a phantom station to be redirected to an existing telephone. For more information on phantom Terminal Numbers, see *X11 Features and Services* (553-3001-306).

To add a phantom station, a phantom loop must be defined first. Phantom stations can only be added to existing phantom loops. Use LD 17 to create a phantom loop. Retrieving station data from a system with existing phantom stations preserves the phantom loops defined for those phantom stations. Phantom loops can only contain phantom stations.

Choose View > Hardware from the Station Administration window Station view. The Hardware view appears. Choose Edit > Add. The Hardware Configuration view appears. Select the phantom card from the drop down list. Phantom cards have the prefix PHT. If you do not enter values, OTM enters the next available loop-shelf-card information not used by the selected card into the appropriate fields. Click OK to return to the Hardware Configuration view.

Note: Cards must have unique loop-shelf-card combinations.

Choose View > Station to return to the Station view. Choose Edit > Add. The Add Station dialog box appears. In the Instrument field, select an analog type set (for example, the 500 set). Click the Phantom check box. Click OK. The Station Data dialog box appears.

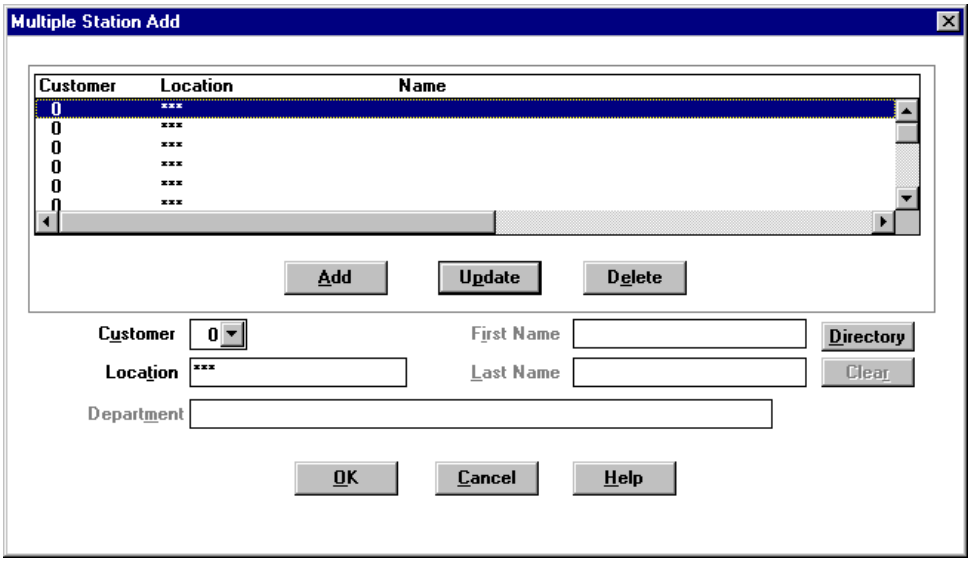
Note: Phantom TNs can only be assigned to analog sets.

Enter the terminal number for the station in the Terminal Number field. Each station must have a unique TN. Double-click in the Terminal Number field to display the Terminal Numbers window listing available terminal numbers associated with this loop. If no phantom cards are defined, this window is blank. Double-click on an available terminal number on the list to enter that value into the Terminal Number field in the Station Data dialog box.

Adding multiple stations

If you are adding more than one station, the Multiple Station Add dialog box opens (Figure 228). This dialog box lets you define some aspects of each station to be added. If you used a template for station definition, much of the station data may already be defined

Figure 228 Multiple Station Add dialog box



The dialog box contains an updatable list box containing the stations. The following data fields allow you to define or update the stations in the list.

Adding stations

When you have defined the station or stations that you want to add, click OK in the dialog box. If the Location field for one or more of the stations is not unique, an error box appears. Click OK in the error box to return to the previous dialog box to make the correction.

OTM adds the accepted station or stations to the OTM station data base. If OTM is in maintenance mode you are prompted, in a Synchronization dialog box, to set up communication with the Meridian 1 or Succession CSE 1000 system. See "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 557.

Click Cancel in the Synchronization dialog box to return to the Station Administration list. The new stations are added with a status of NEW. In this case, you can use the Synchronize menu at a more convenient time to set up communications.

Deleting stations

You can select stations for deletion from the Station list view. Use one of the following methods to remove them from the OTM data base:

- Press the Delete key.
- Choose Edit > Delete.
- Choose Edit > Cut.

Each method displays a Yes/ No confirmation prompt before removing the stations. If you click Yes, OTM removes the stations from the OTM station data base.

There are special considerations to bear in mind when deleting stations that contain references to Voice Mailbox directory numbers. Refer to "Voice Mailbox" on page 538 for more information.

If the stations to be deleted have never been synchronized with the Meridian 1 or Succession CSE 1000 system (Sync status is NEW) they are removed from the list in the window. In this case, you can bring the stations back by choosing Edit > Undo Delete. This undelete is only available until you perform another edit function on the station list.

If the Sync status is not NEW, deleted stations are marked for deletion from the Meridian 1 or Succession CSE 1000 system at sync time by setting the sync status to OUT. These stations will not be deleted from the list until synchronization. If you attempt to change such stations, you are prompted to bring them back before the update can be performed. If you do bring them back, the status is reset to the original sync status. Attempts to delete stations with sync status OUT are ignored.

To delete a station with sync status of CHG, select the associated CUR record and choose Edit > Restore.

Swap

The Swap function allows you to swap the terminal numbers (TNs) of two telephones. A CUR record is created for both telephones. The sync status of the telephones is changed SWP if their previous sync status is not NEW.

You can swap only two telephones at a time. CUR records cannot be swapped. The telephones that are swapped with each other should have compatible line card types. For example, a digital telephone cannot be swapped with an analog telephone.

A group of telephones that are swapped to each other is called a swap group. For example, if Telephone A is swapped with Telephone B, and at a later time, Telephone B is swapped with Telephone C, Telephones A, B, and C form a swap group. When a telephone is selected for transmit from a swap group, you are asked to transmit the remaining telephones in the swap group.

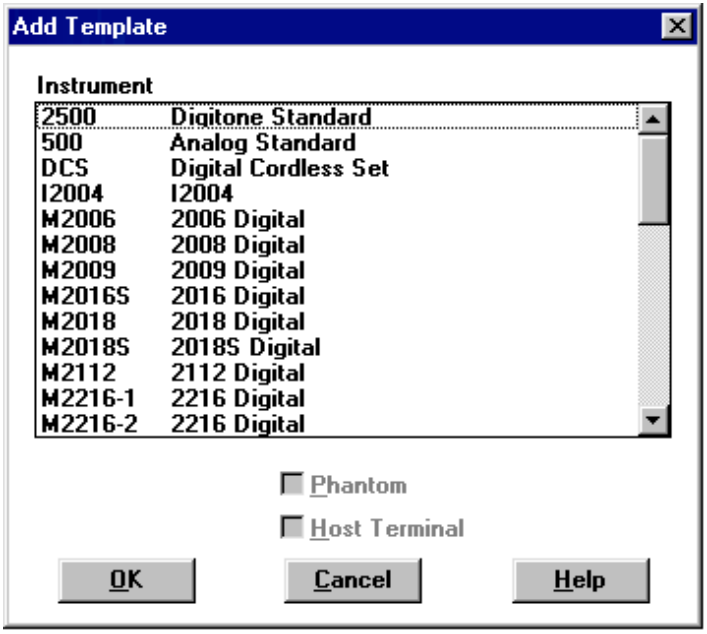
SWP records cannot be deleted in Station Administration. The sync status of SWP records can be changed to TRN or NEW through a global update. SWP records can be restored to their original values by selecting Edit - Restore. This action impacts the transmit results of the other telephones in the swap group.

Terminal number is disabled for SWP records. When you select a form file to run a report, check boxes are added for sync status TRN, NEW, OUT, RPL, CHG, CUR, and SWP. When the check box is checked, the records with the corresponding sync status are included in the generated report. The SWP check box is checked by default.

Adding a station template

You can use a template of station data to add multiple stations (or a single station) with common data. To create a template, choose Edit > Add in the Station Administration list view window with the View > Template option selected. This displays an Add Template dialog box containing a list of instruments (telephone types) that you can use with this particular system (Figure 229).

Figure 229 Add Template dialog box



Select an instrument that you want to use for this template, and then click OK to display the dialog box for the instrument. You can change the data in this template as if it were a regular station. See “Managing station data” on page 458.

If your Meridian 1 is configured for the Virtual Office feature available on M3900 Series Meridian Digital Telephones, select the appropriate instrument and click the Phantom check box to add a Virtual Terminal template, or click the Host Terminal check box to add a Host Terminal template.

You are still required to insert a unique identifier in the Location field before the template is accepted. The data entered is used by OTM as the template name (displayed in the Add Station dialog box).

If you want to modify an existing template, proceed as if it were a single station. Choose Edit - Update in the Station Administration window with View - Template selected.

Managing station data

OTM displays individual station data in a dialog box that graphically represents the set used at that station. If the telephone has feature keys, these are displayed and can be selected like all other fields. Some data entry fields (those that use DN or TN data, for example) can be double-clicked to display options for that field.

Data change is described for a typical set (M2616). Most other instruments contain a subset of the data for this instrument, and the update procedure for each field and function is the same as that described here.

Whenever you modify station data that has already been synchronized with the switch, the Sync Status for that station is set to **CHG**. This is an indication that OTM and Meridian 1 or Succession CSE 1000 system are not in sync.

If OTM is in maintenance mode, you are prompted to set up communication with the Meridian 1 or Succession CSE 1000 system. You can synchronize the data at this time, schedule a time for synchronization or cancel the prompt and schedule synchronization later. See “Communicating with the Meridian 1 or Succession CSE 1000 system” on page 557.

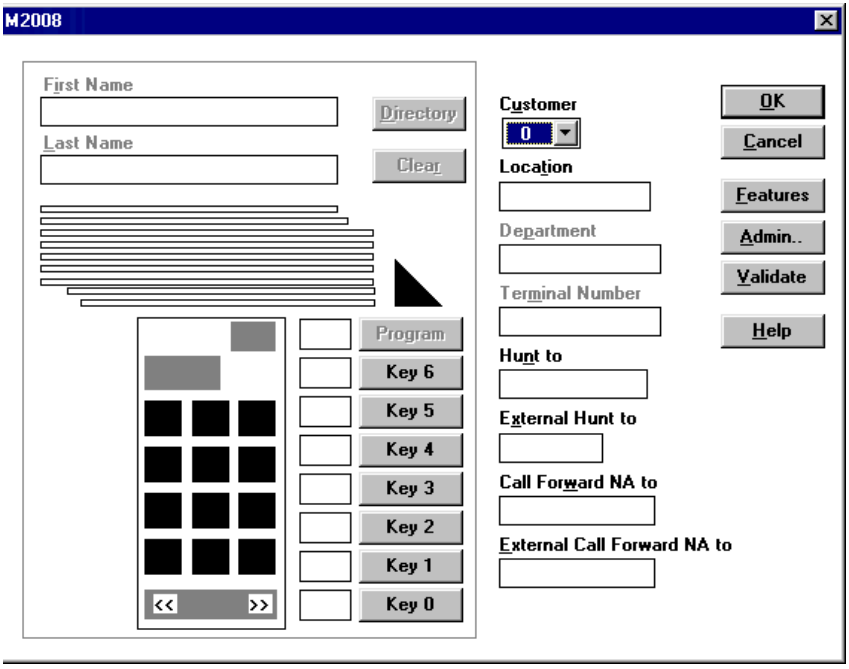
Updating stations

OTM displays a list of stations for the selected system in the Station Administration module when you choose View > Station. You can update the data for any station by selecting the desired station and choosing Edit > Update. This displays the dialog box for the set that the station currently uses. You can update multiple stations at one time. See “Global Update” on page 544.

Station data

The dialog box shown in Figure 230 is for an M2008 digital telephone. In addition to the normal OK, Cancel, and Help buttons, the set dialog box can have other function buttons, such as Features and Admin. These functions are described in “Features button” on page 470 and “Administration” on page 474 respectively.

Figure 230 Station Data dialog box



Functions and options assignment is described in “Key assignments” on page 462. An additional Key Features Edit field appears for analog sets to allow you to assign key functions. This field is described in “Key Features field” on page 473.

The data fields for an instrument are a subset of the following:

First Name / Last Name
The First Name and Last Name fields are linked to the OTM Directory. These fields cannot be edited in the Station Data dialog box. The Directory button provides a link to the OTM Directory record which contains this data. See "OTM Directory services" on page 479.

Customer
You can select one of a drop-down list that contains the customers associated with the site.

Location (required)
The Location is a unique identifying code for this station, up to 12 characters. OTM does not let you assign a code that is already in use for this site.

Note that if you have not defined DES (OTM data only), then OTM assigns the first six alphanumeric characters of the Location field when you synchronize OTM data with the Meridian 1 or Succession CSE 1000 system.

Note also that on receiving data that is not defined in OTM from the Meridian 1 or Succession CSE 1000 system, the Location field is assigned the full TN value, including hyphen separators, of the station.

Department
This field displays the department information that has been entered into the OTM Directory. This information may not be edited in the Station Data dialog window. The Directory button provides a link to the OTM Directory record which contains this data. See "OTM Directory services" on page 479.

Terminal Number
This field contains four separate numeric fields that represent the Meridian 1 system address (the terminal number contains values for Loop, Shelf, Card and Unit) that this station uses.

Note: For Meridian 1 Option 11C, and Succession CSE 1000 systems, the TN format is Card, 0, 0, Unit.

Hunt to / External Hunt to
You can enter a DN in these fields that will receive calls if this station is busy. Note that you can use any telephone number, even one that is external to this site. However, you can double-click this field to display the DN list defined in the Customer's Number Plan for this site and choose one of those. The External Hunt is for incoming calls that are not from a DN in the Numbering Plan.

Call Forward to / External Call Forward to
You can enter a DN in these fields that will receive calls if there is no answer at this station after a predetermined number of rings. These fields operate in the same way as the Hunt to and External Hunt to fields (see DN Assignment).

Add on feature key modules

In addition to these fields, a station may have feature/option keys or key lamps. Some sets can have additional keys as add-on modules. In such cases, one of the following fields is available in the dialog box:

DBA (Display-Based Add-on module)

This field is only available on the M3904 and M3905 telephones. It allows you to program key features for an add-on soft-labeled key module. Enter the number 1, which indicates the presence of the Display-Based Add-on attached to the set. An additional function button, called ADD On 1, appears when you enter 1 in the DBA field.

Click Add On 1 to display a dialog box that graphically represents the keys of the Display-Based Add-on. You assign features to the add-on module the same way that you assign features to keys on the telephone.

Key-Based Access (Add-on modules)

This field is only available for M2000 Series and M3900 Series digital telephones. It allows you to program key features for add-on key modules. You can enter a number in the range 0–2, which indicates the number of add-on modules attached to the set. Additional function buttons (for example, Add On 1) may appear on the dialog box, based on the entry in this field.

You can click these additional buttons to display a dialog box that graphically represents the keys of the add on module. You assign features to the add-on modules the same way that you assign features to keys on the set.

Key Lamp Strips

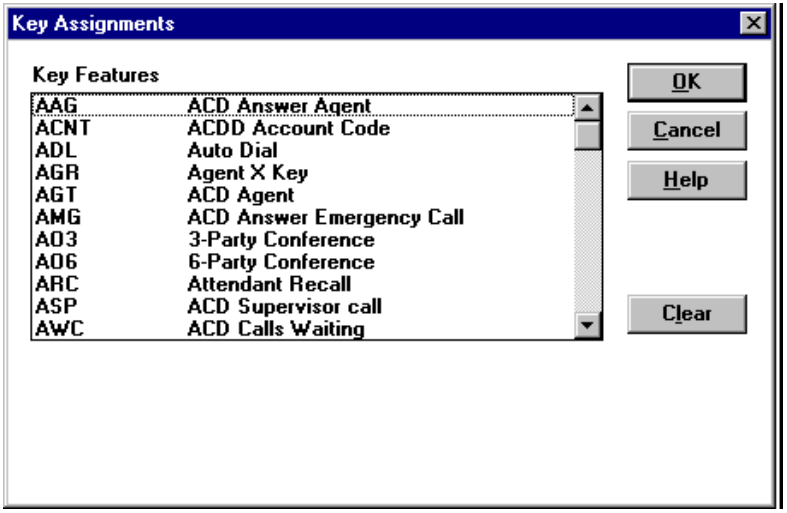
This field is only available for QSU60 digital telephones. It is a numeric field that can contain a number in the range 1–7. The default value is 1 which represents the key lamp strip on the basic telephone. If you enter a number up to 7 in this field, the new number is validated when the cursor is moved out of the field. That number of additional key lamp strips (less the one on the telephone), labeled KLS 2-7, appears in the dialog box. You can select one of these buttons to display a dialog that graphically represents the keys of the add-on module. Assigning features to the add-on keys is the same as for the regular keys on the telephone.

For sets that do not have keys or key lamps, the available features assignment dialog box appears within the set dialog box itself. The assignment procedure is as described in “Key assignments” on page 462.

Key assignments

In addition to the data fields, the set may have keys to which you can attach feature functions. When you select a key, a Key Assignments dialog containing a single-selection scrollable list of Key Features appears (Figure 231). The features listed are defined for this set using the Features button on the station data dialog box.

Figure 231 Key Assignments dialog box



In addition to the usual OK, Cancel, and Help buttons, the dialog box has a Clear button that you can use to remove any feature attached to the selected key on the set (to assign a different feature, it is not necessary to first clear the current feature). You may also enter the first letter of the Key Feature of interest to move to that section in the list.

The dialog box contains a single-selection Key Features list. The currently selected feature is highlighted. Select using the mouse or the up/down arrow keys.

Click Cancel at any time to return to the station data dialog box without changing the current key assignment. Click OK to assign the selected feature to the key.

Some of the features require you to enter additional information. When you select one of these, text entry boxes appear in the dialog box. You can double-click on a DN text entry box to display the list of DNs in the customer's Numbering Plan that are available to the selected feature. For more information, see “Directory Number assignment” next.

Directory Number assignment

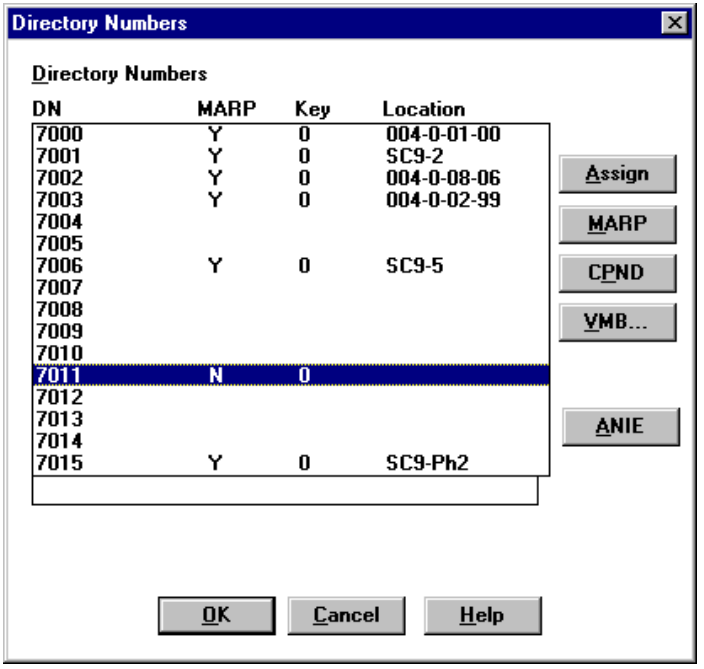
There are three kinds of DNs:

1. A DN assigned to the station. This must be in the customer's Numbering Plan as defined for the system.
2. A DN referred to by this station (message center, for example) that must be in this customer's Numbering Plan.
3. A DN referred to by this station (Call Forward, for example) that can be the number for any station—external or within the Numbering Plan.

To enter a DN for a selected station, you can type the number into the Directory Number field or double-click within the Directory Number field to select from a list of DNs used in the Numbering Plan for the customer (Figure 232).

A manually entered number for DN categories 1 and 2 above will not be accepted if it is not contained in the Numbering Plan, unless the Numbering Plan validation has been turned off (Option > Mode).

Figure 232 Directory Numbers dialog box



If you are assigning a DN to this station (versus referring to the DN of another station as in forwarding or hunting options) the dialog box allows functions in addition to the usual Cancel, Help, and OK buttons:

- **Assign**: Assigns the highlighted DN to the key.
- **MARP**: If the assigned DN is being used by another station you can assign incoming calls to that DN to this station with the Multiple Appearance Redirection Prime (MARP) button. To assign incoming calls to the other station, you must update the other station and select the MARP function there. This button toggles the current MARP assignment.
- **CPND**: A Call Party Name Display (CPND) display dialog box allows you to define how calls from this station are displayed to the receiving station. See "CPND data considerations" on page 499
- **VMB**: A Voice Mailbox (VMB) display dialog box allows data to be associated with a DN (which serves as a mailbox ID) rather than a TN. You can modify the VMB data from any station that has an appearance of the mailbox DN. Refer to "Voice Mailbox" on page 538.

The dialog box contains a single-selection list of DNs defined in the numbering plan for this system. Those numbers that are already assigned also have MARP and Location data listed. The currently selected DN is highlighted. If you are assigning a DN to this station, the dialog box also contains a display-only box with the current DN assignment entered.

At any time, click Cancel to return to the previous window without changing the current assignment. Click OK to assign the DN and return to the previous window.

Terminal Number assignment

The Terminal Number (TN) is the full hardware address of the port to which this station is attached. If the Terminal Number field requires an entry, you can type the number into the Terminal Number field, or you can double-click within the field and select from a list of available TNs. The data entry must be in the following format:

```
lll s cc nn
```

where:
lll= The number of the Meridian 1 loop
s= The number of the system shelf
cc= The number of the shelf card position
nn= The number of the card circuit (unit)

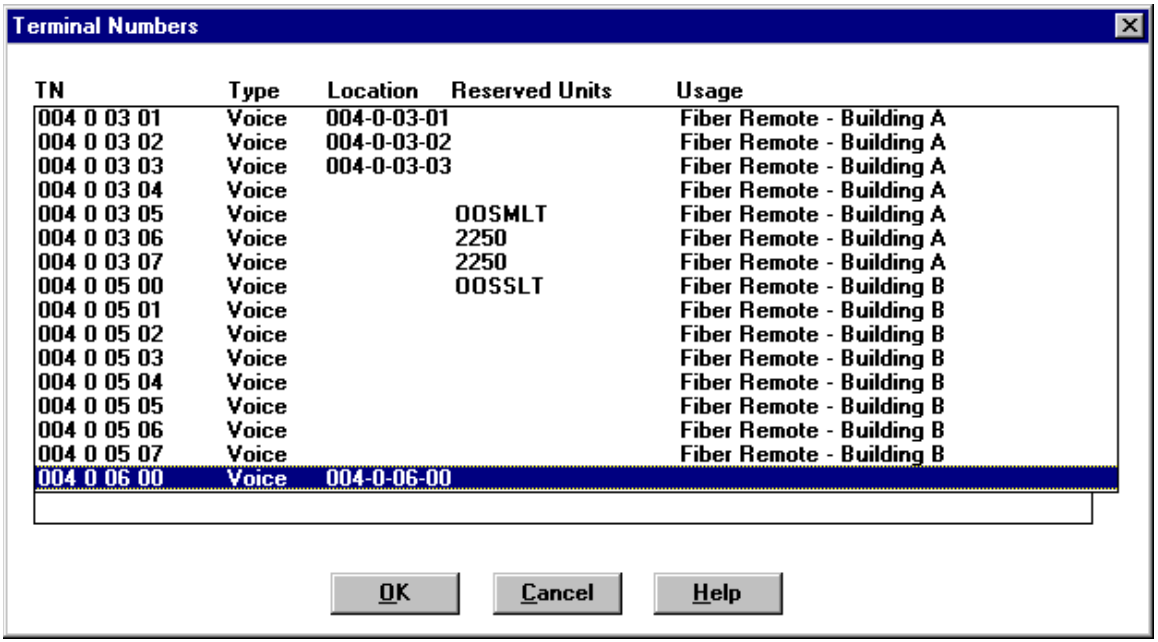
Note: For Meridian 1 Option 11C, and Succession CSE 1000 systems, the TN format is:

```
cc 0 0 nn
```

The range of numbers available depends on the hardware configuration and software release in use at the system.

The list shows the Location for all TNs that are already assigned (Figure 233).

Figure 233 Terminal Numbers window



The dialog box contains a single-selection list of TNs defined in the Station Hardware view that permit access to the set defined for this station. The current selection is highlighted.

At any time, click Cancel to return to the previous window (Set dialog box) without changing the current assignment. Select a TN and click OK to assign the TN and return to the set dialog. The OTM system validates the TN for availability and permissibility using the Hardware assignments stored under the Station Hardware view, and assigns the TN.

Note: Automatic TN Assignment will not assign any units in the Hardware View that are marked as a RUT. See "Reserve TN feature" on page 468.

Reserve TN feature

This feature allows users to assign TNs to support instrument types on a station line card and mark these units as reserved for a given unit type. These types, referred to as Reserve Unit Type (RUT), include the following:

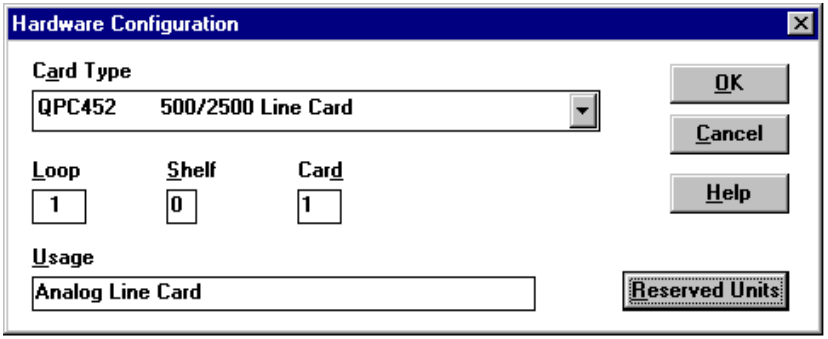
- ATT (Attendant Console)
- 1250 (1250 Digital Attendant Console)
- 2250 (2250 Digital Attendant Console)
- R232 (RS232C Units)
- R422 (RS422 Units)
- OOSSLT (Out of Service Single Line Terminal)
- OOSMLT (Out of Service Multiple Line Terminal)
- PWR (Power for Attendant Console)
- OTHER (as defined by the user)

When a unit is reserved as one of these types, it is not assigned during Automatic TN Assignment and appears in the TN Selection List Box accordingly. The Automatic TN Assignment will not assign any units in the Hardware View that are marked as a RUT. RUTs are validated at the field and global levels. RUTs are marked by the user in the Hardware View and by the Station Retrieval Module. The Reserve TN feature shows existing Usage Fields at the card level in the Hardware view.

Note: Reserved Units TNs are skipped during Automatic Terminal Assignment.

To access the Reserve Units dialog box, click Reserve Units in the Hardware Configuration dialog box (Figure 234).

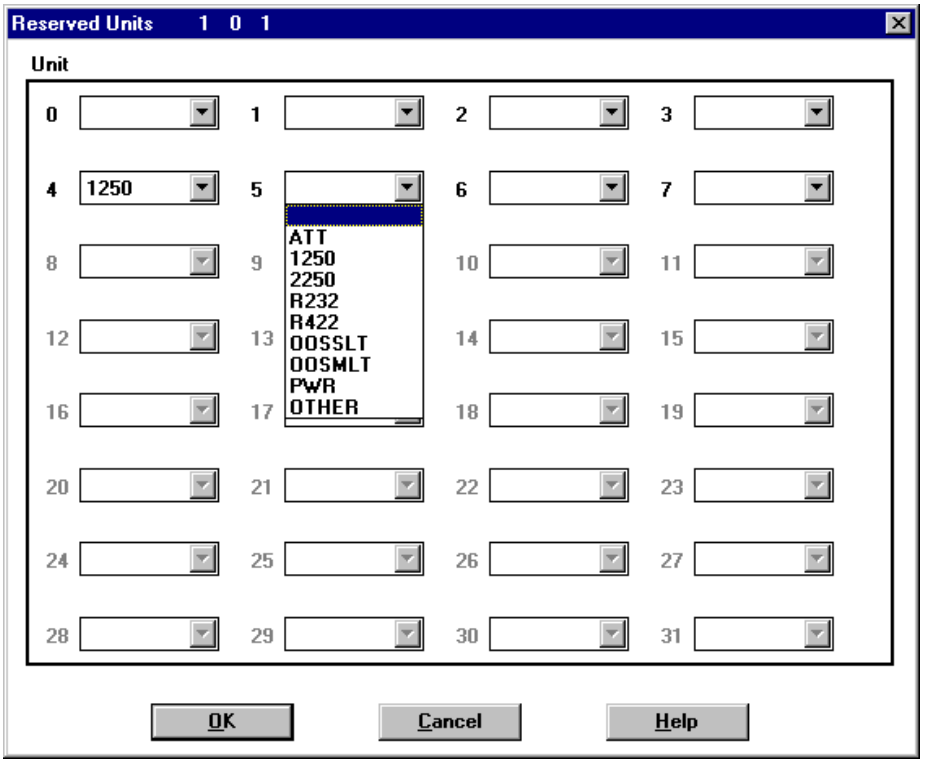
Figure 234 Hardware Configuration dialog box



The Station Retrieval Module recognizes RUTs and updates the Reserved Units fields in the Hardware View with the RUT value during an initial retrieval. Discrepancies are handled in the same way as other retrieved fields with the Meridian 1 or Succession CSE 1000 value overwriting the OTM data base value. RUTs do not appear in the Retrieval Specify by Type field since they are not treated as Station Types.

Use the Reserve Units dialog box to assign RUTs (Figure 235).

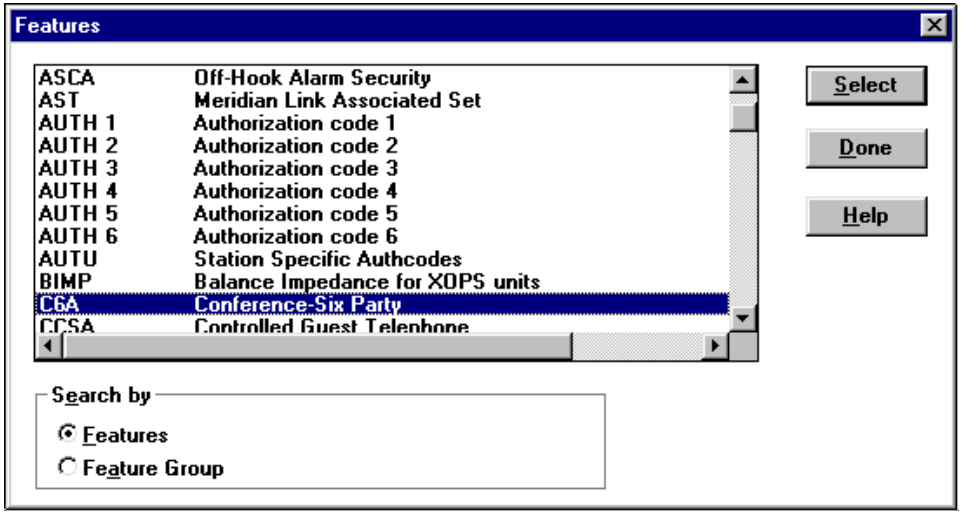
Figure 235 Assigning values in the Reserved Units dialog box



Features button

The Features button is located in the Station Data dialog box (Figure 230 on page 459). Click the Features button to open the Features dialog box (Figure 236). The Features dialog box lets you examine and update station features and options defined for your system. This is the function you use to assign a value to the DES field in OTM. It allows you to set feature key assignments. The Features dialog box contains a single-selection list of features or feature groups that you can scroll.

Figure 236 Features dialog box



Select the appropriate radio button to sort by either Features or Feature Groups. "Features" sorts the features alphabetically by Meridian 1 or Succession CSE 1000 mnemonic. "Feature Groups" organizes the features into related categories.

The dialog box contains Select, Done and Help function buttons. Help displays online Help for this dialog box. Done returns to the station data dialog box, and Select displays a dialog box associated with the selected feature. Use the feature dialog box to define parameters for the feature, and assign the feature to a key.

Use one of the following methods to select a feature:

- Select a single feature with a mouse click.
- Use the arrow keys to move the highlight bar to the desired feature.
- Type the first letters of the feature mnemonic (for example, SCR).
- Click and drag the highlight bar to the desired feature.

Use the Page Up and Page Down keys to browse the feature list.

When you click Select, OTM displays a dialog box for the selected feature. You can enter data in the dialog box. When you click OK, OTM modifies the feature based on your input, and returns to the Features list.

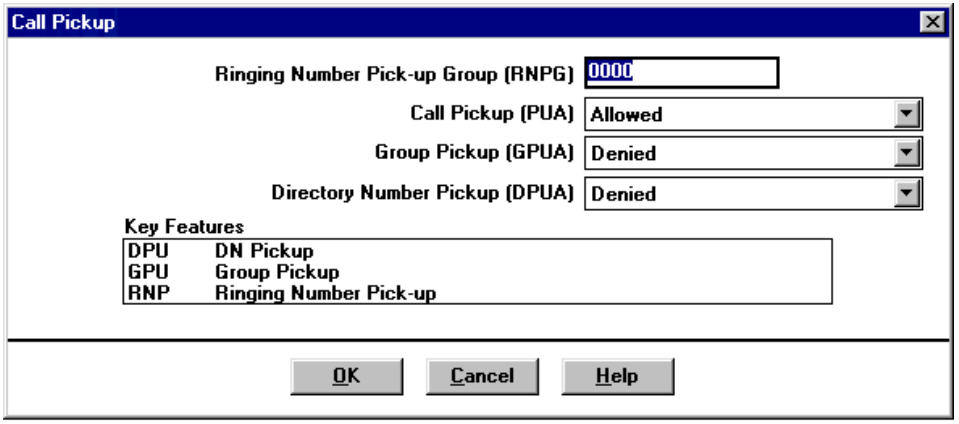
While the Features list is open, you can examine and modify other features. When you finish modifying features, click Done to return to the Station Data dialog box (Figure 230 on page 459). The keys that you assigned are labeled appropriately.

When you are finished defining or examining features, click Done to return to the Station Data dialog box. If you have assigned keys, the appropriate keys are labeled in the Station Data dialog box.

Feature Group category

When you select Search by Feature Group and choose Select in the Features dialog box, a dialog box that you use to configure the selected feature appears. The dialog box shown in Figure 237 is for the Call Pickup feature. The other dialog boxes are similar in appearance.

Figure 237 Feature dialog box (example)



The dialog box contains fields (usually text boxes associated with drop-down selection lists) that define the functionality of the feature. If the feature can be assigned to a key, the dialog box also contains a Key Features list of functions that can be assigned to a key for this feature.

Forced targets

Some entries in the Feature dialog box will force a change in the class of service (CLS) of the selected station. For example, filling in the “Flexible Call Forward No Answer DN (FDN)” field of call redirection forces “Call Forward No Answer (FNA) to “Allowed”. This target enforcement occurs only when the feature dialog box is exited.

Key Features field

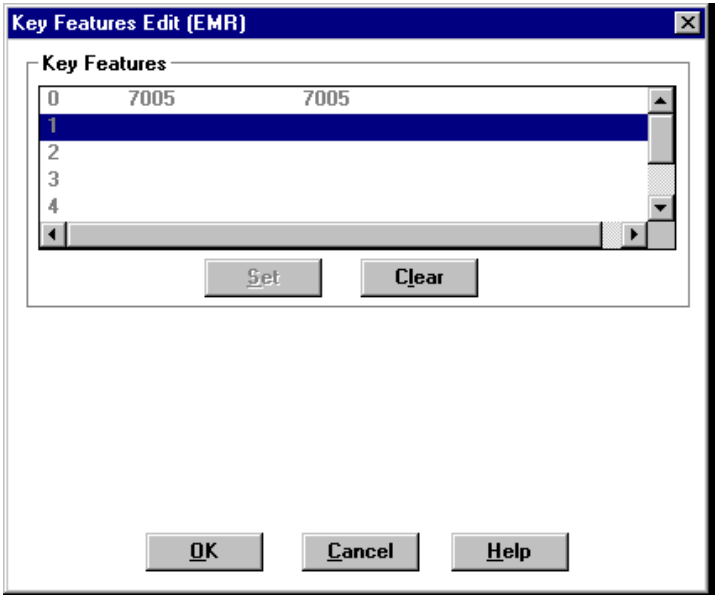
The Key Features field is a single-selection list of features associated with this feature group. You can assign the function selected in this list to a key for the selected station.

You assign features to a key from the Key Assignments dialog box. Double-click the desired function in the Key Features list of the Features dialog box to open the Key Features Edit dialog box (Figure 238) for the selected function.

Note: You can only make key assignments to sets with feature keys. Key assignments cannot be made to Type 500 or 2500 stations.

The dialog box shows a single-selection list of key numbers. Each key in the list shows any already-assigned feature (and associated DN, if applicable). The list is dimmed except for any assignment made during this session.

Figure 238 Key Features Edit dialog box



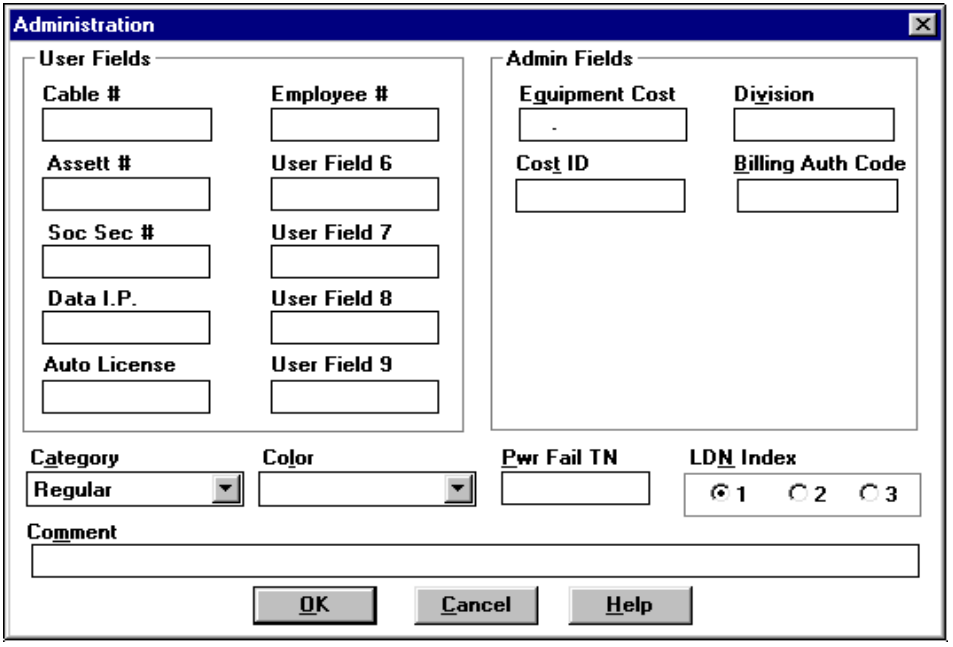
The Key Features section of the dialog box contains two function keys, Set and Clear. If the selected key is already assigned, the Set function is dimmed. Use the Clear function to remove a key assignment. Use the Set function to assign the current feature to an unassigned key.

At any time, click Cancel to return to the Features definition dialog box without changing the current key assignments. Click OK to assign key function and return to the Features Definition dialog box.

Administration

Click Admin in the Station Data dialog box (Figure 230 on page 459) to open the Administration dialog box (Figure 239). The Administration dialog box allows you to assign values to fields that OTM uses in classifying and administering station data. These fields are not part of the Meridian 1 or Succession CSE 1000 system data block. The user fields and their labels are assigned using Edit > User Field Names. These headings allow you to define values for your own situation. This option contains text boxes so that you can assign specific values to these fields for this station.

Figure 239 Administration dialog box



The data entry fields in this dialog box include the following:

Category: A drop-down list of line connection types for this station.

Color: A drop-down list of colors available for this instrument.

Pwr Fail TN: A text box for the TN used if the system power fails.

LDN Index: Radio buttons to define which of three indexes contains the DN for this station. A DN index is set up at the system level when the Numbering Plan is defined. The index is used while viewing and printing designation strips for this instrument.

Admin Fields: The Admin fields are used by the Telecom Billing System (TBS) data base for billing purposes and other types of cost allocation. Refer to *Using Optivity Telephony Manager Telemanagement Applications* (553-3001-331) for information on the TBS application.

Designation Strips

A telephone can have many features and services available by function buttons (keys) and indicators. A Designation Strip is a printout of labels that can be attached to the telephone to indicate the function of the various buttons and indicators on the set (and also the DN of the station using the set). You can create files that let you examine and print Designation Strips created from the data defining the stations using File > Desig. Strip.

A Designation Strip typically contains the directory number for a single line set. In addition, sets with key caps that designate a DN (for multi-line sets) or reference other DNs also appear in the Strip.

Designating Directory Numbers

A station on a Meridian 1 or Succession CSE 1000 system can have up to three listed directory numbers (LDN). The system Numbering Plan defines whether ranges of directory numbers (DN) are set for direct inward dialed (DID). Typically, a station DN, as defined for the Designation Strip, is a regular 10-digit telephone number with an extension:

```
(aaa) xxx-aaaa Ext bbbb
```

where:

aaa	Represents the area code
xxx	Represents the exchange
aaaa	Represents the number
bbbb	Represents the extension

The Designation Strip utility examines the System Configuration Customer data to determine the LDN used by the station. The utility determines whether the station DN is in a DID range defined in the system Numbering Plan. The following are the two possible results:

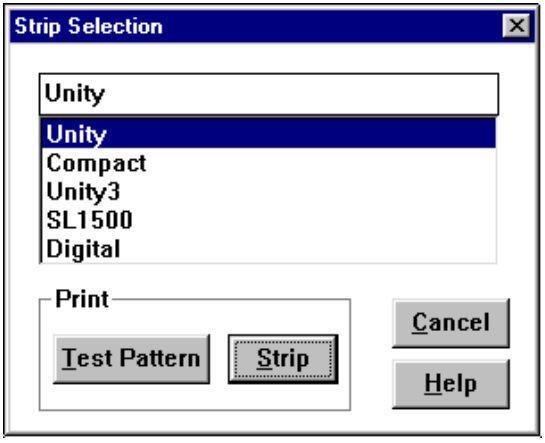
Non-DID number: The Strip prints the LDN and uses the station DN for the extension.

DID Number: The Strip gets the area code (aaa) from the LDN, the exchange (xxx) from the DID number, the number (aaaa) from the station DN.

Display of Designation Strips

Choose File > Desig. Strips from the Station list window to open the Strip Selection dialog box (Figure 240).

Figure 240 Strip Selection dialog box



The dialog box contains a single-selection scrollable list of Designation Strip types created by OTM. The current selection is highlighted. Cancel returns to the Station list window. Help displays online Help for the dialog box. Test Pattern sends a single page dummy strip to the Viewer. Use this to print on the appropriate form and ensure that the form is aligned correctly in the printer. Strip sends Strips for stations selected in the Station Configuration view to the OTM Viewer. From the Viewer window, print the strip by selecting File > Print from the menu bar.

Designation Strips are printed on special forms. The following separate form layouts are used by OTM:

- Unity For Unity 1 and Unity 2 sets
- Unity 3 For Unity 3 sets
- Compact For older SL-1 type sets
- SL-1/500 For normal SL-1 type sets
- Digital For M2000 series digital sets (not M3000 series)

Note: All other sets use the SL-1/500 Strip layout. Stations with ACD keys have both the ACD DN and the Position ID printed. It is up to the user to attach the desired label to the appropriate key.

Station data validation

The station data base contains one record per station. Some of the field values in a record depend on the system properties, the instrument used, and features and options enabled. In addition, the OTM application contains “rules” that define possible values, sizes, and ranges for the fields.

The Station Administration module includes a Validation utility that checks that the values assigned to certain fields are compatible with the configuration and the OTM data rules.

The Validation function checks the currently selected station records in the Station list view before uploading to the Meridian 1 or Succession CSE 1000 system. There are two options—partial and full validation. Full validation checks every field and may require considerable time.

Note: You can validate the data for each station individually using the Validate function key on the set dialog box. This button examines the entries for the current open station only. Any errors are noted. Perform a Station Validation to capture any data entry issues that may result in a transmission error when synchronizing with the Meridian 1 or Succession CSE 1000 system.

Validating the data

Select the stations for validation in the Station list view and choose File - Validate to display a cascading submenu. Choose Partial (checks the values defined previously) or Full (checks all field values) to start the Validation check.

While OTM performs the checks, a status box indicates progress in single record increments. At any time, click Cancel in the status box to halt the task.

Note: Click Cancel to discard the validations already completed.

When the task is complete, the OTM Viewer displays the validation data. You can save this to a text file (in a user-defined file name and location), print it, or simply browse and discard it (see "Generating reports" on page 583 for a description of the Viewer).

When the task is complete, you should send all the new or modified station and CPND information to the Meridian 1 or Succession CSE 1000 system. You may select all of the NEW or CHG stations, for example. You should apply the Validation process from the File menu to the selected stations to ensure that the entered data is consistent across all stations. See "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 557.

OTM Directory services

The OTM Directory is a data base for storing employee and organizational data. Portions of this data are shared with the Station Administration and Telecom Billing System applications.

This section presents information on the interaction between the OTM Directory and the Station database. For additional information on the OTM Directory, see "Directory Services" on page 160.

The OTM Directory contains the following employee attributes:

- Employee first, middle, and last name
- Identification (employee ID)
- Job Title
- Department
- Manager
- E-mail address
- Mailing address

- List of telephone extensions
- LDAP Unique Identifier (UID)

  LDAP UID is used to link an OTM Directory entry to a Corporate LDAP Directory entry. The linkage is done using LDAP synchronization utility or import. Refer to "LDAP Synchronization" on page 291 for further details.

- Additional information on each telephone extension

The Station data base stores the following employee attributes for telephones:

- Employee first and last name
- Department

In the Station database, a telephone or Directory Number (DN) may be linked to an employee in the OTM Directory. When a change is made to the name in the OTM Directory, the Station data is updated using the Station/OTM Directory synchronization mechanism.

The Meridian 1 or Succession CSE 1000 system stores employee first and last names for use with Call Party Name Display (CPND). When an employee name which is linked to a DN is changed, the Station data is updated and flagged as "changed." This information is updated in the Meridian 1 or Succession CSE 1000 system during the next synchronization.

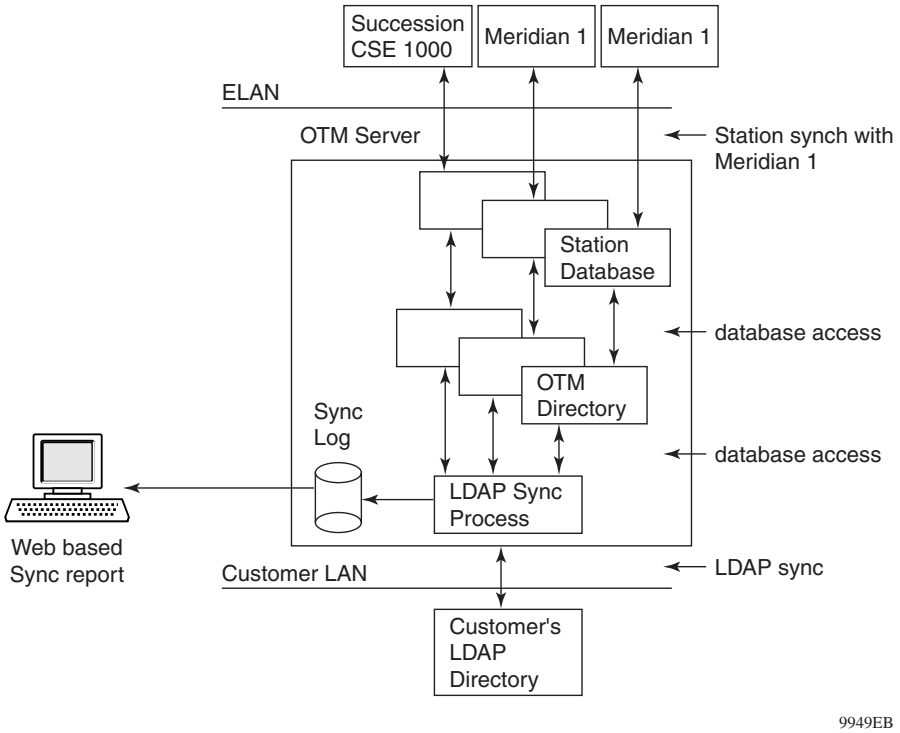
In Station, the linked employee names and departments are read-only. A link is provided to the OTM Employee Editor. In the Employee Editor, you can view and edit the employee data in the OTM Directory.

Architecture

There is one OTM Directory database and one Station database per Meridian 1 or Succession CSE 1000 system. The OTM Server supports multiple Meridian 1 and Succession CSE 1000 systems.

The Lightweight Directory Access Protocol (LDAP) synchronization process runs in the background of the OTM server at a scheduled time. It synchronizes employee data between the OTM Directory and the optional LDAP server. The updates may occur in either direction depending on the mapping defined by the administrator (Figure 241).

Figure 241 OTM Directory Service architecture



For more information on LDAP synchronization, see "LDAP Synchronization" on page 291.

Display Name

The primary function of OTM is to act as the user interface to the PBX. The primary function of an LDAP server is to act as the master repository of employee data for an organization. With regards to a person's first and last names, OTM should receive the formal first name and last name of an individual from the organization's LDAP server.

If there is no LDAP server in an organization, OTM performs the function of being the master repository for employee name data. The first and last name stored in the Employee Editor are the official first and last name for the individual (for example, "Timothy Smith"). The CPND application determines how the individual's name appears on a telephone display (for example, "Tim Smith").

The CPND dialog box (Figure 243) contains a Link to Directory check box. If this box is checked, the First Name and Last Name edit boxes are locked, and the name that appears on telephone displays matches the name that is stored in the OTM Directory. If this check box is not checked, you may edit the first and last names. In this example, you want to ensure that the Link to Directory check box is not checked and that "Tim Smith" was entered into the first and last name edit boxes.

Note: The M1 Corporate Directory feature for the M3900 series and IP telephones uses the first and last names in the Employee Editor, not the name that appears in CPND.

When name changes are made directly on the PBX and then synchronized with OTM, the name that is stored on the PBX is loaded into the CPND database. The Link to Directory check box is disabled since the information is not able to flow backwards into the OTM application. The OTM Directory is still the source for the official name whether this is driven by synchronization with an LDAP server or through direct entry into the Employee Editor.

Station Administration links to the OTM Directory

Prior to the introduction of the OTM Directory Service, each telephone can be assigned a first name, last name, and department in Station Administration. When defining the DN key on the telephone, the CPND name can be linked to the display name of the employee associated with the telephone.

In OTM, the employee name and department are now linked to the OTM Directory. Links are provided from Station Administration to the Employee Editor within the OTM Directory.

Figure 242 Station Data dialog box

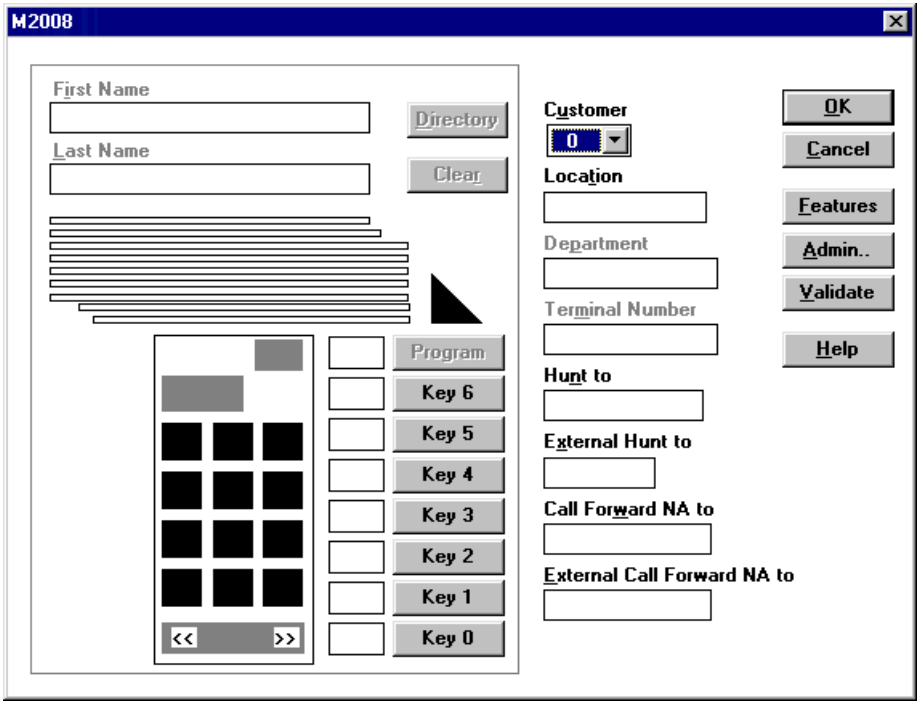


Figure 242 shows the layout of a Station Data dialog box. The First Name, Last Name, and Department fields are read-only when the station is linked to an employee in the OTM Directory. Click the Directory button to bring up a list of employees for the current system with this employee selected. You may open the Employee Editor to change the employee data. Changes in the OTM Directory are updated in the Station database immediately.

Click Clear to empty the First Name and Last Name fields and remove the link to the OTM Directory. These fields cannot be edited; they can only be linked to the OTM Directory.

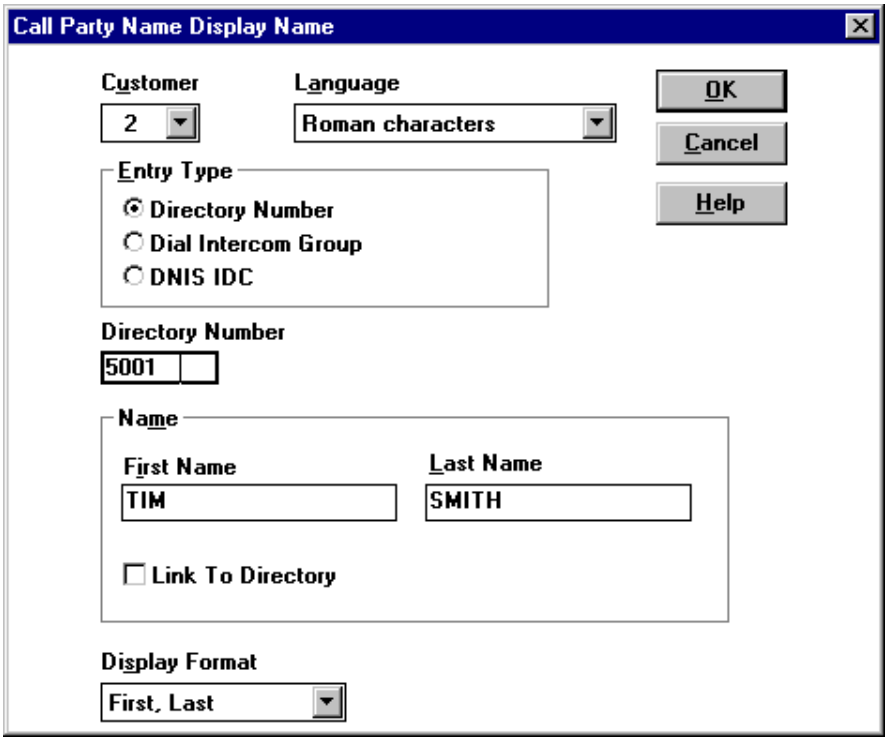
When a change is made to the First Name, Last Name, or Department fields in the OTM Directory, the Station database is updated as follows:

- If the OTM Windows Navigator is running, the Station database is updated automatically in the background.
- If the OTM Windows Navigator is not running, the Station database is updated when you open the Station property page for the affected station.

Note: Only the First Name and Last Name in the OTM Directory are synchronized with the Meridian 1 or Succession CSE 1000 system. The name and department information is used by the OTM Corporate Directory application. To ensure that the Directory and Station databases are synchronized, select Partial Audit from the File menu.

The CPND dialog box, shown in Figure 243, contains a Link to Directory check box. Check this box to place the First and Last name information from the OTM Directory into the CPND Name for this DN. Now you cannot edit the names fields. To enter a different CPND display name for the Directory Number, uncheck the link and enter the new name.

Figure 243 Call Party Name Display Name dialog box



OTM Directory Integration

Directory Services gives a common point of entry for common directory data and synchronization with Corporate LDAP servers. The OTM Directory database is designed to contain end-user data. Common data is shared among different OTM applications and the administrator can input data using the different editors.

Typical attributes of an entity include First Name, Last Name, Job Title, and e-mail address. Other attributes to be assigned using the editors are the place of the entity within the Organizational Hierarchy, and Roles/Projects or External Parties assigned to the entity. A directory entity can also be assigned such assets as Extension (telephone number and account code). Note that only the Employee and Roles and Projects attributes can be assigned to an extension or telephone set.

With the integration of Station Administration and OTM Directory, common data is now shared and synchronized. Some of the attributes that were in Station Administration, such as Last Name and First Name, have effectively moved to OTM Directory. Assets such as Terminal Number and Station Location have been added to OTM Directory. The references to the Extension Number, Terminal Number, and Display Name in the Directory Entity record are sourced from Station Administration because the Station database contains the true representation of these values.

OTM Directory can be launched from the Set display in Station Administration. This enables you to assign the set to a Directory Entity (that is, employees and Roles/Project). Synchronization between the Station and Directory database enables the two databases to update each other with any changes. The Station Administration Display Name database is kept in sync with changes in the corresponding Corporate LDAP Server. OTM Directory also synchronizes directly with the LDAP Server.

Launching the Directory Selector and Editors

The OTM Directory Selector in Station Administration is launched using the Directory button in the Station Data dialog box (Figure 242 on page 483).

The Directory button accesses the OTM Directory of entities, and allows you to assign an entity to this set. If the set is already assigned, the Directory is initialized to that particular Entity in the list.

The Directory button opens the Employee Selector window. Here it is possible to edit the Entity attributes, add a new Directory Entity, or delete an existing Entity. If a deleted Entity had been assigned to a Station, the Last Name, First Name, and Department fields are set to blank when viewed in Station Administration.

The Employees, Organizational Hierarchy, External Parties, and Roles/Projects Editors are launched from both Station Administration and CPND through the View menu.

Common Fields between Station Administration and OTM Directory

Station Administration interacts with the following fields in OTM Directory:

- Name attributes: Last Name, First Name for employees, and Name attribute for Roles and Projects
- Organization Path, which interacts with the Department attribute in Station
- Extension Number
- Terminal Number
- Display Name

When a set or a role/project is assigned to an employee, the Name and Department fields are copied from OTM Directory to Station Administration. Simultaneously, the Extension Number and Terminal Number of the set are copied from Station to OTM Directory. The Display Name field in OTM Directory is given the name of the first CDNP DN on the set.

The CPND set interface features a Link to Directory check box. When checked, this ensures that the CPND name for this DN is the same as the Display Name of the Directory Entity owning that set. To modify the CPND, you must first uncheck the box.

If no display name exists for the Directory Entity, the check box is grayed out.

Department Field

The Department field in Station Administration derives from the last node in the ORG patch in OTM Directory. This may not correspond exactly to the OTM Directory Department setting. For example, if Department is configured as the second-last node in the Directory ORG path, Station Administration assigns whatever is the last node in the ORG path as Department, and so the two fields do not correspond.

For additional information on OTM Directory Services, refer to "Directory Services" on page 160.

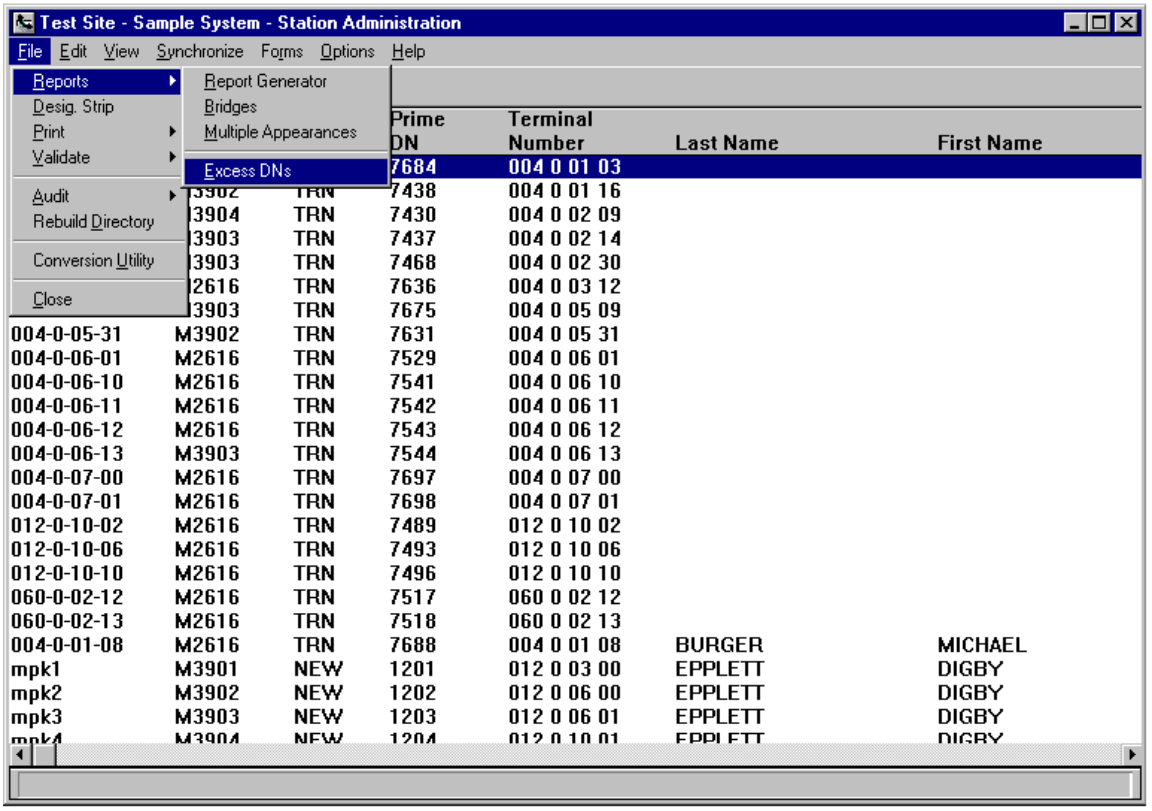
Excess DN report

An employee listing in the Directory lists all the extensions associated with the employee. Normally, each of these extensions would match with a DN in Station Administration. However, when a set (and with it the DN) is deleted from Station Administration, the corresponding entry in the Directory is not removed. The old extensions remain in the Directory to provide information to your billing department. Thus, there is a possibility that some of the extensions in the Directory do not match with any DNs in Station Administration. These extensions are termed Excess DNs.

Station Administration has a facility to print off a report that lists these excess DNs against their owner employee.

This report can be run by selecting File > Reports > Excess DNs in the Station Administration window (Figure 244).

Figure 244 Excess DNs menu



Station and Directory synchronization

There are synchronization methods used by Station Administration to stay in sync with OTM Directory:

- Polling
- Messaging

Polling

There are two polling methods available in the File, Audit menu option in the main Station window: Partial and Full.

Partial Audit polls the Directory for all the changed Employee records and update the Station Database. Thus, a Partial Sync deals with all Directory changes.

A Full audit polls the Directory for all changed Employee records, update the Station database, and also brings the Station database into complete sync with OTM Directory.

If there are any discrepancies in the Station database (for example, a failure to update the database by OMMessageSync resulting in Directory changes not being flagged), a Full Audit resolves them. Full Audit cross-checks every Station record against Directory entries, and may be time-consuming.

Polling does not deal with changes relating to the deletion of Employees. This function is handled by OMMessageSync.

Note: Synchronization also takes place whenever a set associated with an Employee or with Roles/Projects is opened for editing purposes. Once the editing begins, all fields are automatically synchronized.

Messaging

When a change occurs in OTM Directory, Directory automatically sends a Windows message to OMMessageSync, a 32-bit application that is launched immediately once you begin OTM Navigator. OMMessageSync then processes this message and updates the Station database.

OMMessageSync continues to run in the background, so that the Station and CPND views are updated constantly with Directory changes by OMMessageSync.

Directory changes are synchronized with the Station database even if Station Administration is not running, as OMMessageSync operating concurrently with OTM Navigator.

Changes made using the Station Administration interface reflect directly in the OTM Directory. This means that once the Station modification is confirmed, the OTM Directory is immediately updated.

Retrieval of Station Data

When synchronizing databases, the Directory database must be updated as a separate process. This happens immediately after the name parsing process.

For a Station set to be added to the OTM directory, it must have at least one CPND Display Name. For more information, see “CPND overview”, next.

In Station Administration, the Display Name is the first CPND assigned to that set. The Display Names associated with the various keys on the set are added to the list of extensions of the Directory Entity.

Rebuilding the Directory

The OTM Directory can be rebuilt from the data present in the Station Administration database. The File, Rebuild Directory option has been provided to overcome the situation where the Directory database has, for whatever reason, become corrupt. The process involves a “walk-through” of every Station record and may be time-consuming for large Station databases.

Call Party Name Display

CPND overview

Call Party Name Display (CPND) displays the name of the calling party of an incoming call to the called station user. The CPND data is associated with a DN, and not with any particular station. If CPND data is assigned to a DN, it may be associated with multiple stations.

Note: For OTM to have CPND functionality on a specific system, Package 95 (Call Party Name Display) must be enabled on the Meridian 1 or Succession CSE 1000 system.

The CPND Administration module is separate from the Station Administration module. CPND Administration lets you create, maintain, change, and report on single- and multi-line CPND information. CPND Administration data defines the setup for each customer's CPND configuration and CPND Name data defines the display parameters for DNs used by a particular customer. Station configuration data and CPND data are separate within the Meridian 1 or Succession CSE 1000 system and are treated as separate files within OTM.

CPND data for a station is accessible through the Station Administration module. Check the check box to have the CPND Name linked to the Display Name in the OTM Directory. See Figure 247 on page 506. The CPND button in the DN list of the Station module allows you to maintain CPND information directly from the DN list. This is particularly convenient if several DNs are to be linked back to the name for this station.

CPND is provided as a separate module to allow you to directly enter CPND data for DNs, Dial Intercom Groups, or DNIS IDC. The display of OTM CPND records shows the synchronization status and can be used to selectively synchronize this data with the Meridian 1 or Succession CSE 1000 system.

Terminology

This section defines terms that will be useful in understanding CPND.

CPND name

Calling Party Name Display information that is used in LD 95, LD 10, and LD 11 on the PBX. This is also the name information that is contained in OTM's CPND application.

Display Name

A single display name is associated with an employee and can be synchronized with a corporate LDAP server. If an employee has more than one DN, and there are different display names associated with each of the DNs, then either none or only one of the names is shown as the Display Name attribute of the Employee Directory. The name that appears as the Display Name attribute is taken from the entry in the CPND application that has the Link To Directory check box checked. To view the display name in the Employee Directory, click the Additional Info tab, and select Display Name in the attributes list.

Employee Directory

Employee Directory refers to the database of employee information.

Employee Editor

The user interface to the Employee Directory is referred to as the Employee Editor. Employee Directory and Employee Editor are used interchangeably to indicate the employee database information.

Employee name

The employee name is the created from the First Name and Last Name fields that appear in the Employee tab of the Employee Editor. This is the name of the owner of the telephone.

Employee

An employee is a user of assets on a PBX. An employee will have one employee name and either none or only one Display Name attribute. An employee may have a different CPND name for each DN. However, for every DN that has the Link To Directory check box checked, the CPND name matches the Display Name attribute.

LDAP

Lightweight Directory Access Protocol (LDAP) is a protocol that is used to synchronize data between a master server database and client databases. The information is entered once, in the master server database, and then synchronized to populate the client databases. OTM operates as an LDAP client in that it can be configured to map certain data fields to a corporate LDAP server and then synchronized to have data automatically pushed or pulled between the server and client databases.

Link To Directory

In the CPND application, if the Link To Directory check box is checked, OTM will pull the Display Name attribute from the Employee Editor and use this name as the CPND name for the DN. If the Link To Directory check box is unchecked, OTM allows the CPND name for the DN to be different from the Display Name attribute for the employee that owns the DN.

OTM Functionality

When you add a new telephone with a CPND name by using the overlays and then synchronizing with OTM, the telephone is added to Station Administration. The name is added to the CPND application and may also be added to the Employee Editor in both the Employee Name and Display Name fields. Addition to the Employee Editor is dependent on conditions that are described in this section.

When the Link To Directory check box is checked, the CPND name that appears in the CPND application is the same as the Display Name attribute in the Additional Info tab of the Employee Editor. The CPND name is the name that will appear on telephone displays for calls made from the associated DN.

Subsequent changes or modifications to the CPND name associated with a DN on an existing telephone are governed by the conditions that are described in this section. If a CPND name change to an existing telephone is initiated through the overlays, when OTM synchronizes with the PBX the change is populated in the CPND application only. When changing the CPND name on the PBX through the overlays, the Link To Directory check box in the CPND application will become unchecked since the CPND name no longer matches the Display Name attribute in the Additional Info tab of the Employee Editor.

In the CPND Name dialog box (Figure 247 on page 506), when you uncheck the Link To Directory check box, the First Name and Last Name fields become editable. After changing the data in these fields and exiting the dialog box, OTM modifies the Display Name attribute in the Additional Info tab of the Employee Editor if and only if the employee's display name does not appear as the CPND name on another DN through the use of the Link To Directory check box for that DN. In the situation where there is only one CPND name/DN combination (in other words, there is no other CPND name with Link To Directory checked which would lock the Display Name attribute for the employee), once you make the modification in the CPND Name dialog box and click OK, OTM checks the check

box within the CPND application so that the next time the dialog box is opened the Link To Directory check box will be checked. At this point, the CPND name in the CPND Name dialog box and the Display Name attribute in the Additional Info tab of the Employee Editor match. This activity has no impact on the First Name and Last Name fields in the Employee tab of the Employee Editor. They will remain as originally entered.

OTM offers a simple method of making modifications to data on existing telephones, for example, class of service, features, and keys. If you are using OTM to perform these types of activities, Nortel Networks recommends that you not use the overlays to perform these same activities. The reason for this recommendation is that you would need to perform a synchronization with OTM before the changes entered through the overlays would be reflected in OTM. The overlays can be used to modify certain telephone features without modifying names; however, modifying names in the overlays or performing moves, adds, or changes using the overlays will cause the Link To Directory check box to become unchecked. This is manageable only if there is a process in place to record the changes and manually update OTM later, or if you do not want the CPND name to be reflected in the Display Name attribute or the employee name. In this situation, the CPND name (the name appearing on telephone displays) will be different from the employee name in Station Administration and in the Employee tab of the Employee Editor.

Summary

The name captured in LD 10, LD 11, or LD 95 on the PBX is the CPND name on the telephone. A Display Name attribute is associated with an Employee Editor record; however, it is not necessarily the same as First Name and Last Name in the Employee Editor, and it could also be different from the CPND name for a given DN. The CPND name appears in the CPND application and as the Display Name attribute in the Employee Editor if there is only one DN and the Link To Directory check box is checked. The employee name appears in Station Administration indicating the owner of the DN and in the First Name and Last Name fields in the Employee Editor as the proper name for the employee. The First Name and Last Name can be synchronized with a corporate LDAP server. The master repository for the employee name will usually be the corporate LDAP server; however, the information for the Display Name attribute for an employee may come from either the corporate LDAP server or from OTM.

Telephone changes, other than a change to name information, may be made through the overlays and then synchronized to pull the information into OTM. If you choose to make changes to the CPND name using the overlays, you should understand the effect this will have on the information contained in the Employee Editor and in the Station Administration and CPND applications. In this situation, you will need to develop and follow an appropriate process to resynchronize the data in OTM as necessary.

How names are populated in OTM

Names are populated in OTM using one of the following three methods:

- By retrieving telephone information from the PBX for telephones that are not defined in OTM
- By adding new CPND names using the CPND application
- By retrieving CPND names from the PBX using the CPND application

Retrieving telephone information from the PBX

Retrieval of the telephone information takes place in two phases. First, a command is issued to write the TNB data block information to a file, and then the file is parsed to update the OTM database.

While parsing the telephone information, OTM will search from Key 0 onwards to locate the first multiple appearance DN with MARP set to yes. This is the MARP DN. The CPND name associated with this DN is used to search the Employee Editor database for the first employee with a matching Display Name attribute, and the telephone is assigned to this employee. If no match is found, OTM next searches for a matching First Name and Last Name, and the telephone is assigned to this employee. If there is still no match found, OTM will create a new employee record and assign the telephone to this employee. When the new employee is created, the CPND name information is also entered into the Display Name attribute and in the First Name and Last Name fields in the Employee Editor.

If the telephone does not have any MARP DNs, the CPND name information for the Primary DN (Key 0) will be used to determine the owner of the telephone.

If the telephone does not have and MARP DNs or a Primary DN, the telephone will not be assigned to any employee.

Note: For ACD telephones, OTM does not use the CPND name associated with the ACD DN to form employee names in the Employee Editor. OTM will ignore the ACD DN and use the next MARP DN on the telephone.

Adding new CPND names

You can directly add the CPND name for a DN using the CPND application. If the DN is associated with an employee in the Employee Editor, and there is no Display Name attribute for the employee, you can type the name into the First Name and Last Name Fields in the CPND Name dialog box and check the Link To Directory check box. This will automatically populate the Display Name attribute in the Employee Editor with the CPND name once you click OK in the CPND Name dialog box.

Retrieving CPND names from the PBX

You can retrieve CPND names from the PBX using the CPND application. From the System Window for the desired system, double-click CPND (which is located under Stations in the navigation tree) to launch CPND Administration. From the CPND Administration window select Synchronize > Retrieve. You can retrieve all records or specify the records you want to retrieve. If the DN is associated with an employee in the Employee Editor, the Link To Directory check box will be available in the CPND Name dialog box. This will allow you to determine whether or not the CPND name is propagated to the employee's Display Name attribute.

Modifying names in OTM

The following five activities will modify the various names associated with a telephone in OTM:

- Changing the owner of a telephone
- Changing the owner's name
- Changing the owner's Display Name attribute

- Retrieving modified CPND names from the PBX
- Changing CPND names using the CPND application

Changing the owner of a telephone

If you change the owner of a telephone by selecting a different employee in the Employee Editor, OTM will analyze all the CPND names associated with the multiple appearance DNs (MARP DNs) on the telephone. If the CPND names have the Link To Directory check box checked, the CPND names will be updated with the name in the new owner's Display Name attribute.

Changing the owner's name

When you change an employee name using the Employee Editor, OTM automatically updates the Display Name attribute for the employee and the CPND names for all associated DNs that have the Link To Directory check box checked. This is also true when the employee name is changed as part of an LDAP synchronization. The reverse is not true, in other words, making a change to the Display Name attribute will not change the employee name.

Changing the owner's Display Name attribute

When you change the Display Name attribute for an employee, OTM automatically updates the CPND names for all associated DNs that have the Linked To Directory check box checked. This is also true when the Display Name attribute is change as part of an LDAP synchronization. The employee name in the Employee Editor does not change.

Retrieving modified CPND names from the PBX

If you change the CPND name on the PBX using the overlays, and the modifications are retrieved by OTM, the CPND name in OTM will be updated with the new name. This will not change the employee name in the Employee Editor. OTM will uncheck the Link To Directory check box while changing the CPND name in the CPND application. Additionally, since the Link To Directory check box is unchecked, the Display Name attribute associated with the employee will not be updated.

Changing CPND names using the CPND application

You can change the CPND names independently using the CPND application. If the Link To Directory check box is checked, OTM will not allow you to change the CPND name, and the First Name and Last Name fields are read-only. When the Link To Directory check box is checked, these fields are populated by the information in the Display Name attribute in the Employee Editor, and you must uncheck the box to proceed.

If you uncheck the Link To Directory check box, change the CPND name, and click OK, OTM will backfill the Display Name attribute in the Employee Editor if and only if there is no other DN associated with this employee that has the Link To Directory check box checked. This activity will not change the employee name in the Employee Editor.

You can also access the CPND Name dialog box from within the Station Administration application by clicking the CPND button in the Directory Numbers dialog box. See Figure 232 on page 464.

Note: It is possible to have more than two different names associated with the owner of a telephone in OTM if the Link To Directory is unchecked. This occurs because, with the Link To Directory check box unchecked, the CPND name does not necessarily match the Display Name attribute. With multiple DNs on the telephone, each DN that does not have the Link To Directory check box checked could have a unique CPND name. If the Link To Directory check box is checked in the CPND Name dialog box for all DNs on the telephone, then only two different names can exist in OTM; the employee name, and the Display Name attribute which is also propagated to the CPND name for all associated DNs.

Impact on names when deleting telephones

When you delete all of the telephones belonging to an employee, OTM will automatically delete the Display Name attribute for the employee. This is done because the Display Name attribute is displayed as the CPND name for each of these telephones when the Link To Directory check box is checked. An OTM retrieval from the PBX will use the CPND name from the PBX as a reference to search for a matching employee by comparing the CPND name with Display

Name attribute of the employees listed in the Employee Editor. By deleting all of the telephones belonging to an employee, and thereby deleting the Display Name attribute associated with the telephones, any subsequent retrievals from the PBX will handle the retrieved telephone information in the following manner:

- If a telephone that was just deleted in OTM is retrieved from the PBX, and there is no other employee with a Display Name attribute that matches the CPND name on the telephone, and the CPND name on the telephone matches an employee name in the Employee Editor, and this employee name is unique (there is only one occurrence of this employee name in the Employee Editor), the telephone will be associated with the same employee.
- If a telephone that was just deleted in OTM is retrieved from the PBX, and there is no other employee with a Display Name attribute that matches the CPND name on the telephone, and the CPND name on the telephone does not match any employee name in the Employee Editor, a new employee entry will be entered in the Employee Editor and the telephone will be associated with the new employee. In this instance, the CPND name from the retrieved telephone will also be entered as the employee name and the Display Name attribute in the Employee Editor.
- If a new telephone has been set up on the PBX with a CPND name, during the retrieval the CPND name will first be compared to the Display Name attributes in the Employee Editor. If there is no match found, the CPND name will be compared to the employee names in the Employee Editor until the first match is found. When a match is found, the telephone will be associated with the matching employee. If no match is found, a new employee entry will be entered in the Employee Editor and the telephone will be associated with the new employee. In this instance, the CPND name from the retrieved telephone will also be entered as the employee name and the Display Name attribute in the Employee Editor
- If a new telephone has been set up on the PBX without a CPND name, then no new employee entries are created in the Employee Editor, and the telephone is only established within the Station Administration application.

CPND data considerations

You should be aware of the following considerations when using the CPND Administration function of Station Administration.

CPND Names versus Station Names

The name defined for CPND need not necessarily be the same as that defined for a station end user on the face of the station graphic. The Station Configuration Name is only maintained in OTM and is not stored in the Meridian 1 or Succession CSE 1000 system. The name stored by OTM is the CPND associated with a particular DN.

In most cases, the name on the station graphic is also the name associated with a DN of the station. OTM can automatically link the name on the graphic with one or more of the DNs on the station. To link the name on the graphic with a DN, check the Link To Directory check box in the CPND Name dialog box.

The Station Retrieve module automatically parses and updates the Meridian 1 or Succession CSE 1000 system's CPND Name information. Changes to the name on the station do not affect the station's Sync Status but do update any CPND name entry to RPL.

If the name data is linked in this manner, the first and last names in the CPND Name dialog box are filled in and grayed. The data can only be changed from the station graphic. To remove the linkage, uncheck the Link To Directory check box in the CPND Name dialog box.

The CPND Name information is accessed in either the Station module (from a CPND function button in the DN list dialog box) or the CPND module. All CPND data is synchronized with the Meridian 1 or Succession CSE 1000 system using LD 95.

CPND synchronization

CPND and Station synchronization are separate functions. They are only connected if CPND data is defined from the Station DN list, or if the CPND name is taken from the Name field of the Station Administration module.

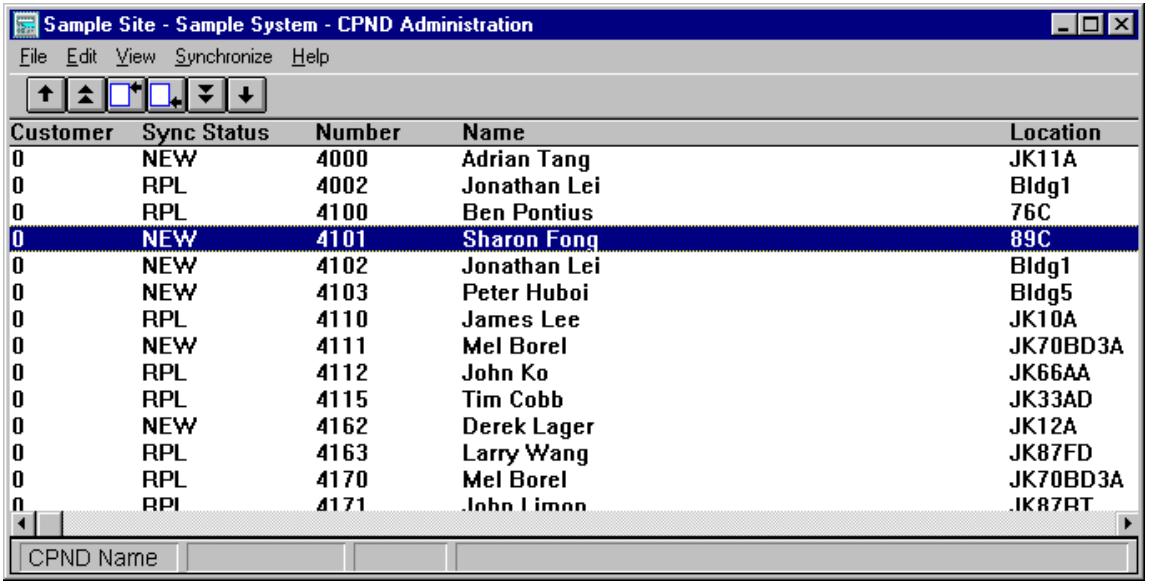
If OTM is in Maintenance mode, the system automatically attempts to synchronize the new CPND information when the station is transmitted. In installation mode, you must synchronize CPND data separately from within the CPND module.

CPND module

The OTM CPND Administration module allows access to the CPND data for a single Meridian 1 or Succession CSE 1000 system. When you open the CPND module, a list of name data contained within OTM appears. If the data has not yet been retrieved from the Meridian 1 or Succession CSE 1000 system, or added to the OTM database, the window contains no data.

Figure 245 shows the OTM CPND Administration window as it first appears.

Figure 245 CPND Administration window



Accessing CPND data

The OTM CPND Administration window allows you to configure CPND blocks. After CPND blocks are configured, you can configure Name data for DNs.

From the View menu, the following list views for CPND data are available:

- Customer Configuration list (CPND Administration)
- Name display list (CPND Name)

The Customer Configuration list contains only a few items (just one in many cases). This view lists the CPND blocks configured on this system. The Name display list may have many items, probably more than will fit in the current window. This is the scrollable list of names whose display parameters are defined for CPND.

CPND Administration view

With View > CPND selected, the CPND Administration window displays the list of CPND blocks configured for the system. The following information is displayed for each customer:

- Customer: The customer number as defined in the system configuration
- Sync Status: The synchronization status of the station's data between the Meridian 1 or Succession CSE 1000 system and OTM

The data in the window is part of the CPND Administration data stored in OTM. The complete configuration data for this system is available as described in the CPND Data Change section of this document.

CPND Name view

With View > CPND Name selected, the CPND Administration window shows a list of names defined in the system. The following headings define the data for each station displayed:

- Customer: The customer number that uses this DN
- Sync Status: The synchronization status of the station's data between the Meridian 1 or Succession CSE 1000 system and OTM
- Number: The DN using the CPND data
- Name: The defined CPND name
- Location: The optional unique station Location Code from the Station Data dialog box (see Figure 242 on page 483)

Sync Status: An indication of whether Meridian 1 or Succession CSE 1000 system data and the data in OTM are synchronized. The following list defines the status for CPND data:

- **NEW**: CPND data defined in OTM that has never been uploaded to the Meridian 1 or Succession CSE 1000 system.
- **TRN**: The CPND data is synchronized with Meridian 1 or Succession CSE 1000 system.
- **CHG**: Data has been changed in OTM but the change has not been sent to the Meridian 1 or Succession CSE 1000 system.
- **RPL**: Data defined in OTM to replace synchronized name data.
- **OUT**: Synchronized CPND data deleted from OTM but not yet removed from the Meridian 1 or Succession CSE 1000 system.
- **CUR:** The CPND data is synchronized with the Meridian 1 or Succession CSE 1000 system.
- **SWP:** Data defined in OTM to replace synchronized name data.

The data in the window is part of the name display data stored in OTM. The complete name data is available as described in CPND Data Change.

CPND records can be sorted and displayed in a number of ways. In the CPND Administration window, select View > Sort. Records can be sorted by the following:

- Directory Name
- Last Name
- First Name
- Sync Status

Note: When upgrading from a previous release of OTM, any CPND name that is linked to a directory entry will not sort by first name and last name since names linked to stations in this way are not stored in the CPND data base. Perform a station retrieval to resolve this discrepancy.

Recommended usage

You cannot build CPND Name data until the CPND data block is defined. First you must configure, or retrieve from the Meridian 1 or Succession CSE 1000 system, the CPND data block for the selected customer.

When the customer's CPND data block is defined, you can create, or retrieve from the Meridian 1 or Succession CSE 1000 system, the CPND Name display information.

CPND data change

You can change the data associated with the selected CPND view. The selected item in the list view is highlighted. Select an item using a mouse click, or use the up/down arrow keys to highlight the desired item. You can also double-click the desired item.

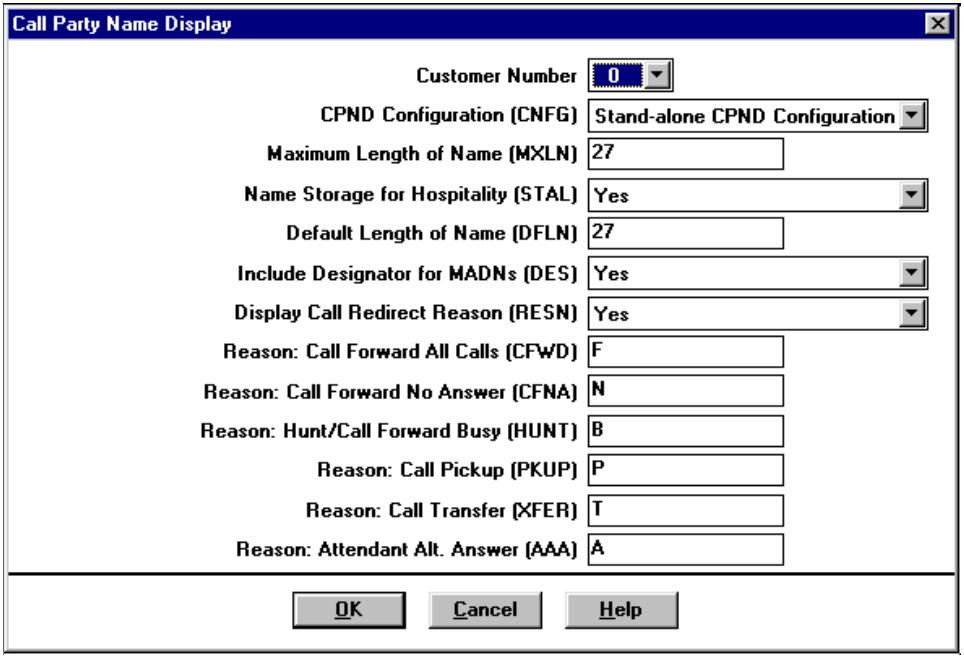
Choose Edit > Delete to remove the selected CPND list item. Choose Edit > Update or Edit > Add to display a dialog box that allows you to update the data fields for the selected view.

Updating the Customer Configuration data

With View > CPND selected, you can change the selected customer's CPND data. The selected CPND block is highlighted in the customer list window.

Choose Edit > Update to display the Call Party Name Display dialog box (Figure 246).

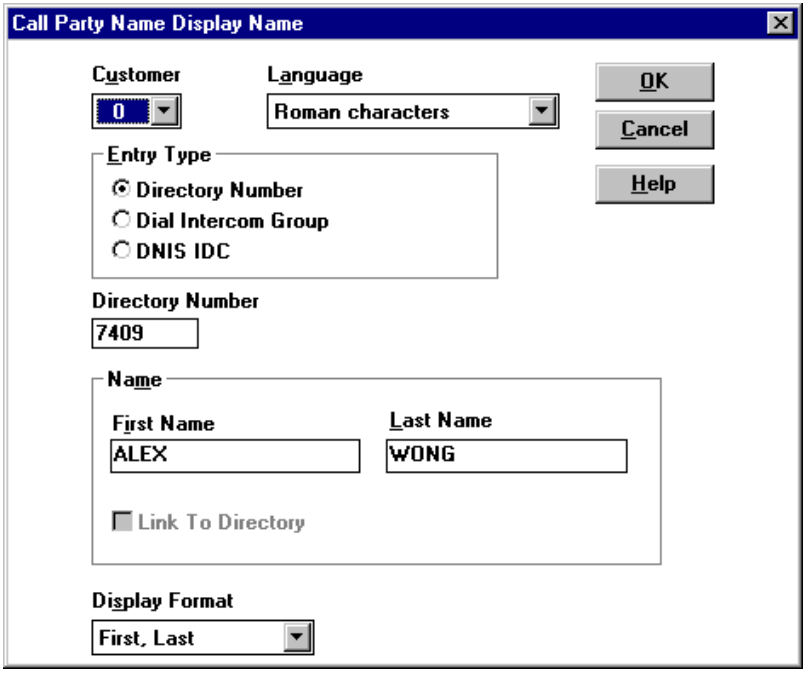
Figure 246 Call Party Name Display dialog box



Updating the Name display data

Choose Edit - Update in the CPND Name view window (or double-click the item in the list) to display the CPND Name dialog box for the selected station name (Figure 247).

Figure 247 CPND Name dialog box



The Link To Directory check box indicates that the CPND for this name is the Display Name of the Directory Entity that owns the set to which this DN is assigned. To modify this CPND, you must uncheck the Link To Directory box.

When the Display Name associated with a CPND is removed from a set, the link to Directory is broken and the above box is unchecked.

List Manager

This section contains information about how to use List Manager. The List Manager module allows you to work with the following list types:

- Speed Call and System Speed Call—Allows a user to place a call to a telephone number by dialing a short code. These codes are managed as entries in a Speed Call list.
- Group Call—Allows a user to place a call to a list of DNs at the same time by pressing the Group Call key.

- Group Hunt—Allows the system to route an unanswered call to the next idle DN in a prearranged hunt chain (or list), based on the Group Hunting Pilot DN linked with the station's Prime DN.

Note: The Group Hunt feature is not applicable to the North American market.

Summary of List Manager

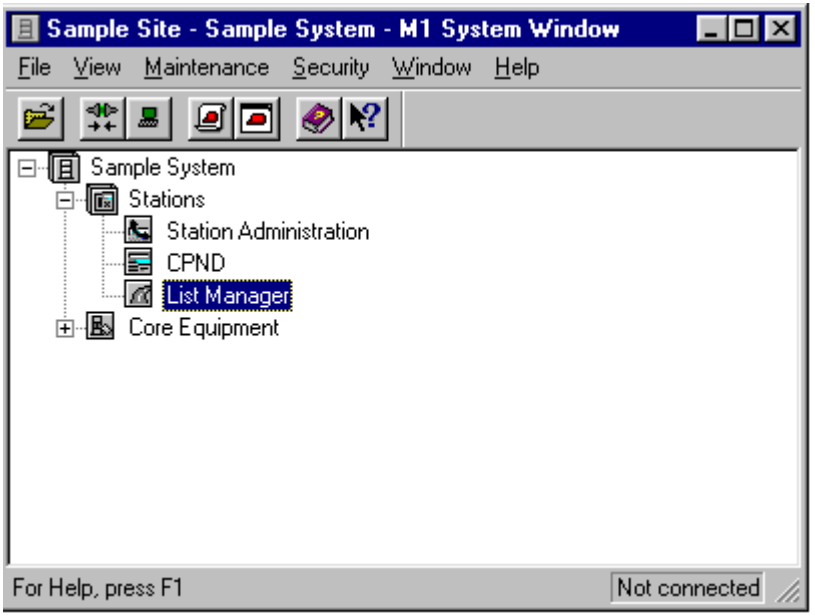
List Manager allows you to perform the following functions:

- Create and modify lists.
- Create multiple lists with one operation.
- Copy and paste lists from one system to another.
- Work with list templates.
- Set default properties for all lists of a given type.
- Assign a station to a list (In the Stations module you can assign a list to a station).
- Assign a Pilot DN to a list.
- Print reports on list usage.

Open List Manager

Figure 248 shows where to access List Manager from within the System Window.

Figure 248 OTM System Window



To open List Manager for a system:

1 From the OTM Navigator, open the system window for the selected system.

2 In the System window tree control, open Stations.

3 Double-click the List Manager icon.

The List Manager window opens.

Download list data from the Meridian 1 or Succession CSE 1000 system

If list data is present on the system, download the list data to OTM the first time you open List Manager. You can synchronize each list type separately or synchronize all list types at once.

To download list data from the Meridian 1 or Succession CSE 1000 system:

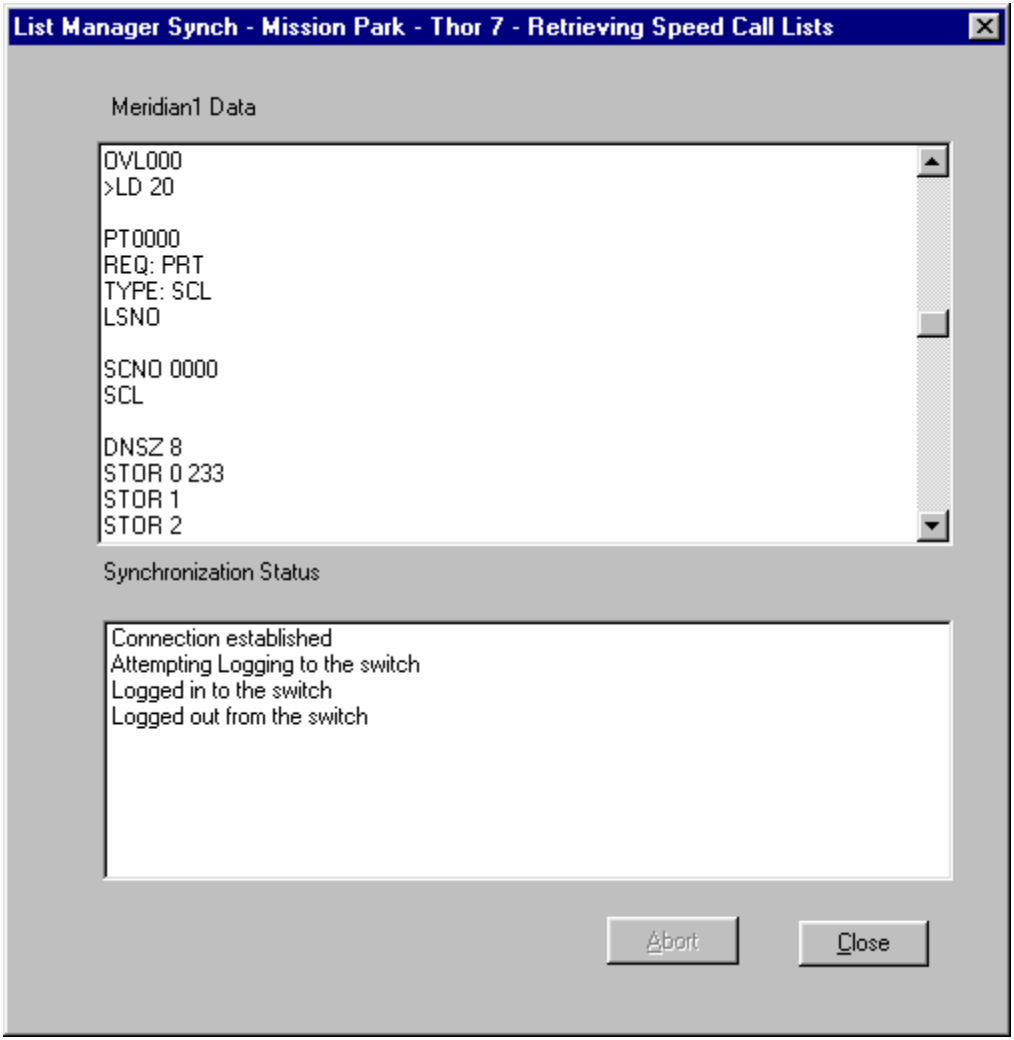
1 Select a list type in the List Type view, or select the item called "List Manager" to download data for all list types.

2 Choose Synchronize > Retrieve > Now.

Note: Your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

The List Manager Sync window opens (Figure 249).

Figure 249 List Manager Sync window



List Manager automatically logs in to an idle TTY port and downloads list data to the OTM PC.

3 Wait until the Synchronization Status section displays the following message:

Logged out from the switch

4 Click Close.

Synchronization considerations

You can transmit data to program a Meridian 1 or Succession CSE 1000 system with relevant list data defined in OTM's List Manager application. List Manager can also retrieve list data from a Meridian 1 or Succession CSE 1000 system, where it can be viewed and modified.

If you have a Meridian 1 or Succession CSE 1000 system with list data already programmed, you should first download the data to OTM. See "Download list data from the Meridian 1 or Succession CSE 1000 system" on page 508. Then you can modify the data and upload the changes to the Meridian 1 or Succession CSE 1000 system.

Use the Synchronize menu to schedule communications with the system. Synchronization is a task that ensures the list data in OTM matches the data on the Meridian 1 or Succession CSE 1000 system. Synchronization can be achieved in one of two ways, as follows:

- Retrieve data from the Meridian 1 or Succession CSE 1000 system to OTM (download).
- Transmit data from OTM to the Meridian 1 or Succession CSE 1000 system (upload).

Note: Generally, you should transmit list data before transmitting station data. This ensures that the list is present on the system before Station Administration assigns feature key access to the list.

Synchronization status

When OTM performs a data retrieval, the synchronization status of each list determines whether the data is updated. The following status indicators define how the list is affected during a synchronization:

- **NEW**: Data has been defined, but not uploaded to the Meridian 1 or Succession CSE 1000 system.
- **TRN** (transmit): Data is synchronized with the Meridian 1 or Succession CSE 1000 system.
- **OUT**: Data is removed from OTM and will be deleted from the Meridian 1 or Succession CSE 1000 system during the next synchronization.
- **CHG** (change): Data has been changed, but the changes have not been uploaded to the Meridian 1 or Succession CSE 1000 system.
- **RPL** (replace): Data in the Meridian 1 or Succession CSE 1000 system is replaced with new data during the next synchronization.

List Manager automatically sets the synchronization status of each list. For example, if you modify parameters of an existing list, the synchronization status is set to CHG (change).

Change synchronization status

You can change the synchronization status of each list in List Manager. For example, if you change parameters for a list, but do not want the changes to take affect on the system right away, you can change the synchronization status of the list to TRN.

To change the synchronization status of a list in List Manager:

1. Select a list.
2. Choose Edit > Change Status to and choose a new status from the available choices.

Station synchronization versus List synchronization

List Manager synchronization is a separate task from Station Administration synchronization. After you synchronize list data, you should synchronize station data.

Transmit list data to the switch before transmitting station data. Some List Manager settings make changes in OTM's Station Administration module (for example, feature key assignment). You must ensure the list data is present on the system so that station validation does not fail.

Synchronize List Manager with the system

You must periodically synchronize List Manager data with data on the Meridian 1 or Succession CSE 1000 system.

Upload

To upload data from OTM List Manager to the Meridian 1 or Succession CSE 1000 system:

1. In the List Type view, select the list type that you want to synchronize or select "List Manager" to synchronize all list types.
2. Choose Synchronize > Transmit > Now. The List Manager Sync window opens (Figure 249).

Note: Your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

3. When the Synchronization status area displays "Logged out from the switch," click Close.

   The selected list type is synchronized with the Meridian 1 or Succession CSE 1000 system.

Download

To download data from the Meridian 1 or Succession CSE 1000 system to OTM List Manager:

1. Select the list type that you want to synchronize or select "List Manager" to synchronize all list types.

2 Choose Synchronize > Retrieve > Now. The List Manager Sync window opens (Figure 249).

Note: Your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

3 When the Synchronization Status area displays "Logged out from the switch," click Close.

The selected list type is synchronized with the Meridian 1 or Succession CSE 1000 system.

List Manager window

The List Manager window is divided into two sections:

- List Type view—Allows you to select a list type. Lists of the selected type appear in the List Detail view. You can also select List Manager to perform global operations.
- List Details view—Allows you to select one or more lists of a specific type. You can select a list and edit its properties, or copy the list data.

Note: If you choose menu View - Templates, the List Details view shows list templates.

Figure 250 shows the List Manager window.

Figure 250 List Manager window

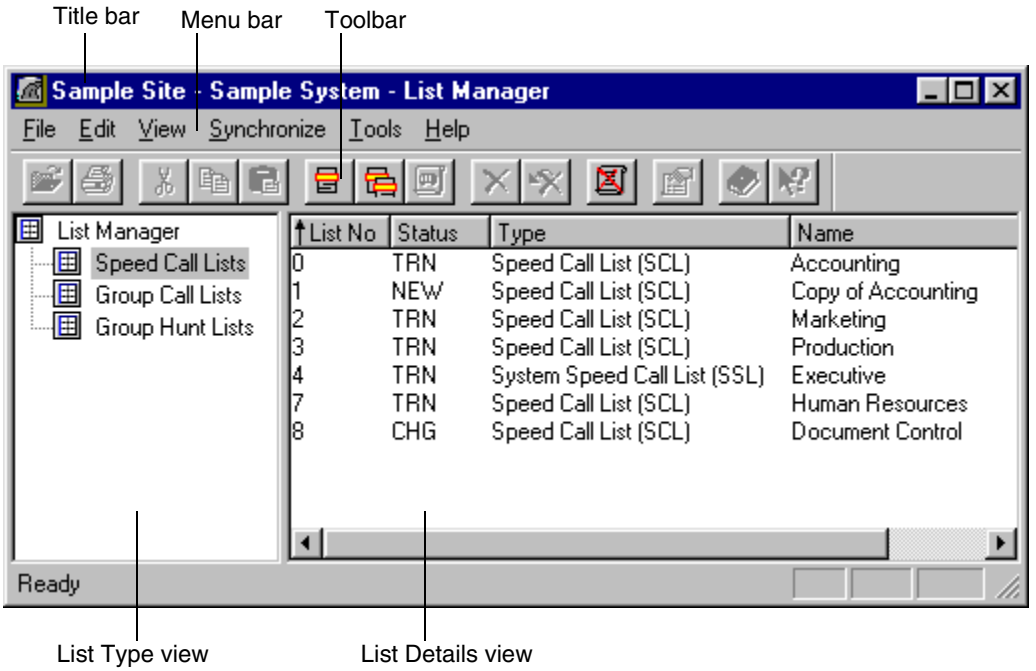


Figure 250 calls out the following List Manager components:

- **Title bar**—Identifies the system and contains standard Windows controls to minimize, maximize, and close the window
- **Menu bar**—Provides easy access to List Manager commands
- **Toolbar**—Provides easy access to List Manager commands
- **List Type view**—Allows you to select which type of list to access
- **List Details view**—Displays all lists of the selected type, including the list number, synchronization status, list type, and list name

List Details view

Choose View > Lists to display the lists defined for the system. Each list contains the following information:

List Number: Unique number used to identify the list on the system.

Type: Type of list, based on the Meridian 1 or Succession CSE 1000 feature it supports (Speed Call, System Speed Call, Group Call, Group Hunt).

Sync Status: An indication of whether the Meridian 1 or Succession CSE 1000 system's data and the data in OTM are synchronized. The following information defines the synchronization status for each list:

- **NEW**: List data defined in OTM, but not uploaded to the Meridian 1 or Succession CSE 1000 system
- **TRN**: List data is synchronized with the Meridian 1 or Succession CSE 1000 system
- **CHG**: List data has been modified in OTM but not in Meridian 1 or Succession CSE 1000 system
- **RPL**: List data defined in OTM to replace synchronized station data
- **OUT**: A synchronized list deleted from OTM but not yet from the Meridian 1 or Succession CSE 1000 system

Name: A name entered in List Manager, used to identify this list.

The Template view

Choose menu View - Templates to display list templates defined for the system. The display contains the same information for a template as the List view contains for a list.

Templates provide data that is common among many individual lists. In a single operation, using a template, you can define multiple lists which have data in common. A template can contain all or part of a list definition. You can change template data in exactly the same way as station data.

List Manager menus

List Manager's menus consist of the following:

- File
  - — **Open**: Display the property sheet of the selected list or template.
  - — **New**:
    - — **List**: Create a new list. Displays the New List property sheet.

  - — **Multiple Lists**: Create more than one new list. Displays the Multiple List Creation dialog box.
  - — **Template**: Create a new template. Displays the New Template property sheet.
- — **Print Setup...**: Select a printer and a printer connection.
- — **Reports**: Select a Report.
- — **Properties**: Display the property sheet of the selected list or template.
- — **Close**: Close the List Manager window.

- Edit
  - — **Undo**: Reverse the most recent command.
  - — **Cut**: Remove the selected list(s) or text and place it on the clipboard.
  - — **Copy**: Place a copy of the selected list(s) on the clipboard.
  - — **Paste**: Insert a copied list into the List Details view.
  - — **Delete**: Remove the selected list(s) from the List Manager window.
  - — **Select All**: Selects all lists in the List Manager Display View.
  - — **Change Status to**:
    - — **NEW**: Change the synchronization status of the selected list to NEW. Data has been defined, but not uploaded to the Meridian 1 or Succession CSE 1000 system.
    - — **TRN**: Change the synchronization status of the selected list to TRN (transmitted). Data is synchronized with the Meridian 1 or Succession CSE 1000 system.
    - — **OUT**: Change the synchronization status of the selected list to OUT. Data is removed from OTM and will be deleted from the Meridian 1 or Succession CSE 1000 system during the next synchronization.
    - — **CHG**: Change the synchronization status of the selected list to CHG (change). Data has been changed, but the changes have not been uploaded to the Meridian 1 or Succession CSE 1000 system.
    - — **RPL**: Change the synchronization status of the selected list to RPL (replace). Data in the Meridian 1 or Succession CSE 1000 system is replaced with new data during the next synchronization.
- View
  - — **Toolbar**: Displays or hides the Toolbar.
  - — **Status Bar**: Displays or hides the Status Bar.
  - — **Lists**: Change the display view to show lists.

- **Templates**: Change the display view to show templates.

- Synchronize
  - **Transmit:**
    - **Now**: Transmit data from OTM to the Meridian 1 or Succession CSE 1000 system.
    - **Schedule**: Schedule a transmission of data from OTM to the Meridian 1 or Succession CSE 1000 system.
    - **View Last Transmit**: Display a log file showing results of the last data transmission.
  - **Retrieve**:
    - **Now**: Retrieve data from the Meridian 1 or Succession CSE 1000 system to OTM.
    - **Schedule**: Schedule a retrieval of data from the Meridian 1 or Succession CSE 1000 system to OTM.
    - **View Last Retrieve**: Display a log file showing results of the last data retrieval.
- Tools
  - **Delete Unused Lists**: Display the Delete Unused Lists dialog box.
  - **Options**: Displays the Options dialog box.
- Help
  - **Help Topics**: Display the list of Help topics.
  - **What's This**: Provides context-sensitive Help on the next item you select. Clicking anywhere else takes you to the first topic in the Help topic list.
  - **About List Manager**: Display release information for the List Manager window.

Toolbar

The List Manager toolbar includes several useful buttons. The function of each button in the toolbar appears when you hold the mouse cursor over the button. Toolbar buttons provide shortcuts to some of the same commands found in the menus.

Work with List Manager

This section provides procedures to help you use List Manager to perform common tasks.

Create a new list

You can create a new list in List Manager and upload the data to the Meridian 1 or Succession CSE 1000 system. The synchronization status of the new list is NEW. You must transmit the list data to the Meridian 1 or Succession CSE 1000 system for the new list to become active.

To create a list:

1. In the List Type view, select the type of list you want to create.
2. Select File > New > List.

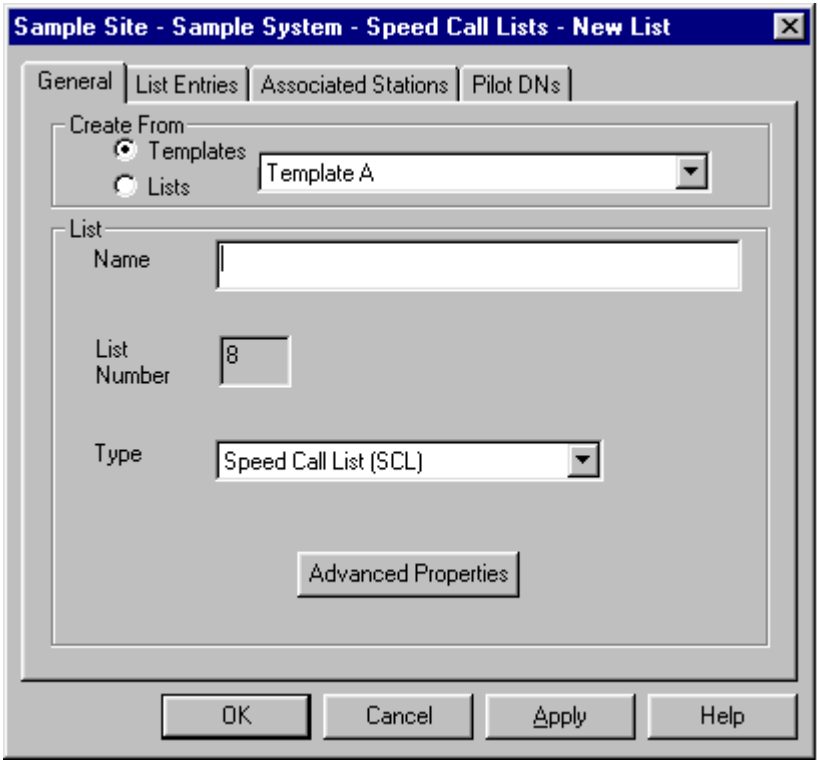
   The New List (General) property sheet opens (Figure 251).

Note: The New List property sheet for each list type is the same as the standard property sheet for that list type. Some default values for the new list are automatically entered.

Note: You can edit some of the default values for a new list. To edit the list number, the option for Auto List Number Allocation (Tools - Options) must be unchecked.

3. Select either a template or an existing list to use as a basis from which to create the new list.
4. Enter a list name (up to 50 characters, alphanumeric).
5. Select the list type.
6. Click OK or Apply.

Figure 251 Speed Call list properties (General)



7 Click Apply if you want to modify list parameters. Click the tabs along the top of the property sheet to view various parameters.

Create a list template

You can create a list template or modify an existing template. Templates provide data that is common among many individual lists. A template allows you to define multiple lists that share common elements.

To create a list template:

1 Choose View > Templates.

2 Choose File > New > Template.

The New Template dialog box opens with the General tab displayed (Figure 252).

3 Select either a template or a list to use as a basis from which to create the new template.

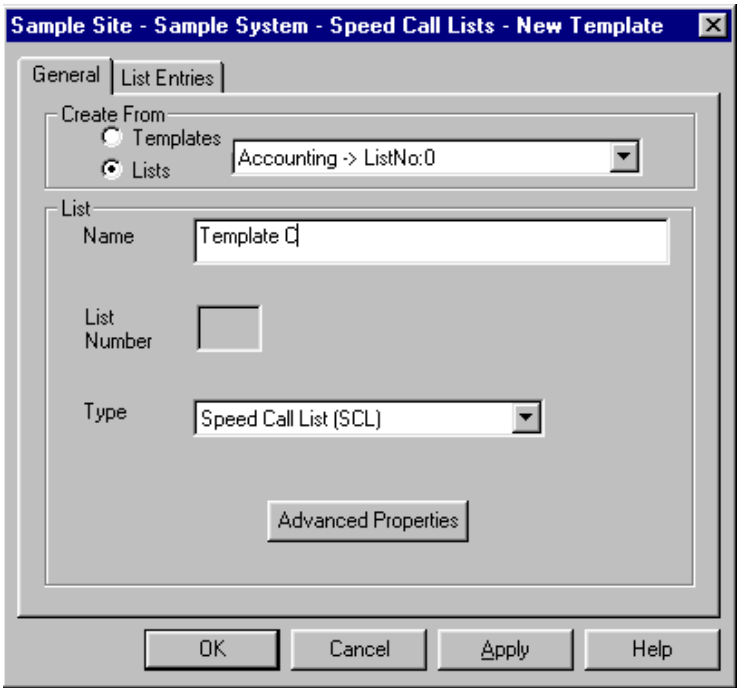
4 Enter a template name (up to 50 characters, alphanumeric).

Note: The List Number field does not apply when creating a template.

5 Select the list type to which this template applies.

6 Click OK or Apply.

Figure 252 New Template dialog box

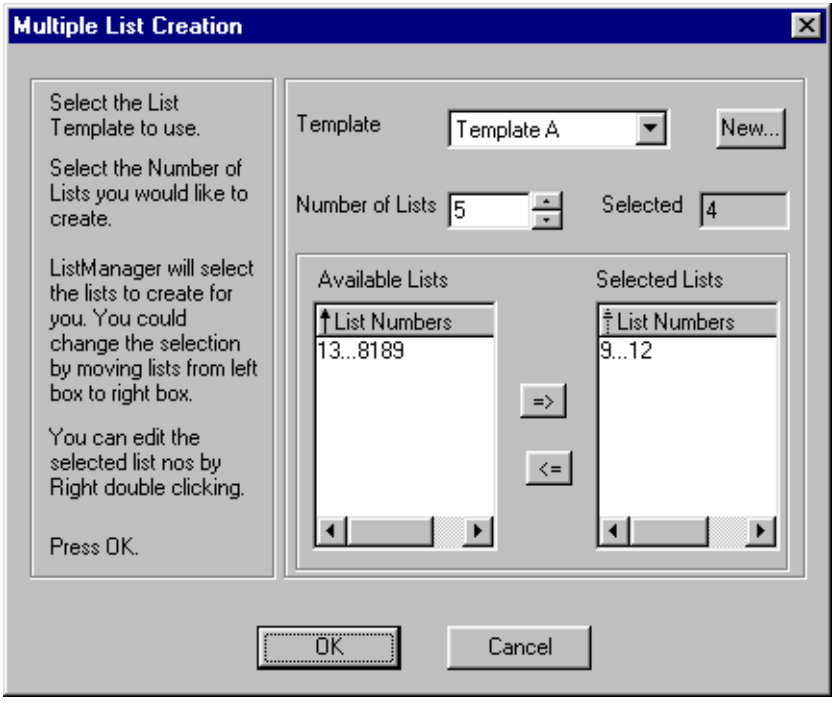


Create multiple lists

You can create multiple lists with a single operation. You must have a valid template that corresponds to the list type that you want to create. After creating the lists, you should modify each list to provide its unique parameters.

Figure 253 shows the Multiple List Creation dialog box.

Figure 253 Multiple List Creation dialog box



To create multiple lists:

1. Choose menu View - Lists.
2. Choose menu File - New - Multiple Lists. The Multiple List Creation dialog box appears (Figure 253).
3. Select a template or click New to create a template on which to base the new lists. The template provides common data shared among the lists.
4. Set the number of lists to create.
5. Select the list numbers of the lists to create. Select a range of numbers in the Available Lists field and click the right arrow.

List Manager places the correct number of lists into the Selected Lists field.

Note: In the Available List field and the Selected List field, list numbers are represented as ranges. For example, a range of list numbers from 11 to 20 is represented as follows:

11...20

If you want to create 25 lists and you select the above range, you must still select 15 more list numbers. Select another range to continue adding list numbers to the Selected Lists field. List Manager automatically stops adding list numbers when you reach the correct number, as set in the Number of Lists field.

Note: You can select a subset of a list range. After moving a range from one side to the other, use the right mouse button to double-click on the selected range. You can edit the range to select a subset of the range. For example, if the selected range is 2...10, you can enter 2...9 or 3...8 (but not 1...11).

6 If there are not enough list numbers available in the selected range, select another range and click the right arrow. Continue until you reach the correct number of lists to create.

7 Click OK.

Delete lists

You can select a list or a template and delete it from the system. You can delete all unused lists from the system with one command. The next time you synchronize List Manager lists, the deleted lists are removed from the system.

To delete a list from the system:

1 Choose View > Lists.

2 In the List Type view, select the list type. In the List Details view, select the list.

3 Choose Edit > Delete. A confirmation box appears, stating,

"Are you sure you want to delete the list(s)/template(s)".

4 Click Yes.

To delete a template from List Manager:

1 Choose View > Templates.

2 In the List Type view, select the list type. In the List Details view, select the template.

3 Choose Edit > Delete.

A confirmation box appears, stating, “Are you sure you want to delete the list(s)/template(s)”.

4 Click Yes.

To delete all unused lists of a specific type from the system:

1 In the List Type view, select the list type.

2 Choose Tools > Delete Unused Lists.

The Delete Unused Lists dialog box appears. All unused Speed Call lists appear.

3 Select the lists you want to delete.

4 Click OK.

The synchronization status of the deleted lists is changed to OUT.

Manage list data

OTM displays list data in a property sheet that graphically represents the list data. You can manage individual list entries. Data change is described for a typical list. Most lists contain a subset of the data for this example, and the update procedure for each field and function is the same as that described here.

Whenever you modify list data that has already been synchronized with the switch, the Sync Status for that list is set to CHG. This is an indication that OTM and Meridian 1 or Succession CSE 1000 system are not in sync.

View and modify list (or template) details

Each list has various properties that define the list. Some properties are shared among all lists of a given type; some properties are unique to a specific list. List Manager property sheets allow you to view and modify all of the various list properties.

To view list details and modify list details:

1 Choose View > Lists.

Note: You can choose menu View - Templates to work with List Manager templates.

2 In the List Type view, select a list type.

3 In the List Details view, double-click a specific list.

The property sheet for the selected list appears.

4 Make changes as desired. Click the various tabs to view and modify different list parameters.

5 Modify data in the appropriate fields. If you make changes, click Apply before you move from one tab to the next.

6 When you have completed the changes, click OK.

Set advanced properties

You can change advanced properties for a specific list. Most of the advanced properties have default values that are set in the Options dialog box (see “Set global list options” on page 534).

To set advanced properties for a list (Speed Call and Group Hunt):

1 Select a list and choose File > Properties. The Properties dialog box for the selected list appears with the General tab selected (Figure 251 on page 519).

2 Click Advanced Properties. The Advanced Properties dialog box appears (Table 28).

Table 28 Advanced properties for Speed Call lists and Group Hunt lists

Field	Description
Network Class of Service	Select a Network Class of Service, as defined on the Meridian 1 or Succession CSE 1000 (applies to System Speed Call lists).
Max. DN Size	Select the maximum length of DNs in the list. The default value is set in the Options dialog box (**Tools - Options**).
Max. List Size	Select the maximum number of entries allowed in the list. The default value is set in the Options dialog box (**Tools - Options**).
Memory Usage - in Words	
Free Memory Available	Indicates how much Meridian 1 or Succession CSE 1000 system memory is available for all lists, as of the last synchronization.
Used by List	Meridian 1 or Succession CSE 1000 system memory required for this list.

1 Make your desired changes.

2 Click OK.

Modify list entries

You can view and modify list entries within each list.

To modify list entries:

1 Choose View > Lists.

2 In the List Type view, select a list type.

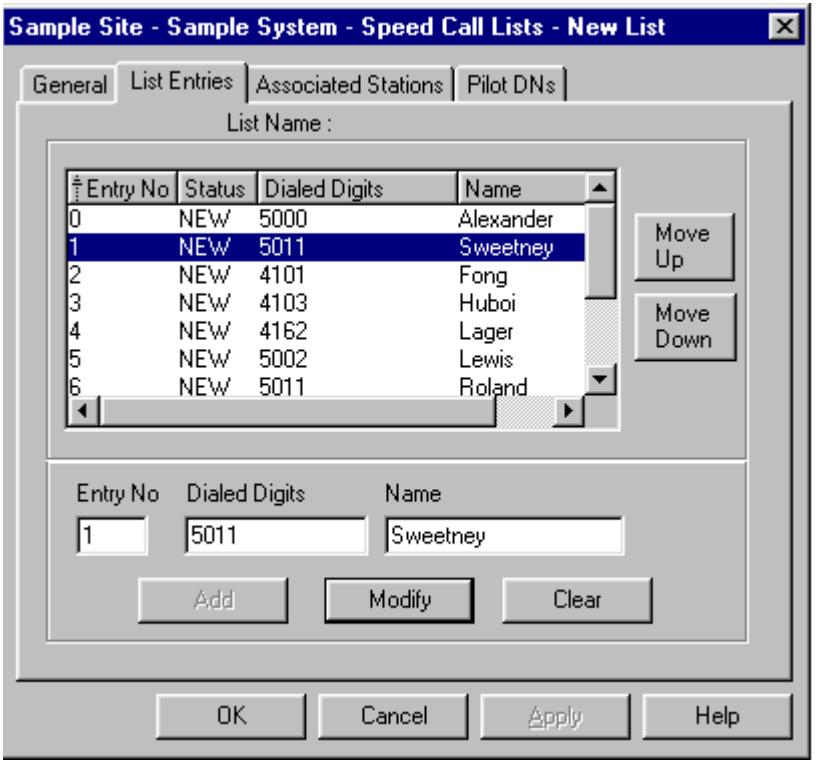
3 In the List Details view, double-click a specific list.

The property sheet for the selected list appears.

4 Click the List Entries tab.

The List Entries tab lets you modify parameters for each list entry number (Figure 254).

Figure 254 Speed Call List properties (List Entries)



5 Use the List Entries buttons to modify list entries (Table 29).

Table 29 List Entries buttons

Button	Description
Add	Add a new entry to the list.
Modify	Modify the selected list entry.
Clear	Clear the selected list entry.
Move Up Move Down	Use these buttons to change the entry number of the selected entry. **CAUTION**: Be careful when you make changes to list entry numbers. This operation re-orders the entry numbers in a list. For example, if you move entry number 10 up to number 2, then entry number 2 becomes number 3, number 3 becomes number 4, and so on. For Speed Call lists, these changes affect the short key used to dial each list entry. For Group Hunt lists, these changes affect the order of the hunt chain.

6 Click OK or Apply.

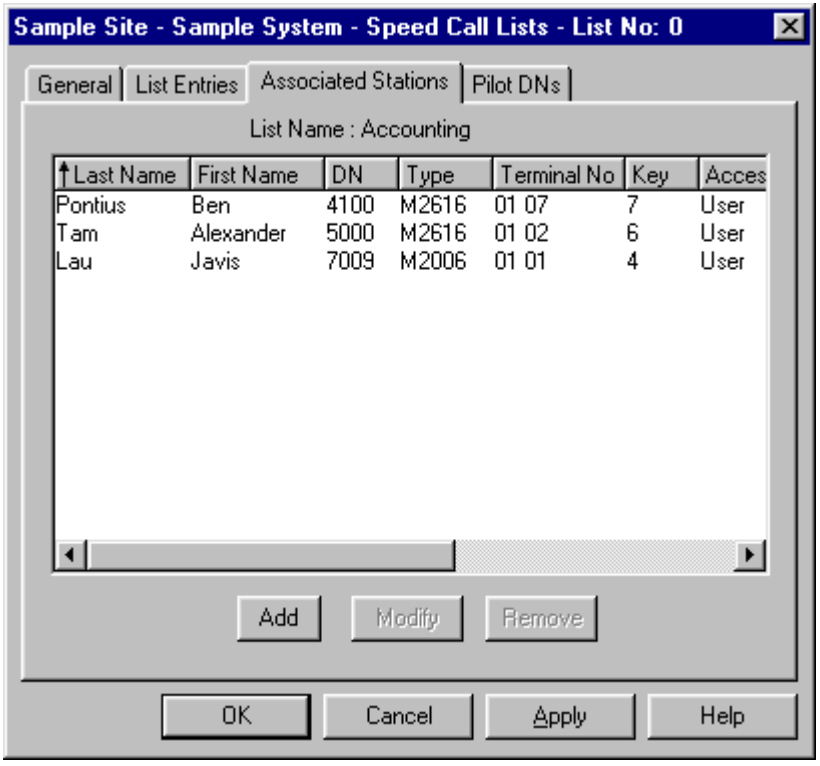
Work with stations

Use the List properties dialog box—Associated Stations tab to assign a feature and its associated list to one or more stations (telephones).

Note: This operation modifies the entries in the Station Administration module. You must synchronize stations from Station Administration to change these settings on the Meridian 1 or Succession CSE 1000 system.

Figure 255 shows the Associated Stations tab for Speed Call Lists.

Figure 255 Speed Call List properties dialog box—Associated Stations tab



Assign stations

To change feature key assignments for stations:

1. Select a list and choose File > Properties.

   The List Properties (General) dialog box appears.

2. Choose the Associated Stations tab.

   Any stations displayed have the feature assigned.

3. Click Add.

   The Add Stations dialog box appears.

4. In the Select Stations list, select the station(s) and feature key(s) you want to assign the feature and its associated list.

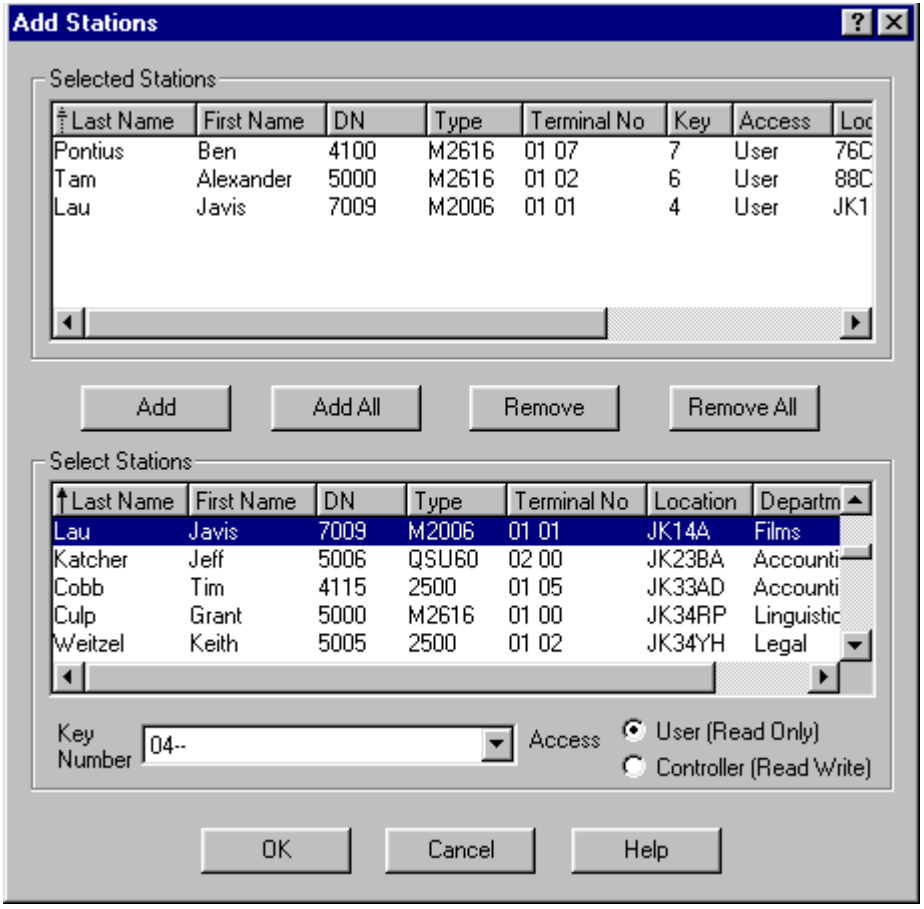
Note: List Manager sets the feature key assignment in OTM's Station Administration module. Therefore, you must transmit the data from Station Administration for the feature key assignment to take effect.

5. Click Add.

   The selected stations are moved from the Select Stations list (bottom) to the Selected Stations list (top).

6. Click OK.

Figure 256 Add Stations dialog box



Modify feature key properties

To change the feature key properties for a station:

1 Select a list and choose File > Properties.

The List Properties (General) dialog box appears.

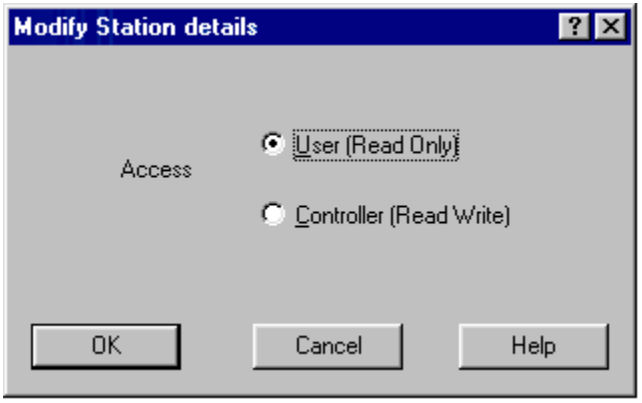
2 Choose the Associated Stations tab.

Any stations displayed have the feature assigned.

3 Select a station and click Modify.

The Modify Station Details dialog box appears (Figure 257).

Figure 257 Modify Station details dialog box (Speed Call)



4 For Speed Call, select either User or Controller to change the access type, if desired.

Note: List Manager sets the feature key assignment in OTM's Station Administration module. Therefore, you must transmit the data from Station Administration for the feature key assignment to take effect.

5 Click OK.

Remove station assignment

To remove the feature associated with this list from a station:

1 Select a list and choose File > Properties. The List Properties (General) dialog box appears.

2 Choose the Associated Stations tab. Any stations displayed have the feature assigned.

3 Select a station or stations and click Remove.

4 Click OK.

Work with Pilot DNs

Pilot DNs provide access to Speed Call Lists. A Pilot DN can also activate Group Hunting.

Assign a Pilot DN

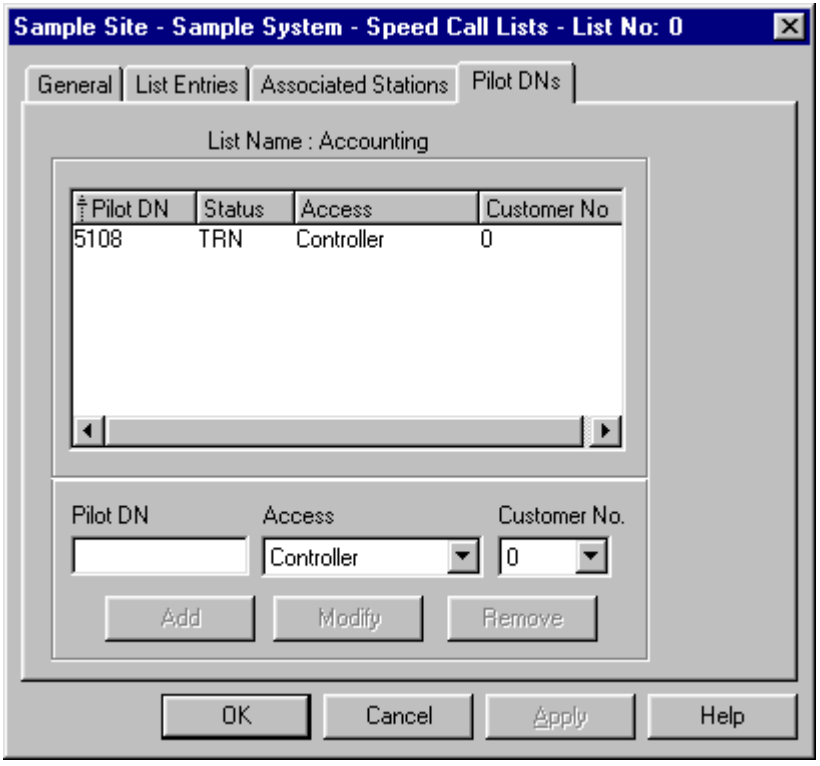
To assign a Pilot DN to a list:

1 Select a Speed Call list and choose File > Properties.

The property sheet for the selected list appears.

2 Click the Pilot DNs tab (Figure 258).

Figure 258 Speed Call list properties (Pilot DNs)



3 Use the buttons to Add, Modify, or remove Pilot DNs associated with this list.

Note: Pilot DNs must conform to the customer Numbering Plan. To check the customer Numbering Plan, do the following:

– In the Navigator, select the system and choose menu File - Properties.

– Click the Customers tab.

– Select the customer and click Properties.

– Click the Numbering Plans tab.

4 Click OK or Apply.

Associate Pilot DN to a Group Hunt list

To associate a Pilot DN with a Group Hunt list:

1 Select a Group Hunt list and choose File > Properties. The property sheet for the selected list appears.

2 On the property sheet General tab, enter the pilot DN into the Pilot DN field.

3 Click OK or Apply.

Copy and paste lists

You can use the copy and paste commands to duplicate a list. Then you can modify the new list to make it unique. You can also paste the list into the List Manager window for a different system.

When you copy and paste a list, the synchronization status of the new list is set to NEW. The new list is added to the system during the next synchronization.

Duplicate a list

To duplicate a list:

1 Choose View > Lists.

2 Select a list and choose menu Edit > Copy.

The list data is saved to the PC clipboard.

3 Choose Edit > Paste.

Caution: A confirmation dialog box asks if you want to overwrite the current list with the copied list. Normally, you do not want to overwrite the current list.

a Click Change Properties and give the pasted list a new list number.

b Make any other changes that are appropriate.

c Click OK.

Copy a list from one system to another

To copy a list and paste it to another system:

1 Choose View > Lists.

2 Select one or more lists and choose Edit > Copy.

The list data is saved to the PC clipboard.

3 Open another system's List Manager application.

4 Choose View > Lists.

5 In the List Type view, select the appropriate list type.

6 Choose Edit > Paste.

Caution: If the list number of the list you copied is present on this system, a confirmation dialog box asks if you want to overwrite the current list with the copied list. Normally, you do not want to overwrite the current list.

a Click Change Properties and give the pasted list a new list number.

b Make any other changes that are appropriate.

c Click OK.

Set global list options

Use the Options dialog box to set general parameters that apply to all lists of a specific type.

To display the Options dialog box:

➔ Choose Tools > Options.

The Options dialog box has separate tabs for Speed Call, Group Call, and Group Hunt lists. Some options apply only to lists of a specific type.

List Manager options apply when you create new lists. For a specific list, you can override most of these options. Click Advanced Properties on the property sheet (General) tab.

Default options

Default options allow you to manage list allocation efficiently:

- List size—Default number of entries created for a new list.
- Network Class of Service (System Speed Call)—Default Network Class of Service associated with entries in a new list.
- DN size—Default maximum length of Directory Numbers associated with entries in a new list.
- Originator Control over list (Group Call)—Determines if the originator of the Group Call can terminate the call.
- Max. length of queue (Group Hunt)—Default maximum number of calls that can be queued against the Pilot DN for new lists.
- Call Forward All Calls (Group Hunt)—Check to allow Group Hunt to terminate at a station that has Call Forward All Calls allowed.

Memory optimization

The following options help you manage system memory on the Meridian 1 and Succession CSE 1000 systems. These options allow you to restrict the amount of system memory required to support the lists:

— Maximum List Size—Maximum number of entries allowed in a new list.
— Memory Water Mark—Memory threshold. When the system memory used by lists is at or above the Memory Water Mark, the Auto Increase List Size check box is set to Off.
— Auto Increase List Size—When checked, lists are allowed to grow as new entries are added (until the Memory Water Mark is reached).
— Read Only Auto List Number—When checked, List Manager allows you to edit the automatically generated list numbers as you create new lists.

Available list numbers

Options for Speed Call and Group Hunt lists include controls where you can set the available list ranges. These options let you restrict the total number of lists allowed for the system. Enter the starting list number and ending list number in the range.

Work with reports

List Manager lets you view, manage, and generate reports using list data from systems configured in OTM. You can view each report on screen, print the report, or save the report to a file. Report layout and formatting is done through Microsoft Excel.

You can generate a report immediately. You can schedule report generation with specific dates, times, and intervals. Generated reports use the data extracted from the OTM data base. These reports are automatically saved with a system default name to the default location unless you specify otherwise.

Each report format has the following attributes, as noted by the column headers:

- Report Name - Names of available reports
- Type - Notes if the report is either predefined or customized
- Number of systems - Number of systems for which the report will be generated
- Number of Data Fields - Number of data fields in the report
- Last Generated - Date and time when the report was last generated

Each report shows a specific set of list data. List Manager provides a set of reports whose properties are predefined.

Reports and text files

All log report activity is performed, by default, in the current working directory for the System (the system subdirectory in your PC system). Other reports are sent to the PC directory of your choice. Here is a list of text files with the appropriate extension found in the working directory:

- Reports (*filename*.TXT)
- Communications logs (*filename*.LOG)

You need only supply the *filename* when prompted to save these files—OTM automatically supplies the appropriate extension.

Generate reports

You can generate a report and display it immediately, send it to a printer, or save it to a file. You can schedule report generation to take place at predefined intervals.

To generate a report:

1. Choose File > Reports.

   The Reports window appears.
2. Select a report in the window display.
3. Click one of the following buttons:
   - **Print**—Print the report to the selected printer.
   - **Print Preview**—View the report on the OTM PC.
   - **Print Setup**—Select a printer to print reports.
   - **Schedule**—Display the Schedule window. Use this window to specify when and how often to generate the report.

To save a report to a file:

1. Choose File > Reports.

   The Reports window appears.

2 Select a report in the window display.

3 Check Print to File.

4 Click Print.

The Export dialog box appears.

5 Select a file format and destination type.

6 When the Choose Export File dialog box appears, enter a file name (or use the default name), and select a directory in which to place the file.

7 Click Save.

List Manager saves the report to the file name and location specified.

Predefined reports

List Manager includes several predefined reports. These are listed below along with a short description of each report type. You cannot customize List Manager reports.

List Manager provides the following report forms:

Group Call

- Group Call lists—Group Call lists, sorted by list number
- Group Call lists by name—Group Call lists, sorted by list name
- Group Call lists with entries—Group Call lists including information about their entries
- Group Call lists with associated DNs—Group Call lists including information about their associated DNs

Group Hunt

- Group Hunt lists—Group Hunt lists, sorted by list number
- Group Hunt lists by name—Group Hunt lists, sorted by list name
- Group Hunt lists with entries—Group Hunt lists including information about their entries

Options

- List Manager Options—List options for each list type

Speed Call

- Speed Call list by name—Speed Call lists, sorted by list name
- Speed Call lists—Speed Call lists, sorted by list number
- Speed Call lists by list type—Speed Call lists, sorted by list type (Speed Call or System Speed Call)
- Speed Call lists by SYNC status—Speed Call lists, sorted by synchronization status
- Speed Call lists with associated DNs—Speed Call lists including information about their associated DNs
- Speed Call lists with entries—Speed Call lists including information about their entries

Voice Mailbox

Overview

Voice Mailbox (VMB) data is similar to CPND in that it exists as a separate entity within OTM. However, it is associated with a Directory Number (which serves as a mailbox ID), and modifications to the VMB data can be made from any station that has an appearance of the mailbox DN. The station provides a means of access to data that is not a part of the station itself.

Note: Voice Mailbox is not applicable to Succession CSE 1000 systems. Meridian Mail is not supported on Succession CSE 1000.

Voice mailbox differs from CPND in that it does not have a dedicated overlay. CPND information can be modified using overlay 95 as well as overlays 10 and 11 (OTM uses overlay 95). Voice mailbox information is only accessible from overlays 10 and 11.

VMB data considerations

VMB data is accessible from the Station Administration module (DN list dialog box). VMB data is retrieved and transmitted with station data. There is no separate VMB communications task as there is for CPND.

When you delete a station that has one or more single-appearance DNs with associated mailboxes, you are prompted to delete the mailbox(es) on the Meridian Mail system. This information is used to respond to a VMB prompt when the station is OUT'ed on the system.

VMB data can be modified at the Meridian 1 system through the Meridian Mail interface. OTM synchronization is a two-step process, as follows:

1. The Meridian 1 data base must be synchronized by uploading the information from Meridian Mail using LD 48.
2. A station retrieval synchronizes the OTM data base with the Meridian 1. See "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 557.

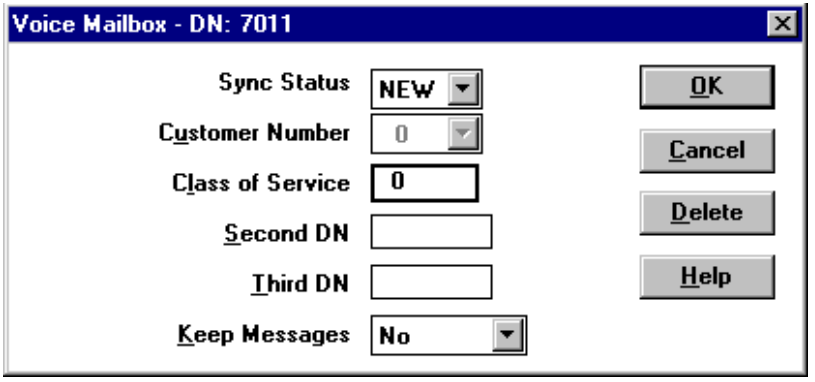
Administering VMB

VMB data administration in OTM is provided within Station Administration from the DN assignment function.

Adding/changing stations

When adding or changing stations, you can access VMB data by choosing the VMB button from the DN assignment dialog box, similar to CPND. There is no VMB button in this dialog box for systems without feature package 246. There is also no VMB button for multi-line stations when the key is not SCR, SCN, MCR, or MCN. Click the VMB button in the Directory Numbers dialog box (Figure 232 on page 464) to open the Voice Mailbox dialog box (Figure 259).

Figure 259 Voice Mailbox dialog box



The title bar of this dialog box shows the DN associated with the mailbox. If it is an existing mailbox, the data fields contain information from that mailbox record, including the following:

Sync Status: This is the sync status of the VMB record, which might be different from the sync status of the station.

Class of Service: Numeric entry field (0–127). This field is required when the mailbox is in NEW status, and there is no default value.

Second DN: DN entry field. Double-click the box to display the DN list dialog box.

Third DN: DN entry field. Double-click the box to display the DN list dialog box.

Keep Messages: Drop-down list box containing YES and NO (NO is default). This field is only available when the VMB sync status is NEW.

The VMB sync status indicates which operation is required at the VMB prompt in overlay 10 or 11.

- **NEW**: VMB does not exist on Meridian 1 and will be added at upload time.
- **CHG**: VMB exists on Meridian 1 and will be changed.
- **OUT**: VMB exists on Meridian 1 and will be removed.
- **TRN**: VMB exists on Meridian 1 and no update is required.

Use the Remove button to change the VMB sync status to OUT. This operation is confirmed with a message box. When a VMB is in OUT status, no further updates are allowed (except for UNDO).

If a VMB is modified or added from an existing station, that station's sync status becomes CHG to allow the VMB update to occur as part of a station update.

Deleting stations

When you remove a station that has a single-appearance DN with an associated mailbox, you are prompted to determine if the mailbox should be deleted on Meridian Mail as well. To respond to this prompt, OTM also prompts you for this information when you delete stations. However, to avoid possible synchronization problems, a different method is used.

When you delete stations in OTM, the delete confirmation dialog box appears. On systems with VMB, this dialog box contains a Delete VMB check box that defaults to checked (YES).

Your YES or NO response is used to continue or cancel the deletion. The delete VMB information is stored as part of the delete transaction, so that it applies to all affected stations. OTM uses this information to respond to any DELETE_VMB prompts presented during transmission of the deleted stations.

The implications of this approach are as follows:

- You are prompted for this information even if none of the stations being deleted has a single appearance DN. In this case, the information is never used.
- If you want to delete two stations but give different responses to DELETE_VMB for those stations, two separate Edit - Delete operations are required.

This guarantees that the correct information is stored in the station that actually gets the DELETE_VMB prompt. In cases where all occurrences of a multiple-appearance DN are deleted within the OTM data base, only the last station transmitted receives the DELETE_VMB prompt. Since it is not possible to know which station will be transmitted last in all situations, the DELETE_VMB information must be stored with all the stations.

This procedure prevents accidental deletion of mailboxes when the OTM and Meridian 1 data bases are not completely synchronized. Since OTM prompts you on any deletion (even if no single appearance DNs are involved), the DELETE_VMB information is available if the Meridian 1 prompts for it unexpectedly. For example, the OTM database has two appearances of a DN, but the Meridian 1 database has only one (due to a change done in LD 10 or LD 11).

Changing DNs

When you change a DN on a station, its associated mailbox must be removed from the VMB file if the DN prior to the change was single appearance. You should delete the VMB record when you commit to the station update by clicking OK on the Station dialog box. To warn you when a mailbox record is to be deleted, a confirmation dialog box appears.

The confirmation dialog box appears when a station change results in one or more mailboxes being deleted. If you choose to cancel at this point, the entire station update is canceled. If you choose to continue with the operation, the mailbox can be restored later by performing an undo of the station update.

Since a single mailbox can be updated from multiple stations and those stations can be transmitted to the Meridian 1 system in any order, there are some synchronization issues that cannot be resolved by OTM. Some of these issues are described in the examples below.

All of the following examples involve two transactions, which, by default, are transmitted on a first-come-first-served basis. The ambiguities described below only occur if you schedule the second transaction to be transmitted before the first.

VMB data synchronization

Consider the following examples when scheduling synchronizing station data associated with Voice Mailbox data:

Example 1—Deleting stations

Station A and Station B have the only two appearances of DN 2000, which has an associated voice mailbox.

1 Delete station A and respond YES to the Delete VMB dialog box.

2 Delete station B and respond NO to the Delete VMB dialog box.

If station A is scheduled before station B, the mailbox is not deleted on Meridian Mail. If station B is scheduled before station A, the mailbox is deleted.

Example 2—Adding a mailbox

Station A has single appearance of DN 2000, which has an associated voice mailbox in TRN status.

1 Change DN on station A to 2001 (this deletes the VMB record for 2000).

2 Add station B with DN 2000 and create a new voice mailbox for it.

If station B is scheduled before station A, the transmit fails when it attempts to create a new mailbox for DN 2000. It exists on the system until station A is transmitted.

Example 3—Changing a DN

Station A and station B both have an appearance of DN 2000, which has an associated voice mailbox. Station B is in TRN status.

1 Update the mailbox through station A.

2 Before transmitting station A, change DN 2000 to 2001 on station A.

When station A is transmitted, the updates to the voice mailbox are not made, because station A no longer has an appearance of DN 2000.

Global Update

Overview

The Global Update function is available in both the Station Administration and the CPND Administration modules. It lets you change common data values in each of selected items in the main application window (Station list or CPND list) either directly or through a confirmation option.

The Global Update procedure involves the following steps:

1. Select those list items that you want to update. You can use the Select feature to select stations based on specific criteria.
2. Select a field for update.
3. Define the update or updates to perform on a selected field in the selected items.
4. Execute the change.

You can perform the update on all selected items directly, or you can do it through a confirmation option on an item-by-item basis.

If you are running in Installation mode, you are prompted to set up communication with the Meridian 1 or Succession CSE 1000 system whenever you modify a data record. You can synchronize the data now, schedule a time for synchronization, or cancel the prompt and schedule synchronization later. See "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 557.

Selecting data items

In a data list window of Station Administration or CPND Administration, select the items you want to update. You can change the current selection as follows:

1. Click to select a single item.
2. Use the space bar to turn off all selections and select only the first station in the list. This method of selection turns off all other selections, leaving only the single current selection.

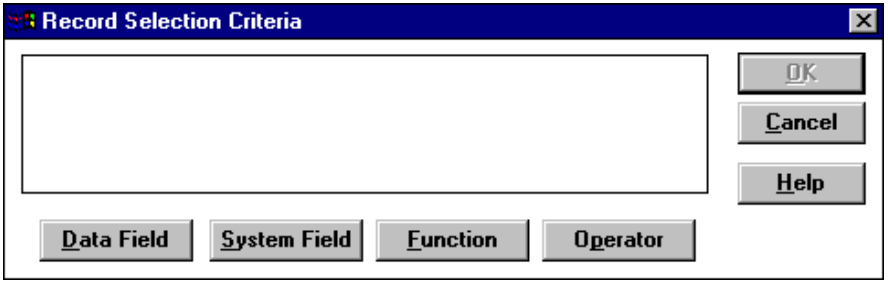
3 To select multiple stations, hold down the <Shift> key and click a station, or press the space bar, to toggle the selection status of that station without affecting other selections.

Choose Edit - Select All to select all items, or you can define criteria to select a group of stations using Edit - Select.

Define selection criteria

To define criteria for record selection, choose Edit - Select in the Station view of the Station Administration window or in the CPND Administration window. This displays a Record Selection Criteria dialog box in which you enter the expression defining the selection criteria.

Figure 260 Record Selection Criteria dialog box



An expression is a formula that follows standard mathematical conventions regarding the use of brackets ({}) and the order of operations (add, subtract, multiply, or divide). Operations can act on numeric data or on field values from the OTM database. Field names must be exactly as defined in the OTM database. You can enter the desired expression by typing it in the text box directly, or by using the selection criteria and operation buttons provided.

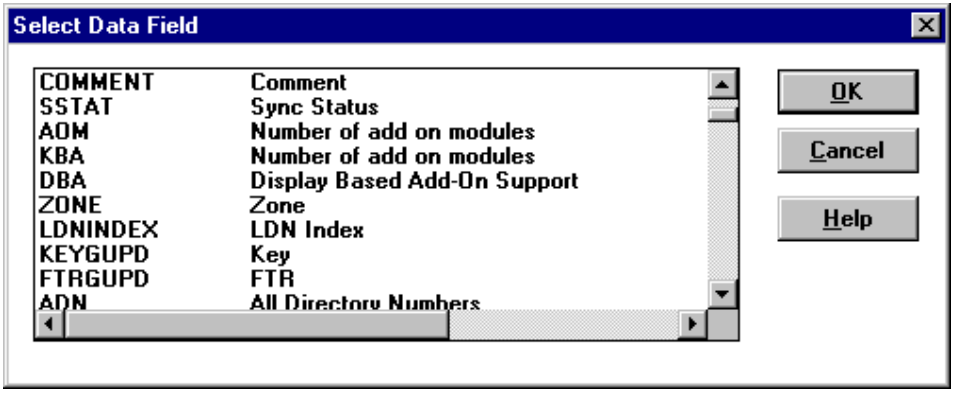
The dialog box has buttons that allow you to select fields, operators, and functions to build a valid expression. You may have to modify the position of brackets when completing the expression.

When you have finished creating a valid expression, click OK to display the Station Administration window. Those items that fit the criteria are highlighted. You can still modify this selection as described in “Selecting data items” on page 544.

Select Data Field

When you choose Data Field, a list of available fields appears in the Select Data Field dialog box (Figure 261).

Figure 261 Select Data Field dialog box



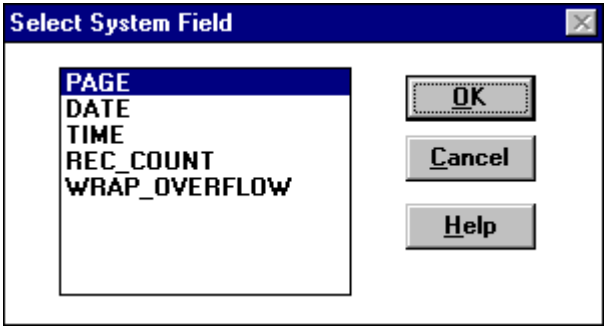
Select the desired station or CPND field name, and then click OK to paste the field into the Select Criteria expression text box at the current cursor position. You can type a letter to scroll the listing to the next item starting with that letter.

Note: Global update is not supported on the following fields: LNAME, FNAME, and DEPT.

Select System Field

When you choose System Field, a list of available fields appears in the Select System Field dialog box (Figure 262).

Figure 262 Select System Field dialog box

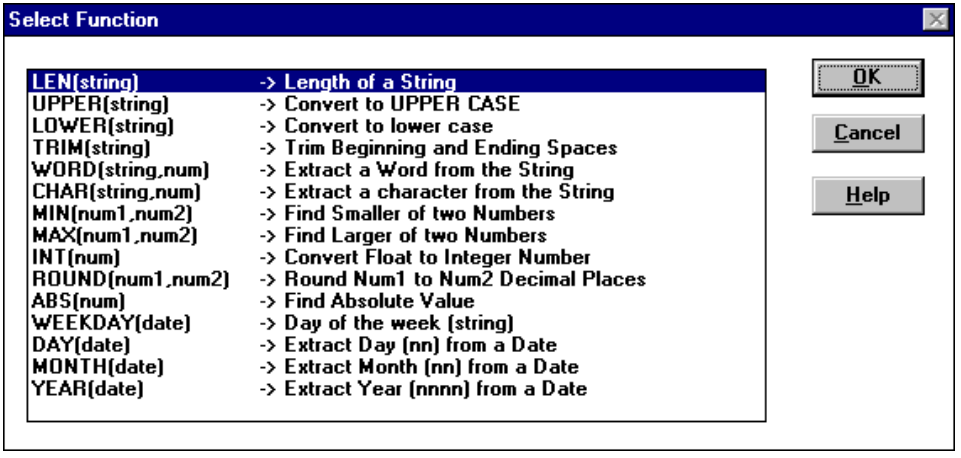


Select the desired field name, and then click OK to paste the selected field name into the Select Criteria expression text box at the current cursor position.

Select Function

A function can generate a value on its own, or it may act on the field directly after it in the expression to produce a value that depends on that field value. When you choose Function, a list of available functions appears in a Select Function dialog box (Figure 263).

Figure 263 Select Function dialog box

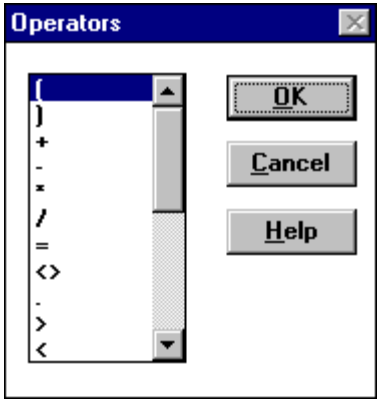


Select the desired field name, and then click OK to paste the selected function name into the Select Criteria expression text box at the current cursor position.

Select Operator

An operator causes a mathematical combination of field values (arithmetic, Boolean, conditional, and so on). When you choose Operator, a list of available operators is displayed in an Operators dialog box (Figure 264).

Figure 264 Operators dialog box



Select the desired operator, and then click OK to paste it into the Select Criteria expression text box at the current cursor position.

Selecting the items for change

When you have completed the selection criteria expression, click OK to return to the Administration list window. All items that meet the defined criteria are highlighted.

Example expressions

Below are examples of selection expressions to help you understand the Select feature.

Example 1

Select all stations that have been changed in the OTM database since the last transmission to the switch.

The SYNC field shows synchronization for the sets in relation to the Meridian 1 or Succession CSE 1000 system's data base. If the sync status of the set is TRN (for transmitted) then all changes have been transmitted to the switch and the data is synchronized with the switch. Any other status (NEW, OUT, CHG, RPL) identifies a set that has been changed on OTM and needs to be transmitted to the switch (see the Sync Status section for details.)

To select all stations that need to be transmitted, you can either select all stations in NEW, OUT, CHG or RPL status or you can simply select all sets that are not in TRN status. The selection is the same in either case. For this example, choose all sets that are not in TRN status:

1. Choose Edit > Select.
2. From the Data Field list, choose SSTAT.
3. Click <> (not equal to) from the Operator list (or simply type in <>).
4. Type **"TRN"**. (Note: All strings must be enclosed in quotes. Column 2 in the Data Field List identifies the field as either a string or numeric).

   The complete command in the Record Selection Criteria edit box is as follows:

   ```
   STATION->SSTAT<>"TRN"
   ```

   Note that instead of following steps 2 to 4, you can simply type the expression above.
5. Click OK.

All stations are selected except those in TRN status.

Example 2

Select all stations with a prime DN between 4000 and 5000.

To select all stations within this range, select all sets with PRIMEDN>4000 and PRIMEDN<5000. OTM will allow you to do this by following these steps:

1. Choose Edit - Select.
2. Select PRIMEDN from the Data Field list.
3. Select > from the Operator list (or simply type >).

4. Type **"4000"**.
5. From the Operator list, select .AND.
6. Select PRIMEDN from the Data Field list.
7. Select < from the Operator list (or simply type <).
8. Type **"5000"**.

   The complete command is as follows:

   STATION->PRIMEDN>"4000".AND.STATION->PRIMEDN<"5000"
9. Click OK.

   All stations that have a prime DN between 4000 and 5000 are selected.

Example 3

Select all M2616 sets with class of service CFXA.

1. Choose Edit > Select.
2. Select INST from the Data Field list.
3. Select = from the Operator list (or simply type it in).
4. Type **"M2616"** (criteria is case sensitive; make sure you use a capital M).
5. Select .AND. from the Operator list.
6. Select CFXA from the Data Field List (the mnemonic CFXA represents Call Forward which can be either allowed "CFXA" or denied "CFD").
7. Type **="CFXA"**.

   The complete command is as follows:

   STATION->INST="M2616".AND.STATION->CFXA="CXFA"
8. Click OK.

   All M2616 type stations with Call Forward External Allowed (CFXA) are selected.

Specify the change

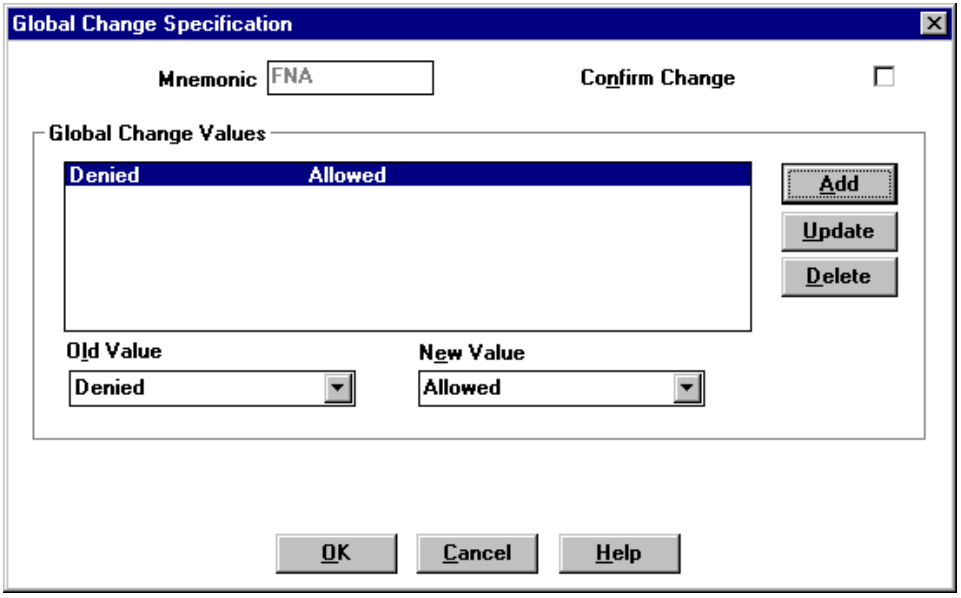
You can perform a global update on a single field in each item selected in the list window. Once you have selected the desired items for update, you select the field to change.

Select the field to change

When you choose Edit - Global Update, the Select Data Field dialog box appears. The fields listed include only those that can be changed globally. For example, the Instrument (INST) field is not included in this list because some of the fields and their values in the record depend on the instrument.

When you have selected the field to change, click OK to display the Global Change Specification dialog box. The selected field name appears in the Mnemonic box. The example in Figure 265 shows the entries required to allow Call Forward No Answer on all selected station on which it is currently denied.

Figure 265 Global Change Specification dialog box



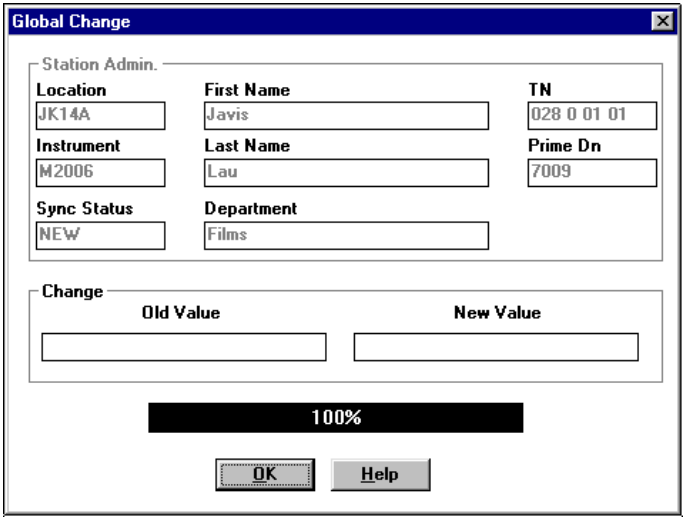
The Global Change Values edit box lets you set up the changes in the field values of the field indicated by the Mnemonic box. The box contains a list of changes that you define by entering values in the Old Value and New Value fields.

Note: The Old and New Value text boxes are case sensitive. The values must be entered in the same case as is used in the OTM data base. For example, XYZ and xyz are not the same values.

Perform the global change

When you click OK in the Global Change Specification dialog box, the Global Change dialog box opens (Figure 266). This dialog box gives the current status only (you cannot edit any of the fields).

Figure 266 Global Change dialog box



The dialog box contains a Station Definition area to identify the station currently being changed. The Change area displays the Old and New Values.

If you are not using change confirmation, a “percentage done” bar informs you of the progress of the changes.

While the change is in progress, the dialog box displays the Cancel and Help buttons. Help displays help for this dialog box, and Cancel halts the change task.

Warning: If you click Cancel, there is no way of controlling which records are changed and which are not.

When the task is complete, the Cancel button is replaced by an OK button.

Change confirmation

If you elected to confirm changes, a Confirmation dialog box asks you whether to "Change this record?" for each station record in turn. The Global Change dialog box contains Station identification and Change identification data for the current field.

You can move this dialog box in the same way as other Windows dialog boxes to see the progress bar and function buttons in the Global Change dialog box.

The Confirmation dialog box displays the following buttons:

- **Change:** Perform the change indicated in the Global Change data box and proceed to the next station.
- **Skip:** Proceed to the next station without changing the current one.
- **Change All:** Proceed with all remaining changes without confirmation.
- **Cancel:** Cancel all remaining changes.

During the change process, the progress bar changes and the Global Change data area is updated.

Change completion

When the Global Change task is complete, the Confirmation box is cleared, the Global Change box indicates 100 percent completion, and the Cancel button is replaced by an OK button.

Click OK in the Global Change dialog box to return to the list window.

Global Update—wildcards, matching, and allowed fields

If you choose Edit > Global Update, you build a list of changes for a single field on the selected records. The list of changes is built by adding requests to change Old Value to New Value for the chosen field. To improve efficiency and to shorten the list of changes, you can use * (asterisk), the wildcard character. The wildcard matches any value in the field.

Wildcard matches that you specify are always done after the other Old Value matches have failed. Otherwise, matches are attempted in order. For each selected record, the first change request that matches the Old Value is implemented.

Key* allows you to update a feature when the key on which the feature resides is unknown. For example, suppose you want to update the Conference key on all sets to No Hold Conference/Autodial. The Conference key may exist on any key of the selected station(s). Key* allows you to update the key feature without knowing the key number. OTM searches for the first occurrence of the feature specified, and updates that key per the instructions. See "Global Update—examples" on page 554 for more detail.

Certain fields on the station may not be changed with the Global update facility:

- Location must be unique for each station, so Global update is not permitted.
- Station type may not be changed with global update.
- Certain administrative features of a station, including color and type cannot be changed.

Global Update—examples

A few examples are provided below to help you use the Select and Global Update features. These examples provide the basic steps for selecting stations based on certain criteria and updating common fields. These methods can be applied to a variety of Global Update situations.

Example 1

Suppose you want to change all DNs in the range 4000–4999 to a 5-digit 54000–54999. You want to apply this change to all stations for Customer 1.

1. Global Update is applied to selected stations only. You should, therefore, select all stations for Customer 1. Choose Edit - Select. Click on Data Field and choose the Customer Number field to build the expression STATION->CNUM = 1. (The STATION->CNUM portion is provided automatically when you select Customer Number from the list of Data Fields).

   If there is only one customer on the Meridian 1 or Succession CSE 1000 system, use Edit > Select All to select all the stations for this DN change.

2. Choose Edit > Global Update to specify the DN change.

   - Specify the field to be changed in the Select Data Field dialog box. OTM provides a special field called All Directory Numbers. You can move the highlight in the Select Data Field dialog box until the All Directory Numbers field is highlighted. Click OK to select the All Directory Number field.
   - In the Global Change section, you are asked to build a list of each old value and the new value with which to replace it. The Mnemonic field shows that we are working with the field All Directory Numbers (ADN).
   - Enter the DN range 4000–4999 in the Old Value box. Move to the New Value box and enter 54000–54999. To enable this change, click Add. The requested change appears in the Global Change Values box. (You can Update or Delete each entry in the Global Values box by clicking the appropriate button.)
   - When you are satisfied with this change request, click OK.
   - OTM examines each station to see if any changes need to be made. A meter marks OTM's progress through the stations. Click Cancel to halt the updating process.
   - For any applicable station, the Global Change dialog box displays identifying information for the station and the old and new values that are to be modified.

Example 2

Suppose you want to change all Conference keys (A03) on all stations to No Hold Conference/Autodial keys (CA). Conference may currently be configured on any key on the selected stations.

1. Select the stations to be updated. Since all stations need to be changed, choose Edit > Select All.
2. Choose Edit > Global Update to specify the desired change. Choose KEYGUPD (Key Global Update) from the Select Data Field window. (You can move immediately to the KEYGUPD mnemonic by typing in the first letter of the mnemonic, K.) The Global Update window opens. A list box allows you to specify which key to change. Since you are not sure which key on each station is equipped with Conference, use Key*, the default for this list, to update the feature regardless of the key number.
3. Enter the existing value of the key to be changed in the Old Value box, A03 and press <Tab>. (If the key you want to change has parameters, tabbing brings up the parameter fields.) Conference does not have parameters, so tab moves you to the New Value box. Enter the mnemonic of the new feature (in this case, CA for No Hold Conference Autodial). Press <Tab> to display edit boxes for the parameters associated with the new feature. Enter the appropriate data in the parameter fields.
4. You can choose to confirm each change. Once you click OK, OTM begins the updates. OTM searches each selected station for the first occurrence of A03. If A03 is encountered, OTM changes the key to the new value: CA.

Note: If the station contains multiple Conference keys, only the first one will be changed. You can run a second global update to change the second appearance of a feature.

Example 3

Suppose you want to add a feature to the first blank key on each set, but the first blank key may be a different key number on each set.

The choice of Key* for your Global Update criteria tells OTM to look for the first occurrence of a particular feature on each set selected. When OTM encounters that specified feature, it changes that first occurrence to the specified new feature and then proceeds to the next set. In this example, the feature you are looking for is a blank feature. Perform the following steps:

1. Select all the stations you want to change.
2. Select Edit > Global Update.
3. Choose KEYGUPD (Key Global Update) from the criteria list.
4. Choose the key number Key* (this is the default).
5. Enter nothing (blank) in the Old Value, enter the new feature mnemonic and appropriate parameters in the new value. Select Add to add to the Global Update list.
6. Click OK. All stations selected have the new feature added to the first blank key. If a selected set does not have any blank keys, the feature is not added to that particular set.

Communicating with the Meridian 1 or Succession CSE 1000 system

Overview

Meridian 1 and Succession CSE 1000 systems can be programmed with relevant station data, list data, and CPND data from the OTM application. The OTM application can also retrieve data from a Meridian 1 or Succession CSE 1000 system. For example, you can create an OTM data base for a system and then upload relevant data to program a Meridian 1 or Succession CSE 1000 system. You can make modifications within OTM and upload these to the system. At any time, you can download system data to OTM for record-keeping or verification purposes. If you have a Meridian 1 or Succession CSE 1000 system and want to start using OTM to administer the data, you download the data from the system and update the data in OTM to include all OTM administrative and record-keeping data.

Your PC uses a modem to communicate, through normal telephone wires, with a modem connected to the Meridian 1 or Succession CSE 1000 system. OTM can also use an Ethernet connection on the Succession CSE 1000 system and, if it is available, on the Meridian 1 system. The communications protocols must be predefined for each system. From the OTM Navigator window, select the desired system. Choose File - Properties to display the System Properties window. Select the Communications tab to define the appropriate communications protocols for this system.

Station Administration, CPND, and List Manager use the Synchronize menu to schedule communications with the system.

Communications considerations

Retrieving data is a two-stage process. The Meridian 1 or Succession CSE 1000 system's data is first downloaded and stored in the current working directory (the OTM system subdirectory). Parsing converts the data into the OTM data format. This new data overwrites (synchronizes) the OTM data base for the system with the data from the Meridian 1 or Succession CSE 1000 system. The Meridian 1 or Succession CSE 1000 system's data can be parsed at any time after retrieval.

OTM requests a customer number for all data retrievals in order to enforce the Meridian 1 and Succession CSE 1000 system's Limited Access to Overlays (LAPW) restrictions. If the login password associated with the entered customer number is restricted from the print routines needed for synchronization, the data will not be retrieved.

Station synchronization vs. list synchronization

List Manager synchronization is a separate task from Station synchronization.

Note: Synchronize list data before synchronizing station data.

Some List Manager settings make changes in OTM's Station Administration module (for example, feature key assignment). You must ensure the list data is present on the system so that station validation does not fail.

Station retrieval—TTY Port configuration

During the synchronization retrieval operation, OTM requests a print of the information on the Meridian 1 or Succession CSE 1000 system through the SDI port. The port used for OTM data retrieval should be configured only as a Service Change port. The OTM System Terminal application can be used to access LD 17 to temporarily configure the TTY port as SCH only (not required for Ethernet connections). If the port is configured for other data such as Traffic or Maintenance messages, OTM attempts to distinguish this data from relevant station data. The retrieval log gives errors when data is not recognized as station data.

Data retrieval—Log window

During data retrieval, the amount of activity in other Windows tasks should be limited.

During long data retrievals, or if there is enough activity in other Windows processes, the capacity of the communications buffer can be exceeded. This condition terminates the retrieval process to prevent erroneous data from being entered into the OTM data base.

To prevent this occurrence, the Log Window automatically minimizes itself. The icon is labeled “Log Window:” and contains the current site and system names. You should wait momentarily and restore the Log Window to check the progress of the retrieval.

The Log Window remains on the screen longer if you resize it to contain fewer lines. The amount of window resizing and moving during data retrieval should be limited, since these activities prevent the retrieval activity from processing incoming characters.

If the capacity of the communications buffer is exceeded during the retrieval, necessary data is being lost. The OTM software displays a message and terminates if the buffer is exceeded. In this case, stations are not added to the OTM PC database. The message is printed to the log file, warning that the data has been lost.

Repeat the retrieval to add the new data. It is possible to retrieve a portion of the stations on the Meridian 1 or Succession CSE 1000 system by choosing Synchronize > Retrieve > Specify.

The Communications task

Synchronization is a task that ensures that the OTM data base reflects the data on the Meridian 1 or Succession CSE 1000 system. The task can be achieved in two ways:

- Retrieve the Meridian 1 or Succession CSE 1000 system's data to the OTM data base (download).
- Transmit OTM data to the Meridian 1 or Succession CSE 1000 system (upload).

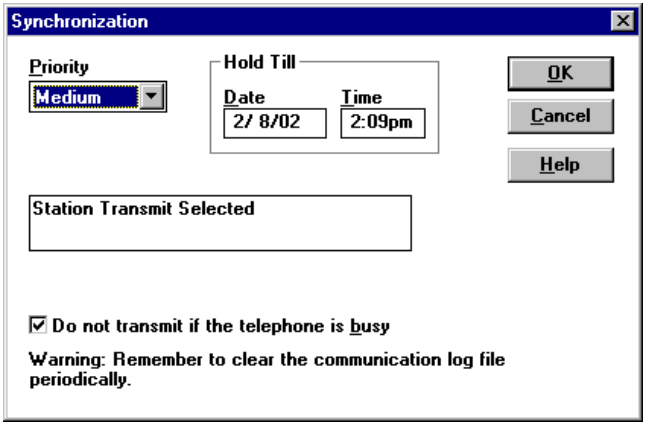
Note: Nortel Networks recommends that you turn off all TTY messages (including bug messages) during download or upload.

Whenever you require access to a Meridian 1 or Succession CSE 1000 that is defined as a system for OTM, use the Synchronize menu of the OTM module you are currently using (Station Administration, CPND, or List Manager). You can use this menu to schedule upload or download of selected data, or you can define criteria to download or upload specific data. Whenever you modify the OTM data base, you are prompted to set up a transmit task to upload the new or modified data to the Meridian 1 or Succession CSE 1000 system.

Synchronization

Whenever a communication task has been defined, you are prompted in a Synchronization dialog box to set up a schedule for the task (Figure 267).

Figure 267 Synchronization dialog box



The following data can be entered to schedule a task:

Priority

The Priority drop-down list box contains the numbers 1 through 10, representing the priority level for the task. The number 1 represents High, 6 represents Medium, and 10 represents Low. The default is Medium. Change the priority by selecting an item, or enter the number in the text box.

The Priority number determines where, in the current communications task queue, this task is placed.

Hold Till

Hold Till is made of two text box fields that determine when this task is sent to the communications queue.

Date

The date for the task in the format *MM*/*DD*/*YY*, where *MM* is the two-digit month in the range 01–12, *DD* is the two-digit day in the range 01–31, and *YY* is the two-digit year. The default entry is the current date (leading zeroes are dropped when the input is validated).

Time

The time for the task in the format *HH*:*MMXX*, where *HH* is the two-digit hour in the range 01–12, *MM* is the two-digit minutes in the range 00–59, and *XX* is AM or PM representing before or after 12:00 noon. The default entry is the current time.

Description

Station Update - Station Transmit

CPND Name Update - CPND Name transmit

CPND Update - Configuration transmit

Do not transmit if the telephone is busy

Transmission of changes while a telephone is busy disconnects the active call. If you check this check box, it causes the sync task to check the status of the telephone before transmitting changes. If the telephone is busy, the change is not transmitted and the event is logged in the appropriate transmit log. It is up to the user to check the logs and reschedule the change.

Change as replace

This field is only available if OTM is in Maintenance mode. See “Synchronization considerations” on page 442.

If you accept the default entries, the task is scheduled immediately.

Click OK to send the task to the Scheduler module of the OTM application. If the task is not immediate, the Scheduler runs iconized on the desktop. The Scheduler must be running at the scheduled time for the task to be sent to the communications task queue.

You are not required to schedule a task at any particular time. You can click Cancel in this dialog box and use the Synchronize menu at any time to schedule a task.

Download

This task updates the OTM data base with selected data from the Meridian 1 or Succession CSE 1000 system. You can select data items in the current list window (Station or CPND) or you can define criteria for system data to be retrieved.

When you choose Synchronize - Retrieve, a submenu allows you to select criteria for downloading selected station data. The submenu contains the following items:

All: All data for stations or CPND in the system.

Selected: Only items selected in the current list of CPND or stations.

Since: Only stations on the system that have changed since a specified date (not applicable to CPND).

Specify: Define criteria for stations or CPND data on the system for download.

Reserved Unit TNs: Terminal Number units that have been reserved for non-station instrument types that do not apply to a particular customer (for example, PWR, OOSSLT, OOSMLT).

Parse Only: Lets you access raw data retrieved from the Meridian 1 or Succession CSE 1000 system and parse it into the correct format. Note that the parsed data will overwrite the current Station Administration data.

Log: View or clear a log of communications activity.

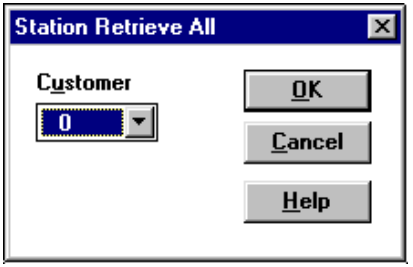
Retrieving all data

You can set up communications with the system to retrieve all data (station or CPND) that pertains to a single customer in the Meridian 1 or Succession CSE 1000 system.

Station Retrieve All

Choose Synchronize > Retrieve > All in the Station Administration module to display the Station Retrieve All dialog box (Figure 268).

Figure 268 Station Retrieve All dialog box



The dialog box contains the following data entry field:

Customer

A drop-down text box with a list of the customer numbers defined for the open system. The text box contains the currently selected item.

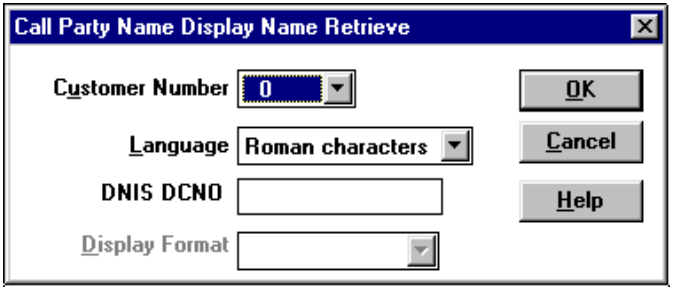
When you click OK, you are prompted to set up the communications task.

Note: During station retrieval, the hardware list is updated with cards that support the type of stations being configured in OTM. These might not be the exact type of hardware cards actually installed in the Meridian 1 or Succession CSE 1000 system. However, they will be cards with equivalent function as the installed cards.

CPND Name Retrieve All

Choose Synchronize > Retrieve > All in the CPND Name view to display the CPND Retrieve dialog box (Figure 269).

Figure 269 CPND Name Retrieve dialog box



The CPND Retrieve dialog box contains the following data entry fields:

Customer Number: A single-line drop-down text box with a list of the customer numbers defined for the open system. The text box contains the currently selected item.

Language: A single-line drop-down text box with a list of languages defined for the open system. The text box contains the currently selected item.

DNIS DCNO: A text box in which you can enter the DNIS IDC table number and DNIS IDC for this group of CPND entries.

Display Format: A single-line drop-down text box with a list of the CPND name display formats defined for the open system. The text box contains the currently selected item.

When you click OK, you are prompted to set up the communications task.

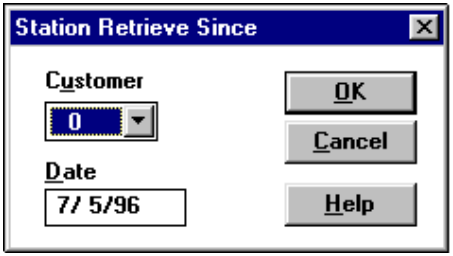
Selecting data to retrieve

You can select items in the Station list or CPND list window that you want to download from the Meridian 1 or Succession CSE 1000 system. See "Global Update" on page 544. Meridian 1 or Succession CSE 1000 system data overwrites the data currently stored in the OTM data base for the selected items. When you choose Synchronize - Retrieve - Selected, you are prompted to set up the communications task.

Retrieve Since option

In the Station Administration module, choose Synchronize > Retrieve > Since to display the Retrieve Since dialog box (Figure 270).

Figure 270 Station Retrieve Since dialog box



In addition to the Customer field from the Station Retrieve All dialog box, this dialog box contains a new field:

Date: This text box contains the date in the format *MM*/*DD*/*YY*, where *MM* is the two-digit month in the range 01–12, *DD* is the two-digit day in the range 01–31, and *YY* is the two-digit year.

When you click OK, you are prompted to set up the communications task. The task retrieves all data that has changed since the specified date.

Note: During the Synchronization Retrieval operation, OTM requests a print of the information on the system through the SDI port. OTM attempts to distinguish relevant data from other messages that may also be passed through the same port. Examples include traffic and maintenance messages. You may find that it helps the accuracy of the OTM retrieval process to temporarily disable other uses of this port.

Specifying data to retrieve

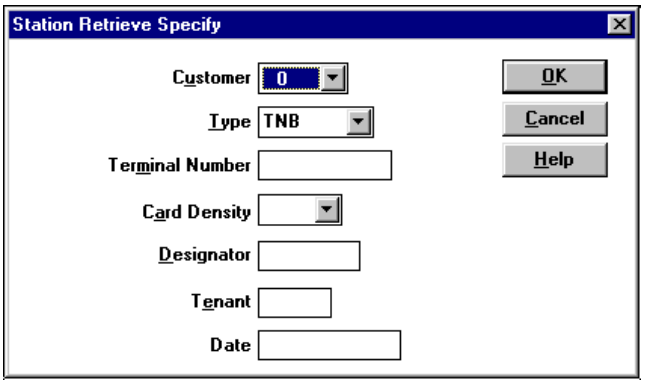
Advanced users can specify stations or CPND (Name or Administration) or Reserved Unit Type (RUT) data with a one-to-one correspondence of data in certain fields for retrieval.

Note: When you retrieve Station Data, CPND names are also retrieved, and the Station View is updated accordingly.

Station Retrieve Specify

Choose Synchronize > Retrieve > Specify option in the Station module to display the Station Retrieve Specify dialog box (Figure 271). Enter the data pertinent to those stations on the system that you want to download. By default, all fields in the dialog box are blank. All stations are downloaded if no data is specified.

Figure 271 Station Retrieve Specify dialog box



Criteria you can set for station selection include:

Customer

A drop-down text box with a list of the customer numbers defined for the current system. The text box contains the currently selected item.

Type

A drop-down text box with a list of the instrument types (telephones) available for the current system. The text box contains the currently selected item.

Note: Station Retrieval—Using Type = 2000

You can use this Meridian 1 feature to retrieve all 2000 type sets from the Meridian 1 system. In the Retrieve Specify dialog box, move to the Type box. You can type 2000, although it does not appear in the list box. OTM correctly responds to the Type prompt during retrieval.

Terminal Number

Enter a TN or partial TN to retrieve only those stations attached to the part of the Terminal Number entered.

Card Density

This text box allows you to enter the card type. The card type value is associated with the terminal number.

Designator

Enter a designator value in this field to retrieve all stations with this Designator.

Tenant

Enter a Tenant value in this field to retrieve all of that Tenant's stations.

Date

This field accepts a date in the format *MM*/*DD*/*YY*, where *MM* is the month in the range 01–12, *DD* is the day in the range 01–31, and *YY* is the two-digit year. This retrieves all stations modified after the specified date.

Note: If you request a retrieval from a large Meridian 1 or Succession CSE 1000 system, using Specify and the Type, the system can take a long time to select the appropriate stations. If the time-out period (set in system properties) is not long enough, OTM determines that no more information is being sent by the system and halts the retrieval.

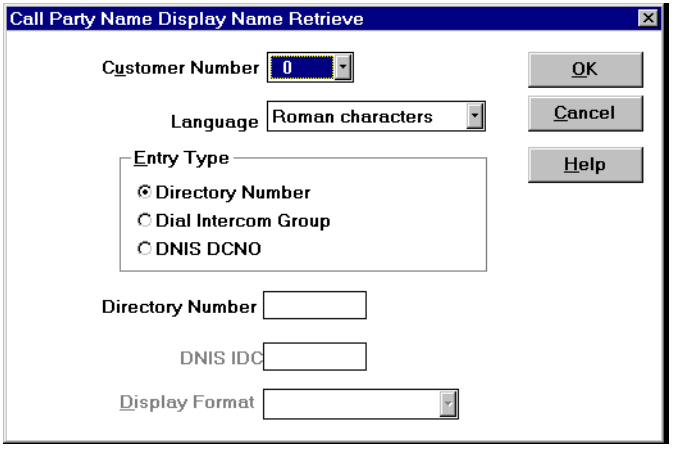
The number of stations retrieved is stated in the Retrieval Log. The time-out parameter can be lengthened to give the Meridian 1 or Succession CSE 1000 system sufficient time to find the appropriate stations to transmit. However, a long time-out period also lengthens the time required by OTM to correctly identify that the system has no more information to send. You need to be patient if you extend the time out period beyond the default values.

Note: OTM is able to retrieve selected stations. You can also retrieve all stations, or choose Synchronize - Retrieve - Specify, using a partial TN.

CPND Name Retrieve Specify

If you want to define the CPND name data for downloading, choose Retrieve - Specify in the CPND Name view window to display the CPND Name Retrieve dialog box (Figure 272).

Figure 272 CPND Name Retrieve dialog box



Note: CPND Name Retrieval—Synchronization prompt

When retrieving CPND names from the Meridian 1 or Succession CSE 1000 system (using LD 95), OTM prompts you for additional information necessary for retrieval. The additional information differs depending on the release of the software on the Meridian 1 or Succession CSE 1000 system.

Display Format: Prior to Release 19 of the Meridian 1 X11 software, the Display Format was required for name retrieval. Beginning with Release 19, Display Format can be part of each CPND entry. Therefore, for Meridian 1 systems prior to Release 19, you are prompted for Display Format during name

retrieval. For Meridian 1 systems beginning with X11 Release 19 and for Succession CSE 1000 systems, you are prompted for Display Format only if OTM does not find a valid Display Format. If OTM does not prompt for the Display Format, the applicable format is displayed, but not enabled for modification.

The criteria you can set for CPND name selection include the following:

Customer Number

A single-line drop-down text box with a list of the customer numbers defined for the open system. The text box contains the currently selected item.

Language

A single-line drop-down text box with a list of languages you can use for the display. The text box contains the currently selected item.

Entry Type

A selection field containing three radio buttons for the type of entry for this station. The choices include:

Directory Number: Required to enter Directory Number

Dial Intercom Group: Required to enter Group and Member, separated by a space

DNIS DCNO: Required to enter DNIS IDC table number and DNIS IDC

Directory Number

A numeric field that accepts up to 9 digits that represents the DN for this station. You can double-click this field to display the list of currently assigned numbers in the numbering plan for the open system. You can select the number for this station in the Directory Numbers dialog box. This is described in “Directory Number assignment” on page 464.

Display Format

A single-line drop-down text box with a list of the CPND name display formats defined for the open system. The text box contains the currently selected item.

When you click OK, you are prompted to set up the communications task.

Note: When you retrieve Station Data, CPND names are also retrieved, and the Station View is updated accordingly.

Synchronization status and retrieval

If OTM performs a retrieval, including station and CPND name, the Synchronization Status determines whether the OTM data is updated. In all cases, the Retrieval log contains a record of the retrieval and the results of any comparisons with an existing Meridian 1 or Succession CSE 1000 system.

- **NEW**: The data for this station should not exist on the Meridian 1 or Succession CSE 1000 system, and the station will not be updated.
- **TRN**: The data for this station in OTM should agree with the data in the Meridian 1 or Succession CSE 1000 system. The OTM data is updated to reflect the current configuration on the Meridian 1 or Succession CSE 1000 system.
- **CHG, RPL:** The data for this station has been changed since the last time OTM and the Meridian 1 or Succession CSE 1000 system have been synchronized. The station is not updated.
- **OUT:** The OTM user has marked this station for deletion, the current configuration of the station on the Meridian 1 or Succession CSE 1000 system is not relevant and, therefore, OTM is not updated.
- **CUR:** The data for this station in OTM should agree with the data in the Meridian 1 or Succession CSE 1000 system.
- **SWP:** The data for this station has been changed since the last time OTM and the Meridian 1 or Succession CSE 1000 system have been synchronized. The station is not updated.

Current Record

When you select a CPND record for editing (a record with a sync status of TRN, CHG or RPL), Station Administration copies the record and saves the copy in the database with a Sync Status of CUR. The TRN status then changes to CHG. The CUR record contains the original station configuration and can be used as a backup.

If you change a record's status from CHG or RPL to TRN, NEW or OUT, the associated CUR record is deleted.

If you double-click the CPND name but do not make any changes, the CUR record is deleted.

The CUR record can be viewed but not modified or updated. To restore the original station configuration, select one or a multiple of CUR records, and choose Restore from the Edit menu. When the CUR record is restored, the CHG record is deleted (if one exists) and the record status changes to TRN.

The CUR record is primarily used for web-based Station Administration, where the interface must show the current configuration of the switch, as opposed to a configuration with information pending.

CUR Record and Global Update

A record with a CUR status will not change to another state (CHG, RPL, OUT, NEW, TRN) and a record with another status will not change to CUR following a Global Update of the database.

Generating Reports

When you select a form file to run a report, you are presented with check boxes for each of the Sync statuses. Check the box to include records with the corresponding status in the subsequent report.

List Manager and Corporate Directory

List Manager and Corporate Directory allow you to associate a set of stations to a list, and generate customized directory reports. Neither application includes CUR records in reports or lists.

Forms Interface

When using the Forms interface to view a CUR record, the OK button in the Update dialog box is disabled, as CUR records cannot be modified.

Upload

This task updates the Meridian 1 or Succession CSE 1000 system data block with selected data from the OTM database. You can select data items in the current list window (Station or CPND).

When you choose Synchronize - Transmit in the Station or CPND module, a submenu allows you to select criteria for uploading data to the Meridian 1 or Succession CSE 1000 system. The submenu contains the following items:

Selected: Upload only selected items in the current list of CPND or stations.

Log: View or clear a log of communications activity.

Selecting data to transmit

You can select items in the Station list or CPND list window to upload to the Meridian 1 or Succession CSE 1000 system (refer to “Global Update” on page 544). The OTM data overwrites the data currently residing in the Meridian 1 or Succession CSE 1000 system for the selected items. When you choose Synchronize - Transmit - Selected, you are prompted to set up the communications task.

Communications logs

All communications activity is recorded in log files that are stored in the current working directory of your OTM administration modules. There are five separate log files. The names follow normal PC conventions, as follows:

- **RTRSTN.LOG**: Station data retrieve
- **TRNSTN.LOG**: Station data transmit
- **RTRNAME.LOG**: CPND data retrieve
- **TRNNAME.LOG**: CPND data transmit
- **OVL81RTR.LOG**: Reconcile data transmit noting deleted sets information

Each of these logs is accessed from the Log menu in the appropriate module’s Synchronization - Transmit or Receive menu.

When you choose Log, a submenu provides the following items:

View: Sends the log file to the viewer so you can browse or print the log. Log activity is appended to the end of the file, so the most recent activity is at the bottom of the viewer. See "OTM file Viewer" on page 590.

Clear: Clears the log file. You should do this occasionally so that the file does not get too large.

Note: There is no limit to the size of the log files, but there is a limit to the size of log files that the viewer can handle. There is a 100-page limit on log files for viewing from Synchronize - Log - View.

Note: During station retrieval, you should limit the amount of activity in other Windows tasks. During long station retrievals, or if there is sufficient activity in other Windows processes, the capacity of the communications buffer can be exceeded. This condition terminates the retrieval process to prevent erroneous data from being entered into the station data base.

You may notice that the Log window minimizes itself to prevent this occurrence. As the communications buffer starts to fill excessively, the Log window is minimized to allow faster processing of the incoming data. You should wait momentarily and restore the Log window to check the progress of the retrieval.

The Log window remains on the screen longer if you resize it to contain fewer lines. Similarly, you should minimize the amount of window resizing and moving during station retrieval, since these activities momentarily prevent retrieval activity from processing the incoming characters.

If the capacity of the communications buffer is exceeded, necessary data is lost to OTM. OTM displays a message and terminates the station retrieval process. You will notice that the stations were not added to the OTM PC data base.

You can repeat the retrieval to add the new station data. Alternatively, you can choose Synchronization - Parse Only to add the downloaded data to the OTM PC data base, and continue the retrieval process from where it stopped. It is possible to retrieve a portion of the stations on the system by choosing Station Retrieve - Specify.

Viewing large log files

There is currently a 100-page limit on the size of log files and reports that can be displayed on the screen. This limit affects Synchronization - View - Log and Reports menu items. A message appears to warn you that the file is too large to be viewed in its entirety, and only the first 100 pages appear.

You can avoid this limit by doing the following:

- Periodically, use Synchronization Log - Clear to prevent text from old retrievals or transmissions from unnecessarily adding to the size of the log file.
- Test large reports on a portion of the data, using the Filter feature in the Report Form menu. For example, you can limit the report to the first 200 records by opening the report form and selecting the Options - Report Filter. To limit the number of records, click System Fields, select the REC_COUNT field, and build the expression SYS->REC_COUNT <= 200. If a Report Filter already exists, this clause can be added using the .AND. operator.
- View large files with another program. Note that these files are too large to be viewed using the Windows Notepad.

Transmission errors during retrieval

You should inspect the Retrieval Log after performing a synchronization. This log reports the number of stations added, the number of stations compared, and the number of stations with discrepancies from that comparison. In addition, the Retrieval Log may contain warnings from unrecognized data during the transmission. The unrecognized data may be the result of transmission problems.

Compare the expected number of stations to be retrieved to the number of stations actually retrieved. If too few stations were retrieved, look for warnings in the log file that indicate that not enough data was correctly received to recognize the station.

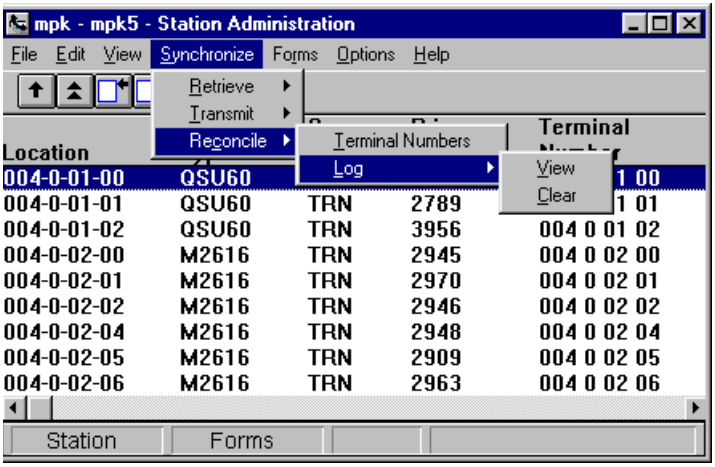
You should also note the number of compared stations. The first retrieval into the OTM PC database should only be adding stations. If any stations were compared, it may indicate a transmission error in the TN field that caused OTM to treat this station as an update to an existing station, instead of creating a new station.

Reconcile TN feature

This tool corrects synchronization problems that may arise when changes are made to station data outside of OTM. These changes may include Set Removal, Set Relocation done through a TTY using LD 10 or LD 11. The switch data base is changed but the OTM database on the local PC is left unchanged.

OTM users launch the Reconcile TN feature from the Synchronize menu in the Station Administration window. OTM compares the listed sets information with information in the OTM database against the switch data base to determine which TNs are valid. Invalid TNs are removed from OTM. All removed TNs are noted in a log file viewable by selecting Synchronize > Reconcile > Log > View (Figure 273).

Figure 273 Viewing the log file



Note: The Reconcile TN feature requires some time to complete its function and can degrade system performance. Do this task when switch traffic is low or after hours to minimize the effect on the system's performance. Users should back up the existing database before starting this function.

Conversion utility

Overview

The OTM Conversion utility provides two functions:

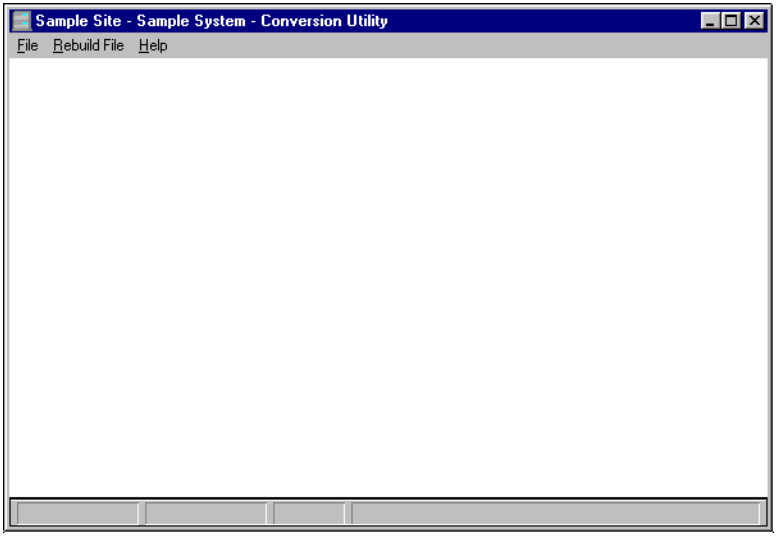
- Rebuild of station data to the current OTM file structure. You may need to run this conversion if you have copied system data to your current release directories that was built in an earlier release.

- Import of station data from other applications.

Starting the Conversion utility

When you choose File - Conversion utility in the Station Administration module, the OTM Conversion utility window opens.

Figure 274 Conversion utility window



The window initially contains no data in the workspace. The menu bar contains the following drop-down menus:

- File
- Rebuild File
- Help

You can select the desired menu using the mouse (click) or keyboard (Alt+ underlined character) in the normal way.

File menu

The File menu provides the following functions:

Import: Lets you insert station data from another database into the current system.

Close: Quits the Conversion utility.

Rebuild File menu

OTM administration can change the file structure of certain files. This can cause file errors during system maintenance. The Rebuild Files menu lets you check the individual files of system data and convert them to conform with the current file structure being used by OTM, if necessary:

All Systems: This option automatically searches the PC system for OTM systems and transforms selected files, if necessary.

Auto: This option automatically checks and transforms all files for each system, if necessary.

Select Files: This option lets you select OTM data files that will be checked for all systems, and transformed, if necessary.

Current System: This option checks selected files of the current system and transforms them if necessary.

Auto: This option automatically checks and transforms all files for the current system, if necessary.

Select Files: This option lets you select OTM data files that will be checked and transformed for the current system.

Help menu

The Help menu provides on-line Help for the Conversion utility.

Rebuilding files

The OTM administrator can modify the file structure used in OTM. This can result in File Errors during OTM processing. When this occurs, you can use the Conversion utility to rebuild the files, making their structure correspond with the current OTM file structure. In practice, the Conversion utility checks the structure of selected files and rebuilds only if necessary.

Accessing the files

To access the OTM data files for the Rebuild option, choose Rebuild File - All Systems or Rebuild File - Current System. Each option displays a cascading secondary menu that lets you choose to automatically detect files that require rebuilding or to manually select files for rebuild.

If you choose to select files, a Select Files dialog box appears. This dialog box contains a multi-selection list of files that comprise the OTM data. Selected files are indicated by highlight bars. Use the Windows vertical scroll bar to browse the entire list of files. Mouse click an item to toggle its selection status.

Click OK in the Select File dialog box to start the rebuilding task for the selected files of all systems or the current systems as required.

Monitor rebuilding files

The Conversion utility checks all the selected files in each system and rebuilds all files it finds that require rebuilding. During this task, a status dialog box appears that informs you of the progress of the task.

Upon completion, a status of Success appears. At any time you can click Cancel in the Status dialog box to halt the rebuilding task. This may result in some files not being rebuilt. Another attempt at Rebuilding Files now completes the task.

Importing station data

Station data is stored in accordance with the file structure and data base rules defined in the OTM application. The Conversion utility provides a merge function (Import) that lets you update station data, and add new stations, from a data source other than a Meridian 1 or Succession CSE 1000 system (data defined in DBASE or CPLUS, for example).

Note that the merge function uses the DN as the key so that any imported data must include a DN field. Also note that, if the supplied DN is not currently used in the open system, the record is not added unless a valid unique Location field (LOC) value is supplied. This means that to create a new record, you must supply both a currently unused DN and a unique Location.

Data for import must have a Fields Definition file (default but not limited to files with.FLD extension), as well as a comma delimited data file (default but not limited to files with .TXT extension). The Fields Definition file identifies which items in the data file belong to which OTM fields.

Note that the Fields Definition file must have the exact field names as defined in OTM. These can be found in the Select Data Field dialog box in the Global Update function. The fields are in the order in which the data is listed in the data file.

Considerations when merging key values and features

If you want to add or modify features for a particular record, you must identify a FTR field for each feature being modified. The values must be as identified in the Features dialog box when accessing multi-line telephone sets in the Meridian 1 or Succession CSE 1000 system. For example, Call Forward, when the forward DN is a four-digit number, is CFW 4 in the Meridian 1 or Succession CSE 1000 system.

If you want to add or modify key functions to a single line telephone, you must identify the key as **KEY** *n*, where *n* is the key number (include the space). If the value represents a Single Call Ringing key, then the field entry is **SCR** *nnnn*, where *nnnn* is the selected DN.

Select a data file

To select data to import, choose File - Import in the Conversion utility to display the Select an Import Text File dialog box. The Text File Selection dialog box lets you select the location and file name of the desired data file. By default, the dialog box tries to locate files with .TXT extension, but you can actually use any extension in the File Name text box.

Click OK in this dialog box to accept the data file name selection and display the Field File Selection dialog box.

Select a field file

Click OK in the Select an Import Text File dialog box to display the Select an Import Field File dialog box. The Field File Selection dialog box lets you select the location and file name of the desired field definition file. By default, the dialog box tries to locate files with .FLD extension, but you can actually use any extension in the File Name text box.

Click OK in this dialog box to initiate the merge function.

Perform the merge

When you have completed selection of the data and field files for merging to the current system data, click OK in the Select an Import Field File dialog box to initiate the merge function and display a progress status message box that has a percent completion bar. This dialog box has a Cancel button that will stop the merge before completion. When the progress bar indicates 100 percent, the Cancel button changes to OK. Click OK to return to the Conversion utility window.

The data is now part of the system and is available through the Station Administration module.

Example of import data

A typical import file might contain the following data:

- “3452”, “Robert”, “Williams”, “Accounting”
- “3497”, “Marie”, “Astor”, “Marketing”

- “8732”, “Lee”, “Smith”, “Accounting”
- “8743”, “Arthur”, “McKinley”, “Facilities”
- “3469”, “Mary”, “Owens”, “Marketing”

where each record has four fields that would be defined in a separate file, as follows:

- DN
- FNAME
- LNAME
- DEPT

Note that the merge function uses the DN as the key so that any imported data must include a DN field. Also note that if the supplied DN is not currently used in the system, the record is not added unless a valid unique Location field (LOC) is supplied.

Generating reports

Overview

The Report Generator module lets you create, view, print, and change custom reports. Access the Report Generator module by choosing File - Reports in the CPND and Station Administration modules.

OTM supplies several standard report forms for reporting OTM data. In addition, the Reports Generator module contains a form editor that lets you create custom report forms or edit existing forms. It also contains a viewer that lets you print reports or browse reports on the screen. A report executor lets you run the reports to the viewer for screen display, to a file, or to a printer. Custom selectable criteria allow you to tailor the report listing.

Reports considerations

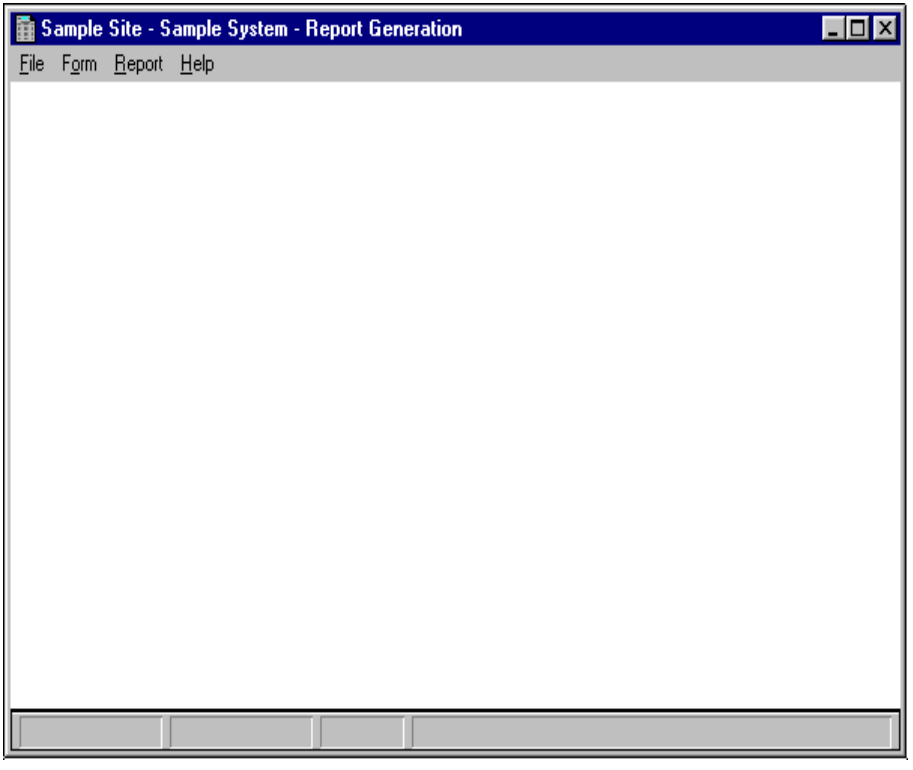
All report activity is performed in the current working directory—the system subdirectory. All forms are stored in this directory with a ".FRM" extension. Exported reports are also saved in this directory and are automatically given a ".TXT" extension. This means that you need supply only the filename (up to eight characters) when prompted to save a report to a file.

The OTM Report Generator requires that a printer be configured in the Windows software environment, although it is not necessary for the PC running OTM to be equipped with a printer.

Starting the Reports function

Choose File > Reports > Report Generator in the Station or CPND module to display the OTM Report Generation window (Figure 275).

Figure 275 Report Generation window



There is no data in the work area when the window first appears. The window contains a menu bar with drop-down menus that let you perform global actions within the Report Generator:

- File Menu
- Form Menu
- Report Menu
- Help Menu

File menu

The only function available from this menu is the following:

Close: Closes the Report Generator.

Forms menu

This menu lets you choose a current report form or create a new form.

New Report Format...: Lets you design a new form for a report.

Open Existing Report Format...: Lets you open a predefined form for the selected data in the system.

Reports menu

This menu allows access to the report executor.

Run Report...: Displays a dialog box that lets you access a report form that you can run (to the screen, to a printer, or to a file).

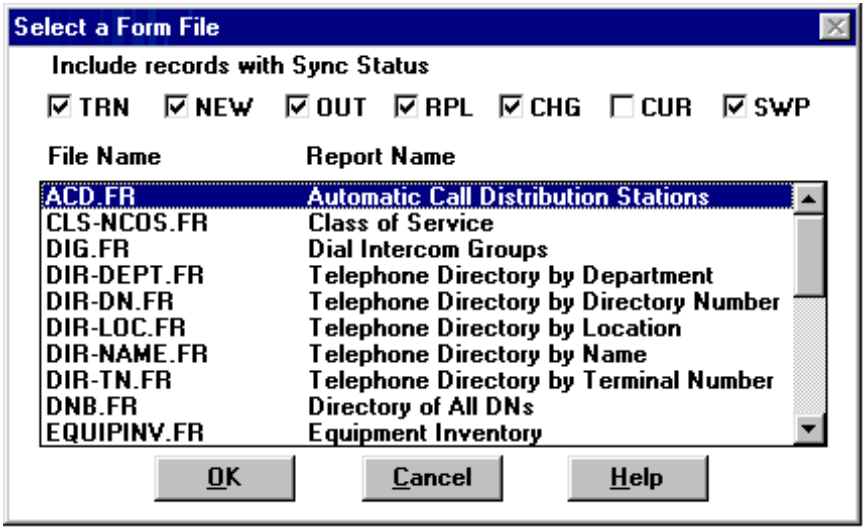
Running reports

Running a report involves selecting a report to run and selecting a destination for the report. Selection criteria for the records you want to choose are contained within the report form. If you desire different criteria, you can edit the form or create a new one. See “Report criteria” on page 613. You can send a report to a viewer for screen display, to a file, or to a printer.

Select a report

Select a report to run by choosing Report > Run Report in the Report Generator. The Select a Form File dialog box opens with a single-choice scrollable list of report forms on your system (Figure 276).

Figure 276 Select a Form File dialog box



Some reports in the list may be reports you have defined or modified for your needs. Default reports supplied with OTM include the following:

- Automatic Call Distribution Stations
- Class of Service
- Dial Intercom Group
- Telephone Directory by Department
- Telephone Directory by Directory Number
- Telephone Directory by Location
- Telephone Directory by Name
- Telephone Directory by Terminal Number
- Directory of All DNs
- Equipment Inventory
- Hunt Patterns

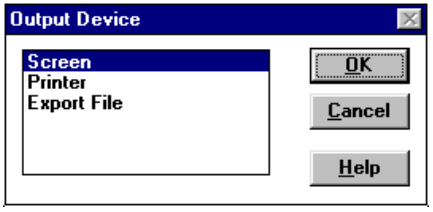
- Key Assignments
- Message Centers
- CPND Name by Directory Number
- CPND Name by Name
- CPND Name by Location
- CPND Name by Synchronization Status
- Telephone Directory (Phone Book)
- Private Line
- List of Power Failure Phones
- Ringing Number Pickup Group
- Speed Call Groups
- System Speed Call Groups
- Used DNs

The currently selected form is highlighted. Select a form and click OK to run a report using the currently selected form.

Select a destination

When you have selected a form and have chosen Report > Run Report, an Output Device dialog box provides a list of possible destinations for the report (Figure 277).

Figure 277 Output Device dialog box



The dialog box displays a list of destinations for the report:

- Screen
- Printer
- Export File

Select a destination, and then click OK to run the selected report.

View report

If you select Screen for the report destination, a viewer appears with the report in the work area (Figure 278).

The Viewer has the following menus:

File: Lets you display a report summary, print the report, or exit the viewer.

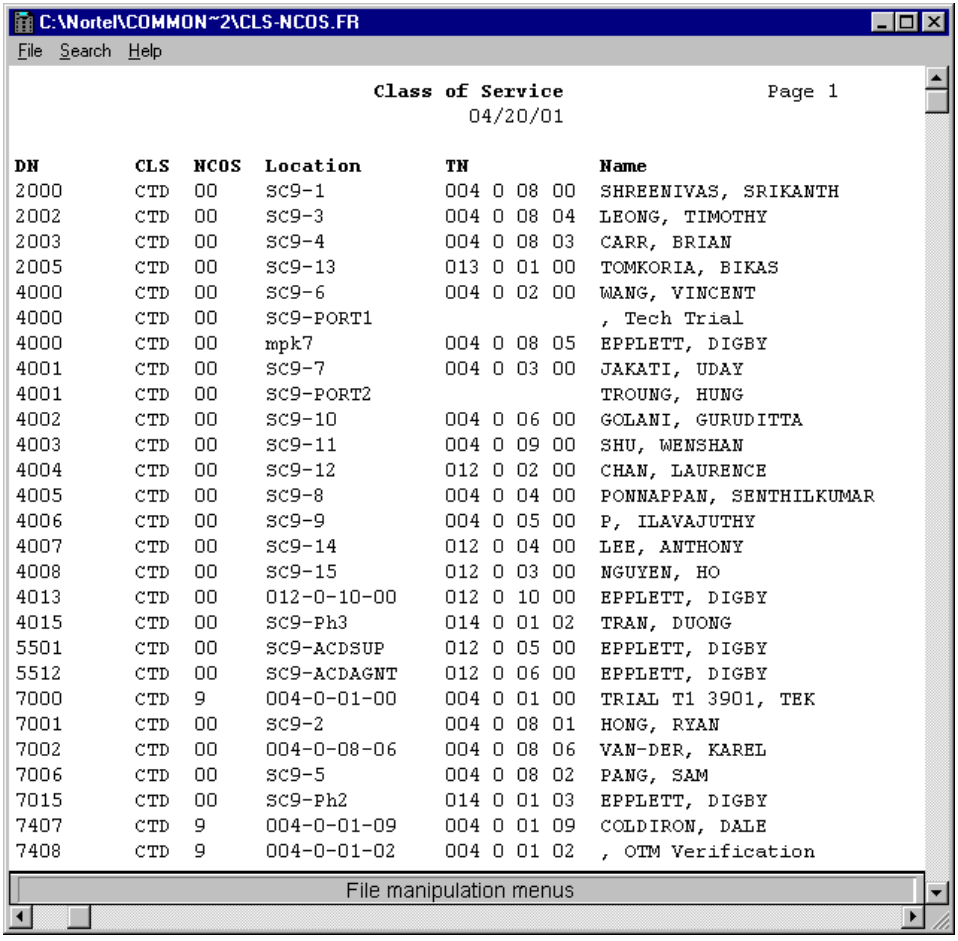
Search: Lets you find text contained in the report.

Help: Lets you access online Help for the viewer.

See “OTM file Viewer” on page 590 for more information.

You can print the report from the viewer to the printer defined in the report form, or to a printer you choose from the Viewer. You can also save the report to a file selected from the Viewer.

Figure 278 Example Report in the Viewer



Print report

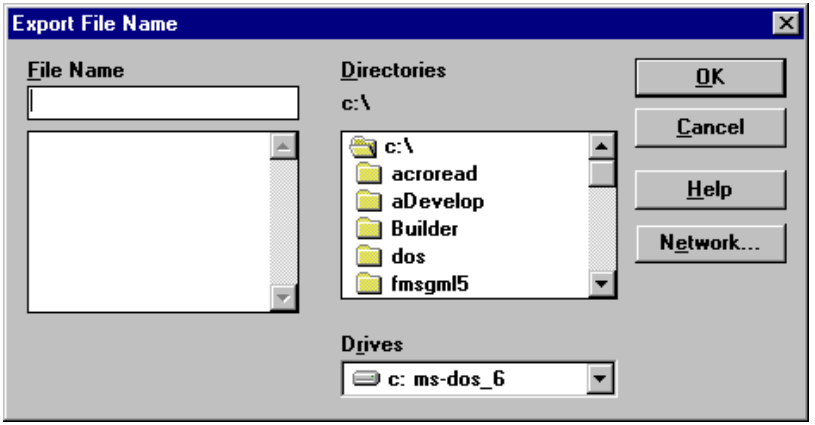
If you selected Printer for the report destination, the OTM Report Generator uses the Windows print function to direct the report to its default printer. The default printer for the report is identified in the form when it is created or edited. If you want to check or change the printer destination or setup, you must do this from the Form editor before you run the report. Alternatively, you can send the report to the screen and print from the viewer.

During printing, a Printing status box appears. You can stop the print job by clicking Cancel. A Report Viewer status box alerts you when the job is finished. Click OK to return to the Report Generator.

Export report

If you chose Export File for the report destination, the report output can be saved in a comma-delimited ASCII file. Export File displays a dialog box that lets you choose a name for the report file (Figure 279).

Figure 279 Export File Name dialog box



You can enter a file name up to eight characters. Click OK to send the report to the Viewer. See "View report" on page 588 for more information. Filename.TXT, a comma-delimited text file with the Filename as entered in the text box, is saved to the current PC directory.

OTM file Viewer

Overview

The Viewer lets you browse, print, and save OTM files accessed during Station Administration tasks. You cannot access the Viewer as a separate module. It is invoked when you attempt to print or display files created during OTM database administration. The files that can be viewed include the following:

- Reports
- Designation Strips
- Station Validation Log
- Communication Logs
- Station and CPND Administration list views

Viewing a file

When the File Viewer starts, the scrolling Viewer window contains the data from a file created during OTM data base administration (Figure 280). The Viewer does not allow editing, so the viewed data is in a fixed format.

You can browse and print the data using the menus, as follows:

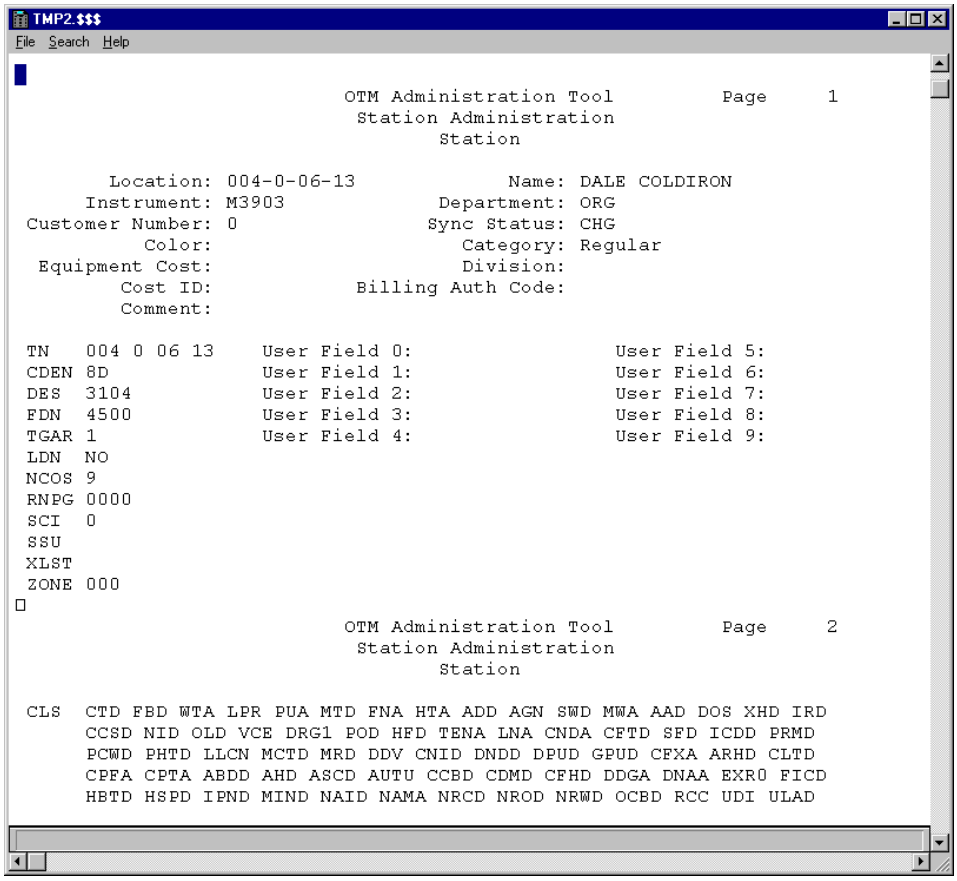
Viewer File menu

The File menu lets you display a file summary, save the file to a selected directory, print the file, or exit the viewer.

Save as: Lets you save the displayed data as a text file to your PC system.

Summary: Displays a file summary of the displayed data.

Figure 280 File Viewer window



Print: Sends the file to the default printer (the printer is normally the default printer as defined in Windows). However, for reports, the printer is defined in the form.

Printer Setup: Allows you to select a print destination and set printer options.

Close: Closes the Viewer and returns to the window that invoked it.

Viewer Search menu

The Search menu lets you find a text string that might be contained in the displayed data.

Find: Lets you define a text string to find. The Find function is not case sensitive.

Find Again: Lets you find the next occurrence of the currently defined string. This option is dimmed until you have searched for a string.

Changing viewed data

The data displayed in the viewer is in a fixed format, defined in OTM, for the file being viewed.

Browsing the file

The OTM Viewer is a line viewer with the current line highlighted. You can use the arrow keys or <Page Up> and <Page Down> to move the highlight one line or one screen at a time. You can also use the Windows vertical scroll bars to scroll the report, moving the highlight bar as you scroll. The Windows horizontal scroll bar lets you browse entire lines when the lines are too long for the window.

Use the Search menu to find selected text. A successful Find highlights the line containing the search text.

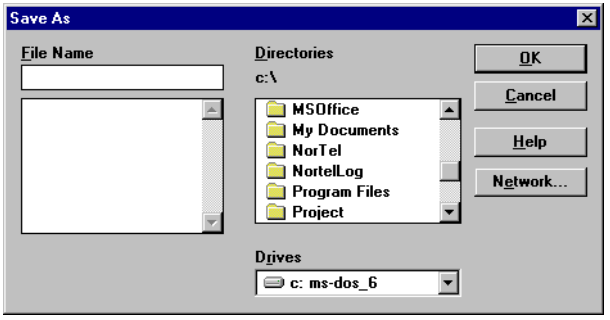
Save As

The file appears in the Viewer with a default file name in the title bar. You can save the data as an ASCII text file. Choose File > Save As to save the current file with a different name or location.

Select a file name

The Save As dialog box (Figure 281) is the standard window used to specify the file name and file location (for a full description of this dialog box, refer to your Windows documentation). The dialog box contains a scrollable drop-down list of disks that your PC can access. Select a disk to display the list of directories on the disk in a scrollable Directories list field. Select a directory to display a scrollable list of files in that directory. Select an item from the File Name list or type in a file name.

Figure 281 Save As dialog box



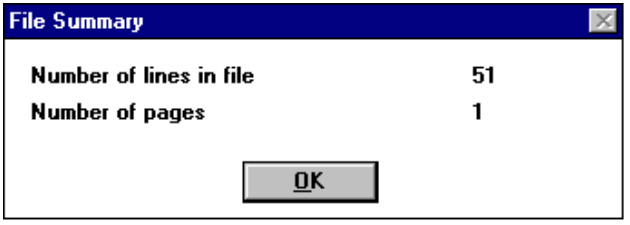
At any time, click Cancel to return to the Viewer without saving the file. Click OK to save the file with the specified file name.

The saved file uses the current default Windows font for character formatting. Any character formatting in the original file (from a Report, for example) is not saved.

Display a file summary

Choose File > Summary to display a File Summary status box (Figure 282).

Figure 282 File Summary status box



This summary gives the number of lines for a text file (or number of records for a data base report file) and the number of pages in the file. Click OK in the status box to return to the Viewer.

Print from the Viewer

You can print the file (exactly as displayed) to a default printer directly, or you can select another printer for the task. Choose File > Print to print the contents of the Viewer to one of the following destinations:

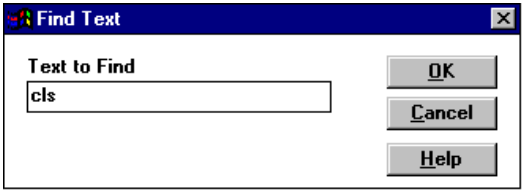
- If the Viewer is displaying a report, the print destination is the destination defined in the report. If your PC cannot find this printer, OTM displays a status message. Click OK in the Status message box to return to the Viewer.
- If no printer is defined in the file being viewed, the print destination is the current printer defined in Windows. This can be the Windows default or a printer selected in the File - Print Setup option of the Viewer.

A progress status message appears while the file is printing (or sent to a print spool if applicable). Click Cancel in the Status box to stop printing. When the task is complete, OTM returns to the Viewer window.

Search the file

Choose Search > Find to display a dialog box that lets you enter text you want to find (Figure 283). If Find Again is available, the dialog box contains the previous search data.

Figure 283 Find Text dialog box



Click OK to accept the data in the dialog box and proceed with the search. Click Cancel to return to the Viewer window. Click Help to display online Help for this dialog box.

The text box accepts any input. The find function is not case sensitive.

The Viewer highlights the line containing the first occurrence of the text that you specified in the Find Text dialog box. The Find function always starts at the top of the report, regardless of the current cursor position.

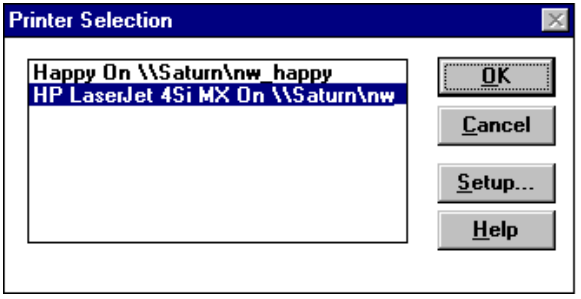
When the first search is complete, Search > Find Again is available. If you choose this item, the highlight bar moves to the next occurrence of the text. You can repeat this until a status message indicates that are no more occurrences. Click OK in this status box to return to the Viewer.

When you finish searching, click Cancel to return to the Viewer.

Printer setup

To define the printer destination and setup from the Viewer, choose File > Print Setup. The Printer Selection dialog box opens (Figure 284).

Figure 284 Printer Selection dialog box



The Printer Selection dialog box contains a scrollable list of printers accessible to your PC. Click OK to accept the selected printer and return to the Viewer window. Click Cancel to return to the Viewer window. Click Help to display online Help for this dialog box.

The Setup button opens the standard Windows printer setup dialog box for the currently selected printer. Refer to your Windows documentation for information on Print Setup.

Click Cancel in the Print Selection dialog box to return to the Viewer without changing the Print setup. Select a printer and click OK to set the selected printer as the Viewer default and return to the Viewer. This new printer destination is only valid for this viewer session. The report form still retains the original print setup.

Exit the Viewer

Choose File > Close to close the Viewer and return to the Report Generation window.

Designing report forms

Overview

The OTM application includes several predesigned forms you can use to run the most common reports. OTM also includes a Report Generator module that includes a Forms editor. The editor lets you modify existing forms or create your own forms for customized reports.

The Forms editor lets you generate a customized layout for a report by piecing together predefined report sections.

Form section concepts

The Report Generator organizes a report by sections. A report form can contain one or more sections:

- Report Header
- Page Header
- Sort Header(s)
- Detail Section
- Page Footer
- Sort Footer(s)
- Report Footer

Each of these sections is optional, but a form must contain at least one section and can have only one of each type. Each section allows an internal free layout of data. The only restriction is the position a section occupies on the report in relation to the other sections.

When you insert a new section in a form, it automatically positions itself correctly relative to other sections. This position is indicated in the Editor window by a line with the section title printed on it. This line is not part of the form, it merely serves as the top boundary of the section it indicates. The list above indicates the order in which the sections appear in the form.

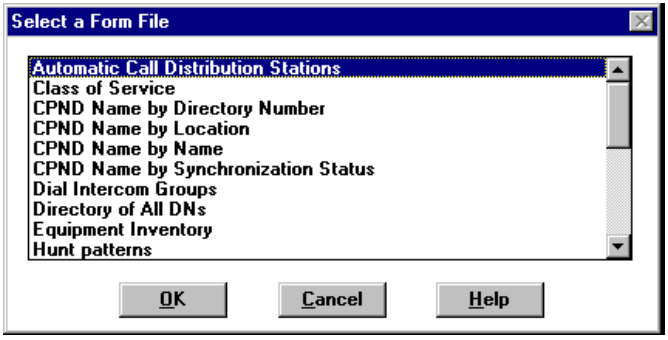
Arranging sections within a form is described in "Validating the data" on page 478.

Forms Editor

The Forms Editor is an application within the Report Generator that lets you design and customize a report using the current database.

Choose Form > New Report Format to display the Forms Editor, with a blank form in the working area. Choose Form > Open Existing Report Format to display a dialog box that lets you select from a list of forms for the current system database (Figure 285).

Figure 285 Select a Form File dialog box



The currently selected form is highlighted. Select a form from the list, and then click OK to open the Forms Editor. The Forms Editor contains a menu of actions to perform.

File menu

This menu contains commands for saving the current report file and specifying the report parameters.

Select Report View: Lets you select the key selection criteria that determine the content of the report at runtime.

Save: Store the current report form to a file. If it is a new form, you are prompted for a filename (up to eight characters followed by a period and an extension of up to three characters).

Save As...: Store the current report form to a file. Report form files must be stored in the common data directory. OTM does not allow changes to the path for these files.

Printer Setup: The Windows default printer is automatically assigned to the current form when you save it. This selection lets you select a different printer and printer configuration to be associated with the current form from a list of installed printers.

The printer options that you select here determine the width and height of the report. The width of the report is indicated by the length of the section separation lines in the form editor window.

Exit: Close the Forms Editor and return to the Report Generation window. If the current form has not been saved since the last change, you are prompted to save it before exiting the editor.

Edit menu

This menu contains miscellaneous edit and cursor navigation functions:

Insert Line After/Before: Puts a blank line following/preceding the current cursor position.

Delete Line: Removes the current line, moving all successive lines up.

Highlight Off: Turns off any highlighting in the current form (lets you deselect text and fields).

Beginning/End of Line: Moves the cursor to the left/right end of the current line.

Next/Previous Word: Moves the cursor to the beginning of the next/previous word or field in the form, going to the next/previous line if necessary.

Section menu

This menu contains commands to insert, edit, and delete report sections.

New...: Lets you add a section to the current form. Sections include:

- Report Header: Appears at the top of the report only
- Page Header: Appears at the top of each page of the report
- Detail Section: Defines data to be reported
- Page Footer: Appears at the bottom of each page of the report
- Sort *n* Header: The *n*th sort criterion field for the report (*n* = 1–9)
- Report Footer: Appears at the end of the report only

The section title appears at the current position of the selected section on the form. This line indicates the Forms Editor cursor location. It does not appear on the printed form.

Edit Current...: Lets you define the layout of the section in which the Forms Editor cursor is currently positioned. It displays a dialog box containing check boxes for defining section layout at runtime. Choices include:

- Start new page before this section
- Start new page after this section
- Do not include blank lines
- Suppress trailing (or leading) blanks in a field
- Titles on every page of the report

Delete Current...: Removes the section in which the cursor is currently positioned.

Sort Field...: Lets you change the current sort field selection. This selection is not available unless the form has sort fields defined (use the Section New function to insert sort fields).

Break Field...: In a typical report, the break field is the same as the sort field. This selection lets you define a field for a section break that is not a sort field.

Field menu

This menu contains options to insert, modify, delete, and maintain fields.

Insert New Field: Displays a submenu that lets you choose a field type for insertion into the form at the cursor position. Field types include the following:

- **Data Field**: Displays a list of data fields in a record of the system database

- **Calculation Field**: Displays a box for entering a formula for the field
- **System Field**: Displays a list of OTM system fields

Edit Current Field...: Lets you modify attributes for the current field.

Edit Field Expression...: If you have a calculated field at the cursor position, this selection lets you modify the formula.

Options menu

This menu lets you define the appearance of the report and select data records for inclusion in the report.

Report Parameters...: Brings up a dialog box that allows you to specify certain report parameters:

- Name of the report (This is not the Windows filename.)
- Margins for the printed page
- Output of some trial records for form layout adjustment
- Default date format for input and during execution

Report Filter...: This option allows you to enter a filter criteria for the report. Each data record is tested with the expression that you provide here. A record is selected only if this expression evaluates to a TRUE value. For example, if the expression was *DN->amount>1000*, then only records with a DN higher than 1000 are included in the report.

Fonts menu

This menu contains formatting commands for highlighted characters (and field values) at runtime.

Normal: Removes character formatting, if any.

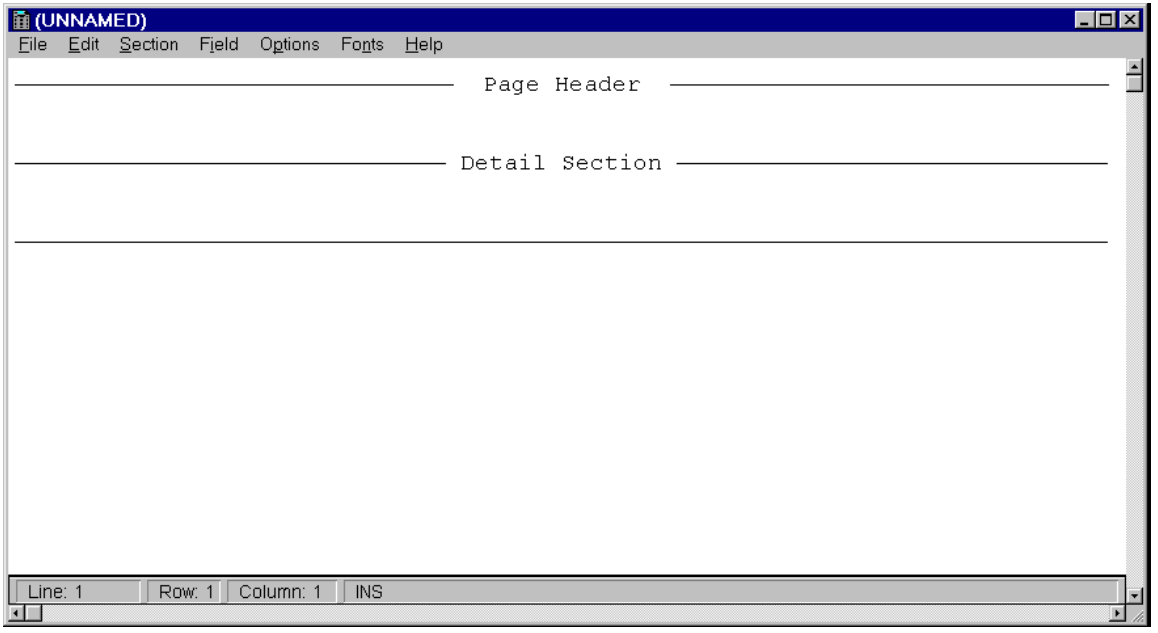
Formatting: Normal, **Bold,** Underline, *Italic*, Superscript, Subscript, ~~Strike~~.

Fonts: Lets you select font and size for highlighted characters and fields. The report generator allows only fixed space fonts. You should be careful that columnar text uses the same font size and spacing to maintain column alignment.

Changing sections

Figure 286 shows an example of a blank form with all sections in place. The sections are divided by a line labeled with the section name. These lines are place indicators only and do not appear on the printed report.

Figure 286 Example blank report form

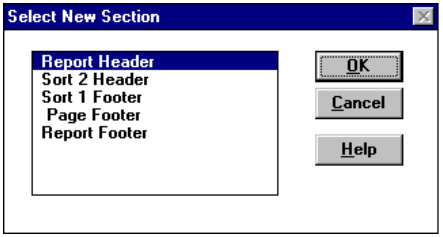


The **Section** menu lets you change the sections as described below.

Insert a section

To insert a section in a form, choose Sections > New with the cursor anywhere in the Forms Editor window. The Select New Section dialog box opens listing the available sections. Only the sections that do not appear in the form are presented (Figure 287).

Figure 287 Select New Section dialog box



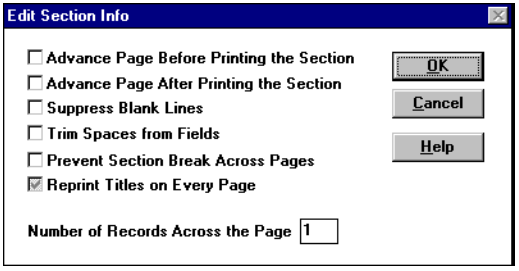
The currently selected Section is highlighted. Select a section, and then click OK to insert the section in the current form.

At insertion time, each section contains one blank line. Use the Edit > Insert Line After/Before functions to change the section size at any time while the cursor is in the work area of the section (below the section title line and above the next section title line).

Define section parameters

You can set runtime parameters for the section at the current cursor position. Choose Section > Edit Current to display an Edit Section Info dialog box (Figure 288). This dialog box contains check boxes that let you set or clear section parameters

Figure 288 Edit Section Info dialog box



Select the appropriate check box to toggle parameter selection. The parameters include the following:

- Advance Page Before Printing the Section: The section is printed at the top of the next page.

- Advance Page After Printing the Section: Causes a printer Form Feed after this section.
- Suppress Blank Lines: Causes blank lines not to be printed.
- Trim Extra Spaces from Fields: If a field value is shorter than the field maximum length, this selection causes the field length to be truncated to the length of the value.

Note: If you are using a columnar format, this parameter may cause misalignment of columns.

Report Header / Footer

These are printed only once, at the beginning/end of the report. The header is generally used as a title and description of the report. The footer may be used as a report summary. A report header and footer can contain free text and fields, such as System Date and Time.

Page Header / Footer

These are printed at the top/bottom of every page in the report (beneath the Report Header on the first page and above the report footer on the last page). The header may contain text such as Report title, column headers and any other pertinent text as well as fields, such as System Page Number, Date, and so on. The footer may be used for page numbers and page by page field totals or other pertinent data or text.

Sort Header / Footer

Each of these sections indicate a field that the report uses for a sort break. The field you choose is not printed. You can place text or fields or both text and fields at these section breaks to describe the sorts being used in the report.

Detail Header

This section contains a list of data for each record of the database, selected and sorted according to defined criteria.

Edit a form

Text and data are added at the current position of the cursor within the form. Move the cursor using the mouse or the keyboard arrow keys. The status line at the bottom of the window gives the cursor position by line (row) down and character (column) across. The <Ins> key toggles the insert/overtype mode. The status line indicates INS for insert mode (text moves everything to the right of the cursor to the right) or OT for overtype mode (text replaces existing text at the cursor position).

Type to insert text. There is no automatic line wrapping. If you insert a carriage return (<Enter>), the cursor is returned to the beginning of a new blank line.

You can use the Edit menu to move the cursor within a line, as follows:

- **Start of Line**: Left end of line
- **End of Line**: Right of the last character on the line
- **Next Word**: First letter of the word to the right of the cursor
- **Previous Word**: First letter of the word to the left of the cursor.

To insert and edit a field at the current cursor position, use the Field menu.

Insert a field

Choose Field - Insert New Field to display a submenu with a list of data field types to paste at the current cursor location. This option is not available when the cursor is positioned on a section separation line or on an existing field.

The selected field appears at the current cursor location as a series of “x” symbols that represent the maximum number of characters in the field, as defined in the database. You can delete any number of field symbols to reduce the field length. To increase the field length, position the cursor on any field symbol except the first one, and type spaces. You can change the current field attributes by choosing Field - Edit Current Field.

Insert a data field

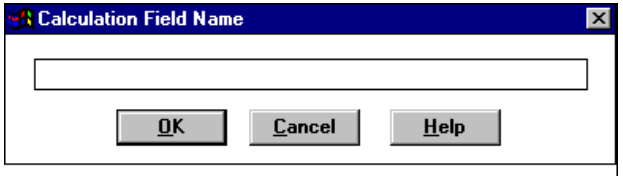
A data field is one field in each record of the current database. If you choose Field - Insert New Field - Data Field, a list of data fields is displayed in a Select Data Field dialog box. See "Selecting data items" on page 544 for further details.

Click OK to paste the selected field into the form at the current cursor position.

Insert a calculation field

A Calculation field contains an expression that is a combination of data, functions, and operators. At runtime, the expression result is output for each record. You must supply a name for the field as well as the expression to be evaluated. The Field - Insert New Field - Calculation Field option first prompts you for the name of the field in a Calculation Field Name dialog box (Figure 289).

Figure 289 Calculation Field Name dialog box



You can enter up to 48 alphanumeric characters (not blanks) in the text box to represent the calculated field name.

Click OK to enter an expression for the calculated field. The procedure for expression entry is the same as for "Define selection criteria" on page 545.

Insert a system field

A System field contains OTM system-dependent information, such as date, time, report page number, and record count. This information is typically in the report or page header or footer. One System field, WRAP_OVERFLOW allows a data field to overflow to the next line or lines. For example, a comment field of 30 characters can contain 10 characters in the data field itself and 10 in each of two WRAP_OVERFLOW fields (generally placed directly under the data field itself).

If you choose Field - Insert New Field - System Field, a list of System fields is displayed in a Select System Field dialog box. The procedure is the same as in "Select Data Field" on page 546.

Click OK to paste the current highlighted field in the form at the cursor position.

Edit field attributes

This option, available by choosing Field > Edit Current Field, is used to edit the attributes for the current field. This option is available only when the cursor is positioned on a field. The field name appears in the status bar of the form window. The option displays a set of attributes that can be modified for the current field. You can modify the field attributes as needed.

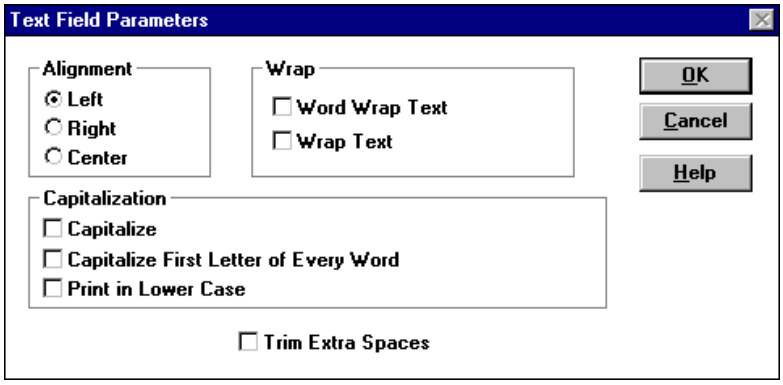
The attributes that you can modify depend on the type of field. Field types include:

- Text (alphanumeric characters)
- Numeric (numbers, including thousand separators and decimal point)
- Date (date in predefined formats)

Edit text field attributes

If the cursor is located within a text field and you choose Field - Edit Current Field, a Text Field Parameters dialog box displaying the current attributes for the field opens (Figure 290).

Figure 290 Text Field Parameters dialog box



The following parameters can be modified:

Field Alignment: By default, text data at runtime is left-aligned. You can use the radio buttons to select left, center, or right alignment.

Wrap: If the field length on the form is too short to accommodate the data at runtime, you can select a wrap option to run the text to a **WRAP_OVERFLOW** System field that you have already defined. The Wrap option breaks at the end of the current field, and the Word Wrap option breaks at the end of the last word before the end of the field. The default attribute has no wrap option selected.

Capitalization: By default, all text in the data field is printed as stored in the database. You can change this to all capitals, leading capitals, or all lowercase, by selecting the appropriate check box.

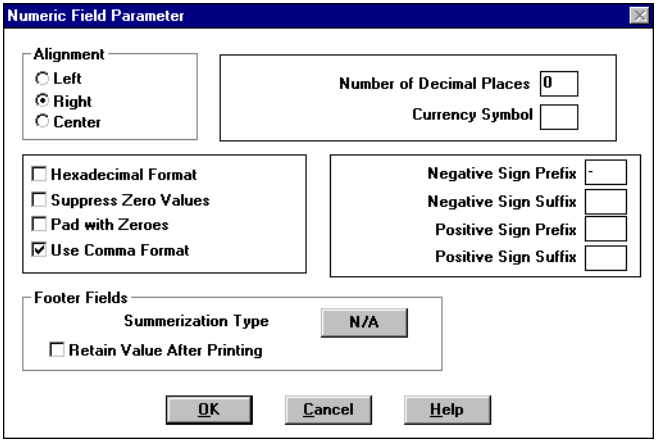
Trim Extra Spaces: This check box trims the field length to the length of the data that is entered at runtime.

Note: If you are using columns, this option may cause columns to become misaligned.

Edit numeric field attributes

If the cursor is located within a numeric field and you choose Field > Edit Current Field, a Numeric Field Parameters dialog box displaying the current attributes for the field opens (Figure 291).

Figure 291 Numeric Field Parameter dialog box



The following attributes can be modified:

Field Alignment: By default, numbers are left-aligned at runtime. You can use the radio buttons to select left, center, or right alignment.

Number of Decimal Places: If the field contains a real number, this option lets you select the number of digits printed to the right of the decimal point.

Currency Symbol: If the field represents money, you can use this option to define the currency symbol.

Sign Representation: This option lets you select how to represent negative and positive number values. You can enter a character for prefix and suffix for both positive and negative numbers.

Zero Values: Check the Suppress Zero Values check-box to suppress printing this field if it contains a value of zero. Check the Pad with Zeroes check box if you wish to align the number to the right of the field and fill with leading zeroes. Check the Use Comma Format check box to insert a comma between thousand values in the field.

In addition to these attributes, you can edit the following attributes for fields that are located in the footer section of the report:

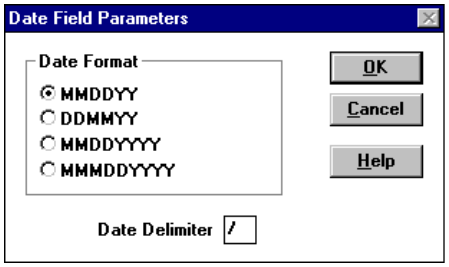
Summarization Type: A numeric field in the footer could require the report to print a summary value. This option is a function selector that displays a list of possible summary values, such as total, average, maximum, minimum, or count. You can also print the actual value for the field by selecting Value.

Retain Value After Printing: If the footer is a page footer, you can check this option to print "running" values instead of the value for each page.

Edit date field attributes

If the cursor is located within a Date field and you choose Field > Edit Current Field, a Field Name Edit dialog box displaying the current attributes for the field opens (Figure 292).

Figure 292 Date Field Edit dialog box



You have a choice of four formats for the Date output, selectable by radio button:

MMDDYY
DDMMYY
MMDDYYYY
MMMDDYYYY

You can also define the date delimiter by entering a required one-character delimiter in the Date Delimiter text box (/ or - , for example).

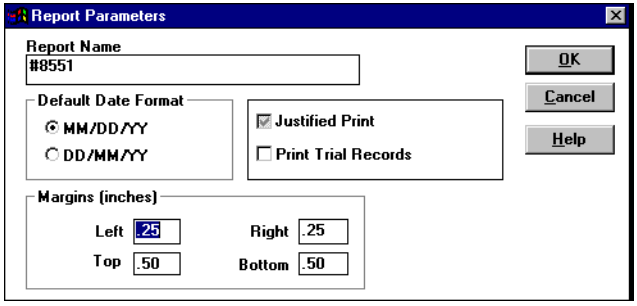
Edit calculation field expression

This option is available only when the cursor is positioned on a calculation field and you choose Field - Edit Field Expression, or when you are first inserting a calculation field in the form. The option shows the existing calculation expression, if any, in a dialog box and allows you to make modifications. The action of this dialog box is the same as that for "Define selection criteria" on page 545.

Setting report parameters

The Forms Editor Options menu lets you set parameters for the report. These parameters are stored with the form and will be operative at runtime.

Figure 293 Report Parameters dialog box



The parameters are defined in the Report Parameters dialog box (Figure 293). To open the dialog box, choose Options > Report Parameters in the Forms Editor. Parameters include the following:

Report Name: A text box that lets you enter up to 36 contiguous alphanumeric characters. This name is used in the OTM system as the name for the report and the form. This is not the same as the Windows filename.

Default Date Format: A pair of radio buttons that lets you define the format in which dates are printed at runtime. The two formats are MM/DD/YY or DD/MM/YY.

Print Trial Records: Run the report with just a few records. This enables you to check that the form generates a report with a suitable appearance and layout.

Margins: Four text boxes that let you set the page margins. Enter numeric data only, and ensure that the page layout is valid.

Character formatting

You can set the appearance of printed text using the Fonts menu. By default, text and fields are output in the Windows default font with Normal (unmodified) attributes.

A selection from this menu acts on the selected data. To highlight data (text and fields) place the cursor at one end of the data to be highlighted, hold down the left mouse button and move the cursor to the other end of the data. To turn off highlighting, click anywhere in the form that is not highlighted.

Use the Fonts menu to display a list of character enhancements. Select one to print the highlighted text with that enhancement. Enhancements include the following:

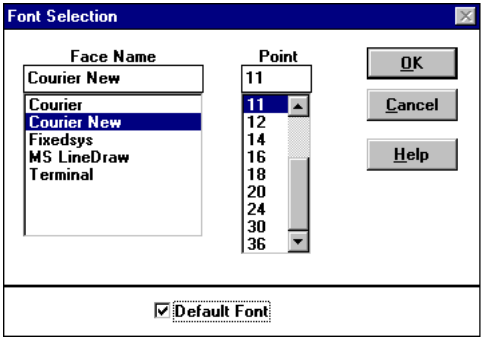
Normal, **Bold,** Underline, *Italic*, Superscript, Subscript, ~~Strike~~.

When you apply an enhancement, highlighting is removed. If you desire more that one enhancement for any text, you must highlight the text again and select another enhancement. To remove an enhancement, highlight the text and choose Font > Normal.

Font selection

Choosing Fonts > Fonts... opens the Font Selection dialog box (Figure 294) from which you can select a font for the highlighted text.

Figure 294 Font Selection dialog box



The Face Name box contains the name of the font for the selected text. A list box shows available fonts with the current font highlighted. Click the desired font to change the current font in the Face Name box. Use the arrows to help find the desired size, and click to select the font size.

Click OK to set the highlighted text to the currently selected font and size.

To use a single font for the entire report, select the font face and click the Default Font check box. This becomes the Normal enhancement selection.

Report criteria

The Forms Editor Options menu lets you select criteria for record selection in the report. The criteria cannot be set at runtime, and are stored with the form in which the selection is made. The criteria are defined in an expression that displays in a Select Record Criteria dialog box when you choose Options > Record Criteria. The action of this dialog box is the same as for "Define selection criteria" on page 545.

Building a report in the OTM Report Generator - Form Editor

Reports in OTM are built using report forms. The report form contains the information that allows the same report to be run repeatedly with new or updated data. The report form stores information that fully describes the report to the OTM software. A report form is comprised of several sections that describe different aspects of the report. A number of standard report forms are provided with the OTM software to provide some commonly used reports.

This section describes a typical session to build a new report form. As an illustration, it produces a modified version of one of the OTM standard reports: Telephone Directory by Department. The report prints the department name once and prints the station information for each department underneath the department heading.

This section describes a step-by-step process to produce a report form. As you become more proficient using the Report Generator, you may find that you use a different series of steps to build or modify reports. Perform the following steps to build a report form:

1 Decide what information needs to be displayed on the report.

2 Select the Report View that best provides the information.

3 Place the individual data fields on the report.

4 Decide if the report lines should be sorted.

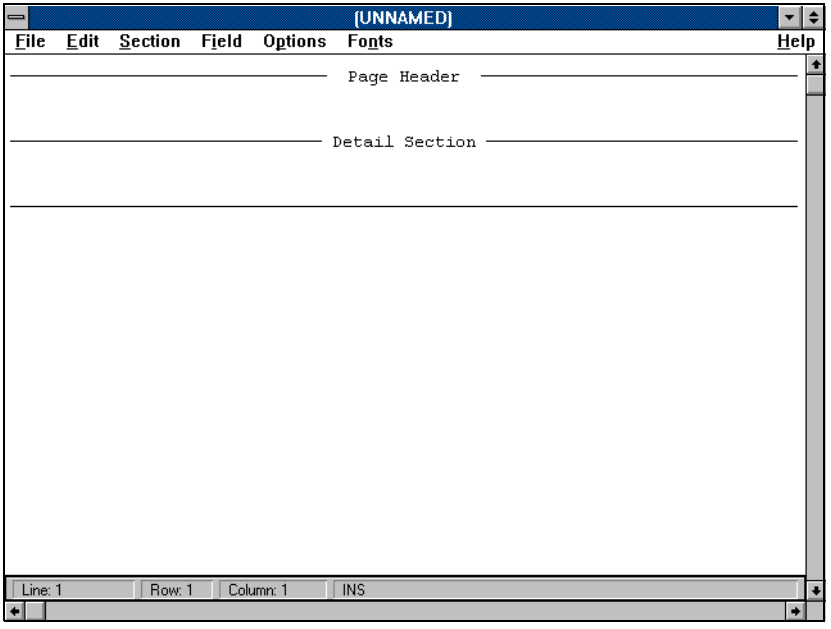
5 Specify any special printer considerations for this report.

6 Apply the finishing touches.

7 Save the report and test the results.

To work with Report Forms, start the Report Generator (choose File > Reports > Report Generator). Choose Form > New Report Format. This example shows how to create a new form. The report generator places an empty report form on the screen (Figure 295).

Figure 295 Empty Report Form



Decide what information needs to be displayed on the report

As you will see in the next section, information in OTM is organized into several logical databases. A report can use any one of these logical databases. There is also OTM system-dependent data that can appear on a report. This data includes date, system name, page number. Reports also can contain fixed text, typically headings or other constant text information.

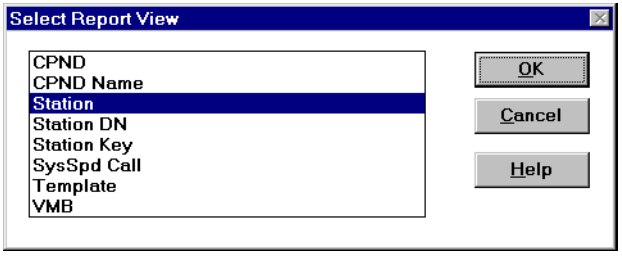
In this example, you are using station information (as distinguished from CPND or VMB information). You can sketch out a rough picture of the report as a guide to what will fit on the page and how much heading information will be included.

The basic model of the Report Generator is to read each record in the logical database, decide if it should be included in the report (according to the Report Filter). Some reports sort the records (according to the Sort Header sections). Finally, the records are printed. Some reports print out a line for each record included in the report (specified in the Detail section). Some reports print out summary information (specified in the Sort Header or Sort Footer section), such as the total number of particular instrument types. Some reports combine the detail and summary information

Select the Report view that best provides the information

After deciding to build a report focusing on station data, pick an appropriate Report View (Figure 296). Views provide alternative ways of looking at the data. Some of the report views describes the type of data. If the report describes CPND configuration information, then choose the CPND view; for CPND Name information (by Directory Number or Group) use the CPND Name view; for VMB information (by Directory Number) use the VMB view.

Figure 296 Select Report View dialog box



Station data is provided with some alternative views. If the report should print one line for each station, then choose the Station view. If the report should print one line for each Assigned Directory Number, then choose the Station DN view. If the report should print one line for each station key, then use the Station Key view. (In the Station Key view, single line information is included by assigning "pseudo key numbers" to the single line key features.) The SysSpdCall view is a special view primarily designed for the System Speed Call Report. It provides one record for each system speed call list user. If the report is selecting only certain records from the database or printing only summary data, then it will not actually print a line for each record, but the view describes how the selecting and sorting process examines the records in the database.

Place the individual data fields on the report

Once the Report View has been chosen and the basic design of the report has been defined, it is time to place the data on the report page. The Report Generator Forms Editor shows the current form broken into its logical sections. Initially, the Page Header section and the Detail section appear. As other sections are incorporated into the form, they appear as well. In this example, the report contains the following sections:

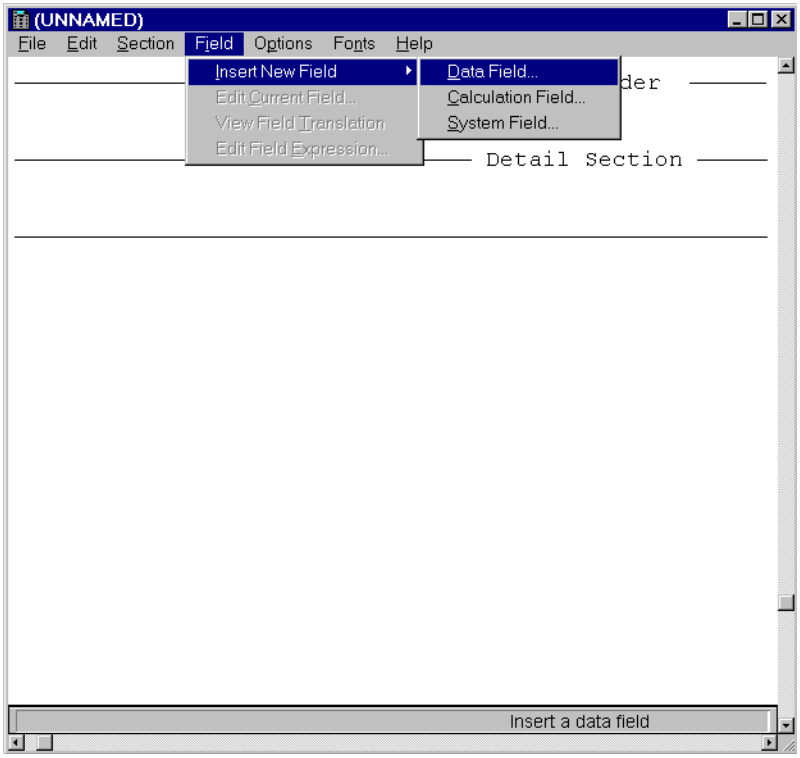
Page Header: This section contains the information displayed at the top of each page. Typically, it contains the report title, the column headings over the data, the page number, the system name.

Detail: The detail section describes the data items that appear on each line in the body of the report. Typically, it contains data from each record in the database that is included in the report. The data may be data items from the record or calculated fields built from the data fields. Calculations allow the report to create specially formatted names or other special expressions.

Sort Header: The sort header sections (there can be several) describe how the lines in the report are ordered. Sort 1 Header describes the primary sort, if two records have the same value for the sort field, then Sort 2 Header can be used to refine the order of the report. A report that should be ordered by name might specify LastName in Sort 1 Header and FirstName in Sort 2 Header.

It is often easier to design the report by specifying the Detail section first. This allows you to lay out the data on the page before placing the column headers. Treat the screen as a blank report page and position the cursor in the Detail section where the field should be placed. Choose Field > Insert New Field > Data Field to see a list of available data items (Figure 297).

Figure 297 Inserting Data Field in the Details section



Choose Field > Insert New Field > Data Field to display a list of the fields that apply to this report view (Figure 298). This Select Data Field list also appears in other situations where you need to select a field. Several data fields have been added specially to help produce reports and some fields have special meanings that affect their use in reports. Some examples of special reporting data fields include the following:

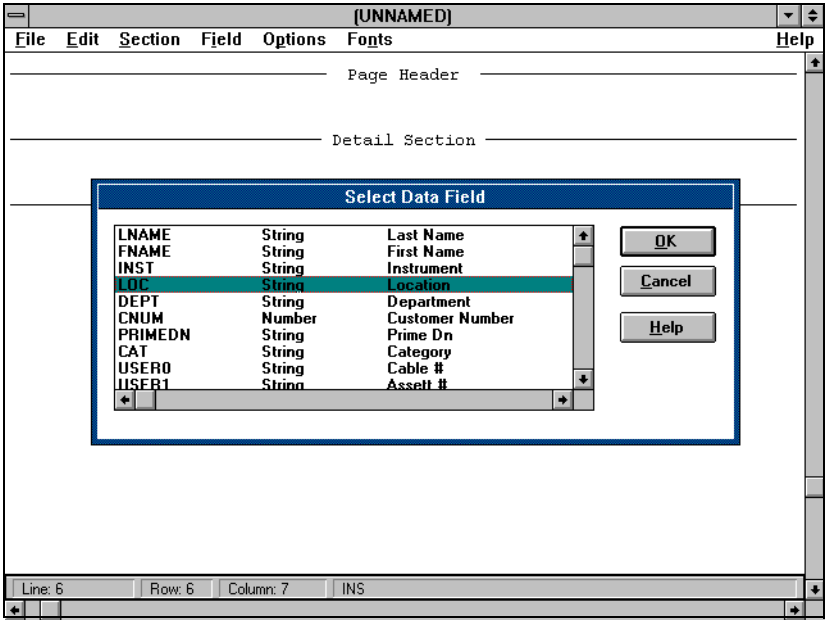
ADN - All Directory Numbers: A list of all the Directory Numbers assigned to the station. This field creates a text field with the DNs separated by a space.

ACDS: Keys Assigned to Automatic Call Distribution, showing both the ACD DN and Position ID.

DN: The Directory Number assigned to a single line station. The PRIMEDN field contains the Directory Number assigned to a single-line station and the Directory Number assigned to Key 0 on a multi-line station.

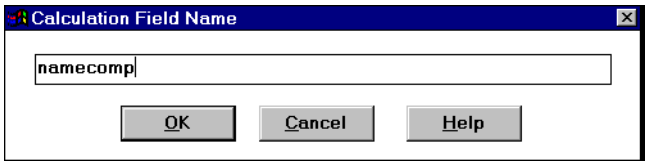
Note: Key features should be reported from the Station Key view and not from KEYGUPD or FTRGUPD.

Figure 298 Select Data Field dialog box



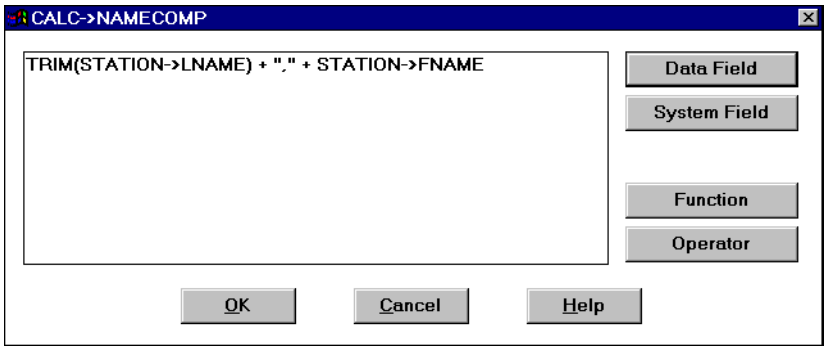
Use a calculated data field to tailor the information from the data record. To use a calculated field in a report, choose Field > Insert New Field > Calculation Field. A dialog box opens (Figure 299), prompting you to name the newly calculated field.

Figure 299 Calculation Field Name dialog box



The Field Name dialog box is followed by a dialog box that allows you to construct an expression that performs the calculation. It can be built from existing data fields, functions, and operators. The example in Figure 298 constructs a field that contains “Last Name, First Name.”

Figure 300 Defining a Calculation field

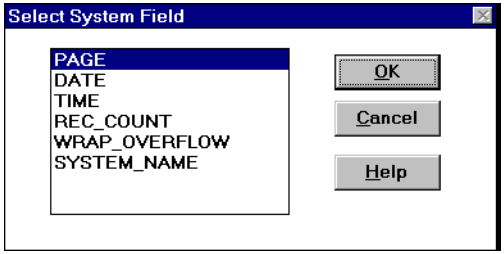


Note that the TRIM function is used to remove extra spaces and the “+” operator is used to concatenate the two fields. You can type the expression directly in the box or you can select the fields (from the Data Field or System Field buttons), the functions, and the operators. The expression is built as the pieces are selected.

Note that some functions apply to text fields and some functions apply to numeric fields. The Select Data Field list shows whether a field is numeric or text. In general, functions should not be applied to the System fields.

After the detail section has been specified, you can design the Page Header section. The text for the column labels can be placed over the appropriate data. The Page Header section often uses the System data fields: page number, system name, date, and time. Choose Field > Insert New Field > System Field to open the Select System Field dialog box (Figure 301).

Figure 301 Select System Field dialog box

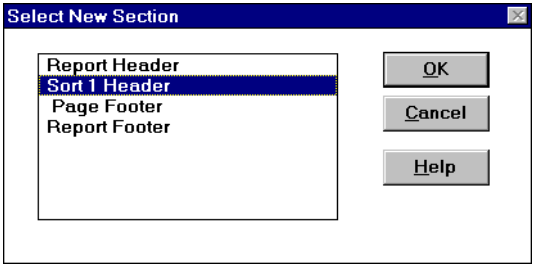


The Page, Date, Time, and System_Name fields are commonly used in the Page Header section. Other system fields are discussed in the section titled "Some special techniques" on page 627.

Decide if the report lines should be sorted

Many reports require the data to be sorted. Since there is no sort information on a new report form, choose Section > New Section. The Select New Section dialog box opens (Figure 302). Select Sort 1 Header in the dialog box. This adds a sort section to the report.

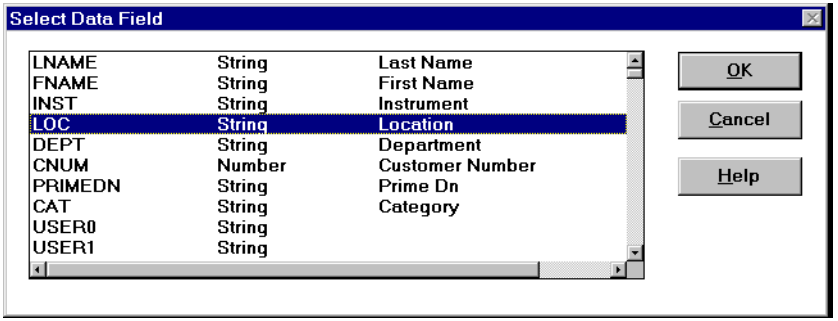
Figure 302 Select New Section dialog box



The first sort section specifies the data field that provides the primary ordering of the data. The data value to use for sorting will be selected from the list of data fields.

Other sort sections are applied only to provide secondary order levels within the primary ordering. To order a report by alphabetizing the names of people in a department, the report should use Department for Sort 1 Header, LastName for Sort 2 Header, and FirstName for Sort 3 Header.

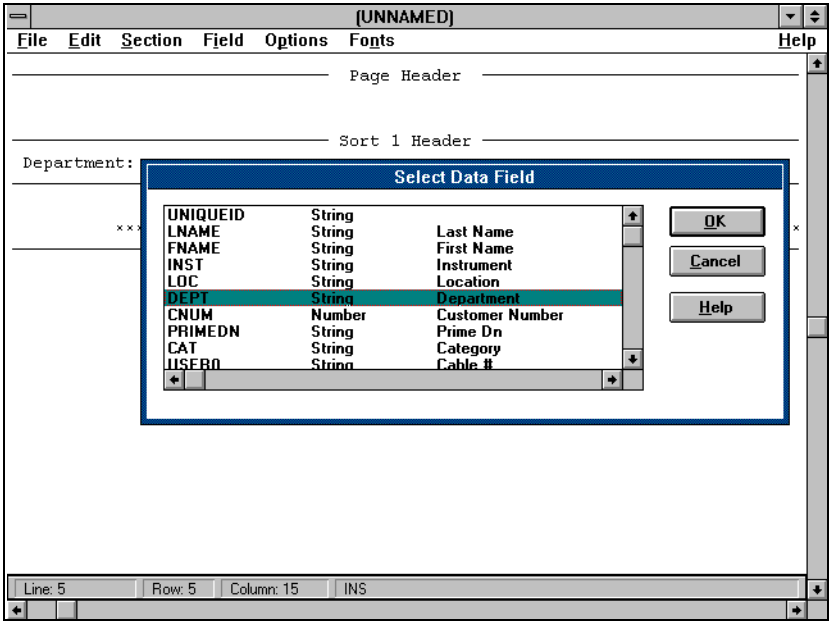
Figure 303 Select Data Field dialog box



To modify a Sort Header after it has been specified, choose Section > Sort Field. (It will only be available if the cursor is positioned in a Sort Header.) From this dialog box, press Sort Field to display the list of data fields (Figure 303).

Summary information can be specified in the Sort Fields, as well. On a report sorted by department, it is possible to print each department name once, by specifying the Department field in the Sort Header section and not in the Detail section (Figure 304).

Figure 304 Adding summary information in the Sort Header section



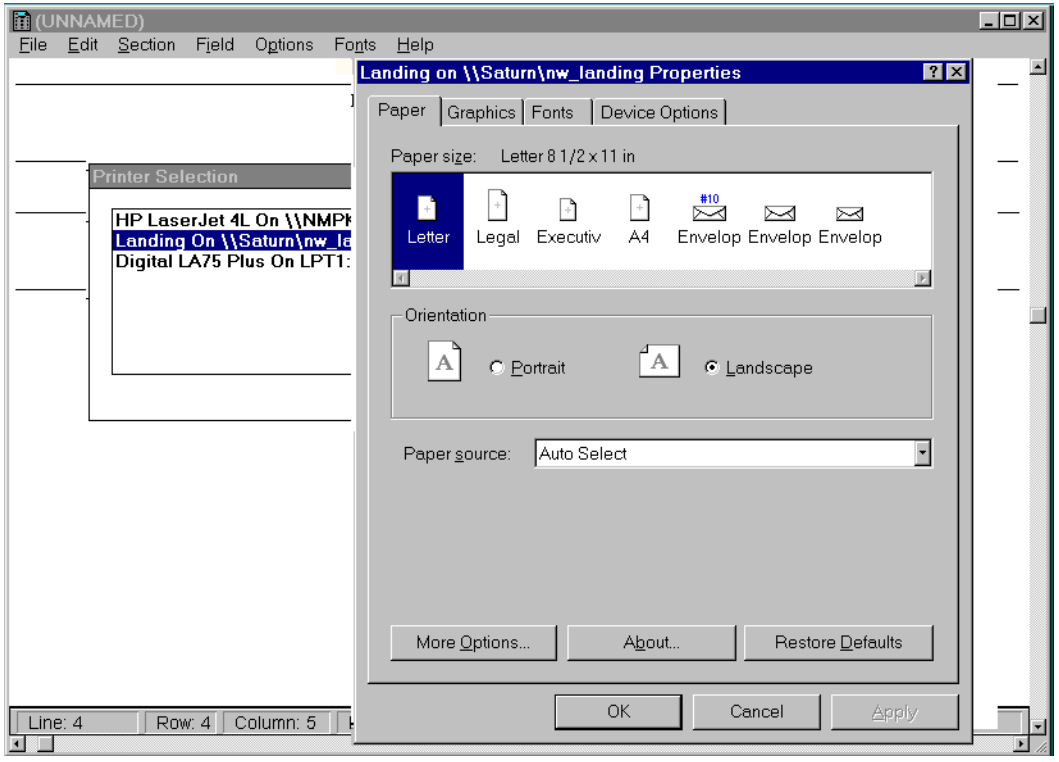
The Sort Header section prints only when the Sort Header's field value changes. It uses the data field on the first record in the new sort group. Typically, the data field chosen to print in the Sort Header should be the same field on which the data are being sorted.

Specify any special printer considerations for this report

The Report Generator allows each report form to contain special printer information. Some reports might be designed to print in landscape mode, while others should print in portrait mode. Some reports may require a special printer (an impact printer with special forms, for example).

Choose File > Print Setup to select a printer and press the Properties button to specify special print instructions (Figure 305).

Figure 305 Printer Properties dialog box



This information is stored with the form so that it applies each time the report is printed. When the Report Generator actually builds the report from the form and the data, you can override this printer information.

Apply the finishing touches

The Form Editor provides some additional capabilities to tailor the report. As you examine the almost complete report, you may want to modify the appearance of the report.

Lengthening and shortening data fields

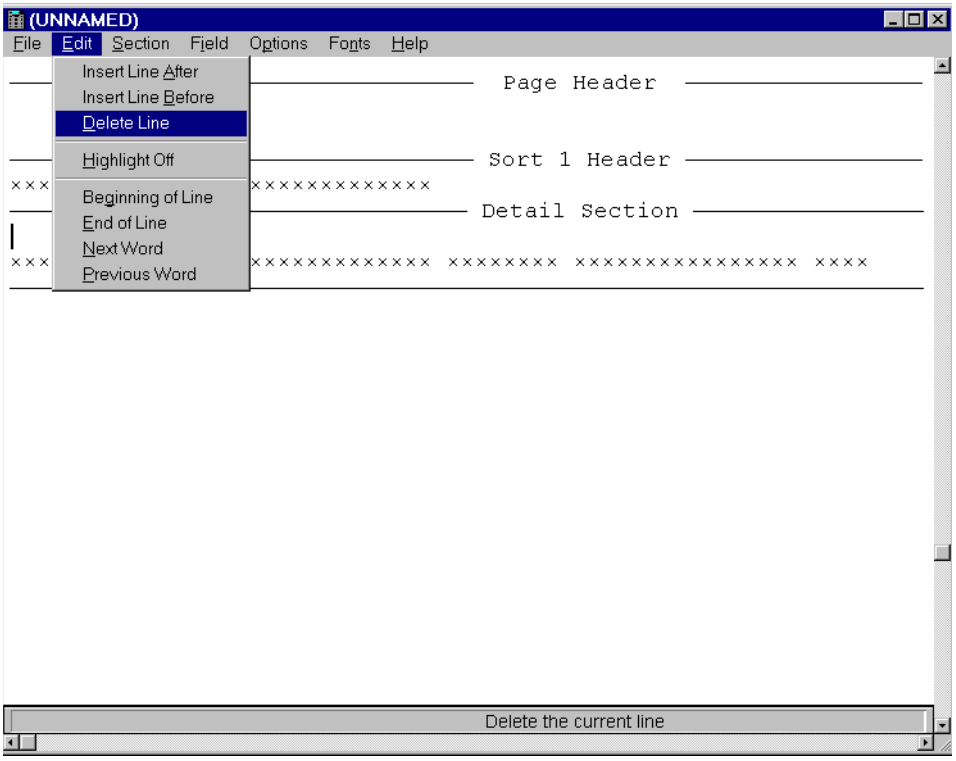
You can adjust the width of the data fields in the report. The area for each data field is marked on the form with the small letter “x”. The data is printed in that marked area. If the actual data is longer, it will be truncated to fit in the area; if it is shorter, the rest of the marked area is filled with blanks. In the example report, you must lengthen the area set aside for the calculated field which holds the name. You may want to shorten a field to try to squeeze another field onto the report.

To adjust the width of a data field, place the cursor in the marked area. To shorten the field, press <Delete> or <Backspace>. To widen the field, press any other key. It appears on the form as the small letter “x”.

Adding and deleting blank lines

The Form Editor allows you to add and delete blank lines on the report. On a new form, the data in the Detail section is, by default, double-spaced. To make a single-space report, position the cursor on the extra blank line and choose Edit > Delete Line (Figure 306).

Figure 306 Deleting a blank line from the Detail section



Other items in the Edit menu allow you to insert blank lines either above or below the line on which the cursor currently rests.

Report Parameters

There are a few more options available to complete the report. Choose Options > Report Parameters to specify the name of the report as it will appear in the list of available reports. It also allows you to specify margins and other report -wide options.

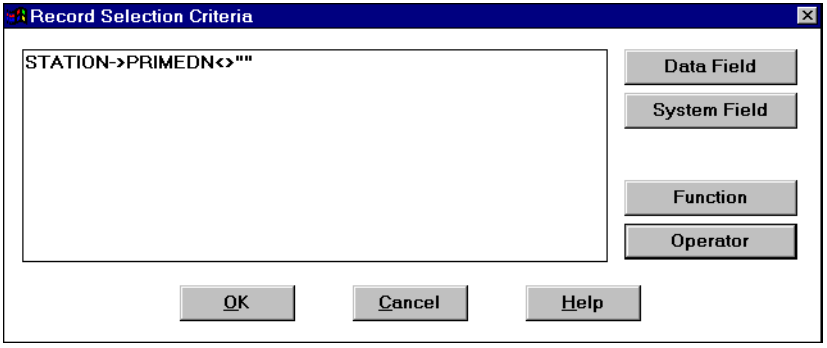
The Print Trial Records is used for reports that require that the paper be correctly aligned in the printer. It has no effect until you send the report to the printer. At that time, the Report Generator asks whether it should print a Trial Report. The Trial Report contains the Header and Footer sections and a single line from the

Detail Section. Each data field is replaced with a string of the letter “X” of the appropriate length. You are asked to print the Trial Report until you click No. This allows you to adjust the paper in the printer until it is properly aligned. Then the full report can be printed.

Report Filter

The Report Filter selects which records are to be included in the report. Choosing Options > Report Filter displays the Record Selection Criteria dialog box (Figure 307). This dialog box helps you to build an expression, typically from the data fields. As the Report Generator reads each record in the database, it evaluates the expression. When the expression is true, the record is included in the report.

Figure 307 Record Selection Criteria dialog box



The Record Selection Criteria dialog box operates very much like the Calculation Field dialog box. However, you should build an expression, usually including a comparison operator (=, >, <, <>). In the example, you are selecting all records for which there is a Prime DN. The expression tests whether the PrimeDN field is not equal (<>) to blank (“ “).

Modifying fields

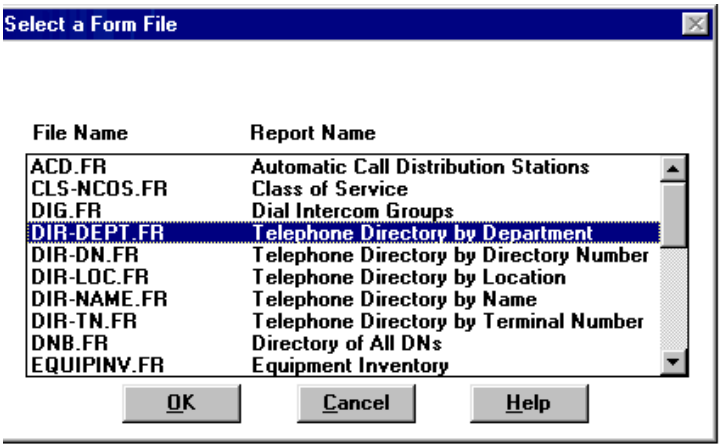
As part of the final tuning, you may want to specify more exactly how the fields are to be displayed. Choose Field > Edit Current Field.

The Alignment options operate within the area of the data field, marked by the letter “x”. The Wrap options should apply when the field will not fit in the area allowed. The section titled “Some special techniques” (page 627) discusses how to wrap text. Similar display options, such as whether to use commas, control the printing of numeric fields.

Save the report and test the results

With the initial specification of the form complete, it is time to save the form and test it with the data from the system. Choose File >Save or File > Save As to save the form. Choosing File > Close returns control to the Report Generator. To test the form, choose Report > Run Report and select the report form you want to run (Figure 308).

Figure 308 Select a Form File dialog box



The Select a Form File dialog box uses the report names specified in the Form Editor’s Option/Report Parameters dialog box. If you did not specify a name for a new form, this list displays the file name. If you modified an existing form and saved it with a new file name but did not change the Report Name, that Report Name appears twice. In this case, you should go back into the Form Editor to give your modified report a new Report Name.

As you run the report, you may find that you want to modify the form. From the Report Generator choose Form > Open Existing Report Format to return to the Form Editor and modify the form.

Some special techniques

The following are a few special techniques available in the Form Editor to help you customize your reports:

Sort Header section /Break Field

If the cursor is placed in a Sort Header section, the Section > Break Field menu item is enabled. The Break Field is a data field that causes the Sort Header section and the Sort Footer section to print. By default (and almost always) the Break Field is the same as the Sort Field that was specified when the Sort Header section was created.

Word wrap

If the data field will not fit in the area allowed for it on the form, you can specify that the field should wrap. By default, data which will not fit in the allotted space will be truncated. Wrapping is especially useful for a field like ADN (the list of all Directory Numbers assigned to a station), which can be either quite long or quite short.

Wrapping the data field requires two steps:

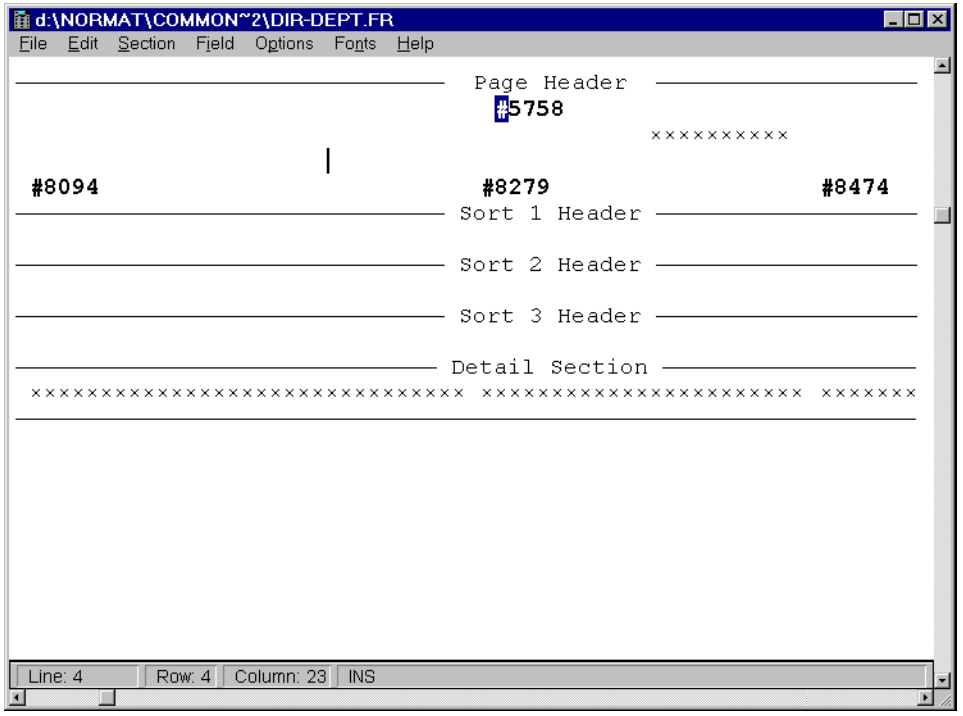
1. Mark the field as one that should be wrapped using the Field/Edit Current Field dialog box. (Wrapping only applies to text fields.) Choose the Wrap Text box to cause the field to wrap at a word.
2. Specify where to position the wrapped portion of the field. Position the cursor directly below the field that is to be wrapped and choose Field - Insert New Field - System Field.

You can include several overflow areas directly below each other. If you wish to include the line for the overflow only if it is needed, choose Section - Edit Current Section. This dialog box includes an option to Suppress Blank Lines that only prints the line with the Wrap_Overflow field if it is used.

Modifying a standard report

If you choose to modify one of the standard reports distributed with OTM, you will notice that there are numbers in the headers instead of text (Figure 309). These numbers allow the reports to translate automatically to another language.

Figure 309 Example Report



To see the actual text within the Form Editor, position the cursor on the octothorp character (#) and choose Field > View Field Translation. A box displays the text that appears on the printed report.

A quick description of some section types not used in the example

Sort Footer section: Data fields placed in the Sort Footer section can be used like summary data in the Sort Header section. The fields in the Sort Footer section are only printed if the value changes (except that it prints after the detail lines). In addition, Sort Footer data can contain totals and other summary statistics. After placing a data field in the Sort Footer, you are prompted with a list that contains Value (to print the value from the last record in the group) or various summary statistics (include Total, Average, Count, Max, Min). These summary statistics also can be specified by choosing Field > Edit Current Field in the Footer Field box.

Report Header, Report Footer: These sections can be used to specify data that should print only once at the beginning or the end of the report.

Power User tool

The standard OTM Station Administration window allows you to easily add or modify a few stations at a time. However, creating or maintaining large groups of stations quickly (as when establishing a new system) is better handled using the Power User tool.

The Power User Forms window minimizes the actions required to add a station, eliminates up-front configuration of line cards and numbering plan, and allows you to create specialized installation *forms* that include only the station fields that you decide you need to configure stations.

Note: At any time while using the Forms window, you can press <F1> for online reference information on the current field.

Concepts for the Power User tool

The concepts of *forms*, *templates*, and *filters* are important to understand before using the Power User tool.

Forms and templates

A *form* (a file that you can design) acts as a *filter* to determine which fields (of the hundreds possible) are displayed in the Power User Forms window for you to edit. When it's time to use the form, you fill in the station values as needed for the first station, save them, and move to the form for the next station in the group that you are adding. You create a form file (a list of only those station-definition fields you want to see in the order in which you want to see them) using the Forms Editor.

A *template* places default values in some of these fields to save you the repetitive task of adding the same value to station after station. You create a template file (a partially filled-in station) using the template view in the Station Administration module.

Note: The function of templates is identical in the standard Graphical User Interface and the Forms Interface.

This means that a form, used in conjunction with a template, provides you with a station-definition window including only those fields that you want to edit, and with many fields already configured by the template with values of your choosing.

To lessen clutter on the screen, the fields configured by the template do not appear. This means that you work with only those fields that must be “personalized” for this station. You do not waste time moving through already configured fields.

You view and edit these station-configuration fields in the Forms Interface window.

Filters

There are hundreds of fields for a station, yet you are probably interested in only a few. The Form File that you define acts as a filter to allow only the fields of interest to appear in the forms interface station definition window.

OTM automatically performs a second filtering to determine which of the station fields defined in the Form File actually apply to the current station. This *applicability* filter is based upon Meridian 1 or Succession CSE 1000 system data (software release, option packages, customer options), and the telephone type assigned to the current station.

There are two important benefits to this applicability filter, as follows:

- Form files are independent of systems, and, therefore, X11 software release, options packages, and customer options.

  For example, a form file may contain fields that apply to X11 Release 20, but not to Release 19. You can safely use this form with Release 19 systems, since the Release 20 fields do not appear.

- Form Files are independent of station types

  A single Form File can include both single line features (FTRs) and multi-line keys. If the form is used to display a single line station, then the FTRs (but not the keys) appear. If the same form is used to display a multi-line station, then the keys (but not the FTRs) appear.

Using the Power User Forms interface

You use the Forms interface to add one or many stations to a system, as described in this section. "Designing forms and templates using the forms editor" on page 648 describes the process of creating forms and templates.

Forms interface window buttons

The following buttons appear at the top of the Forms interface window:

- **OK**: (Single station adds only) Saves the current station and closes the window.
- **Next**: (Multiple station adds only) Saves the current station, and opens the next blank station form.
- **Previous**: (Multiple station adds only) Saves the current station and opens the previously-created station.
- **Cancel**: Cancels any changes to the current station and closes the window. Any stations created before the current station while using this form are still in place.
- **Validate**: Validates all current station values.
- **Print**: Prints a short form for the current station. This printout shows all values in the station, not just those on the form. (This is a quick way for you to check the value of a field not on the form.)
- **Help**: Opens Windows Help.

Forms interface message bar

The message bar at the bottom of the window has two panels. The left panel provides a description of the current field. The right panel displays hint text for the current field (for example, the hot keys to invoke the DN and TN lists where appropriate).

Keyboard shortcuts

In the procedures that follow, keyboard shortcuts are shown in brackets.

Adding a single station or template

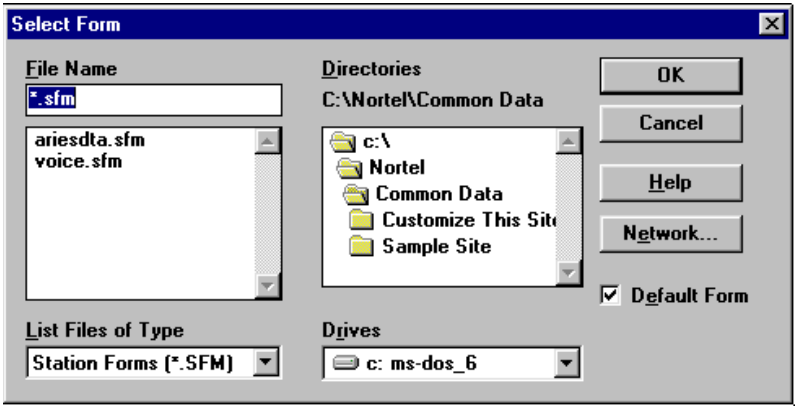
1 Choose Forms > Forms Interface.

This is a toggled menu item. Click it to place a check mark next to the name (selects it), and click it again to remove the check mark (deselects it).

2 Choose Forms > Select Form.

The Select Form dialog box opens (Figure 310). This is a standard Windows file open dialog box.

Figure 310 Select Form dialog box



3 OTM provides the following example forms for you to use in creating forms that meet your needs:

- ARIESDTA.SFM: Designed for M2xxx and M3xxx data stations.
- VOICE.SFM: Designed for all types of voice stations (single and multi-line).
- Default form: A general-purpose form that includes most station fields. This is a good starting point for a form with many fields. You choose to use this form by selecting the Default Form check box.

4 Select the form from the list box, or select the Default Form check box. Click OK.

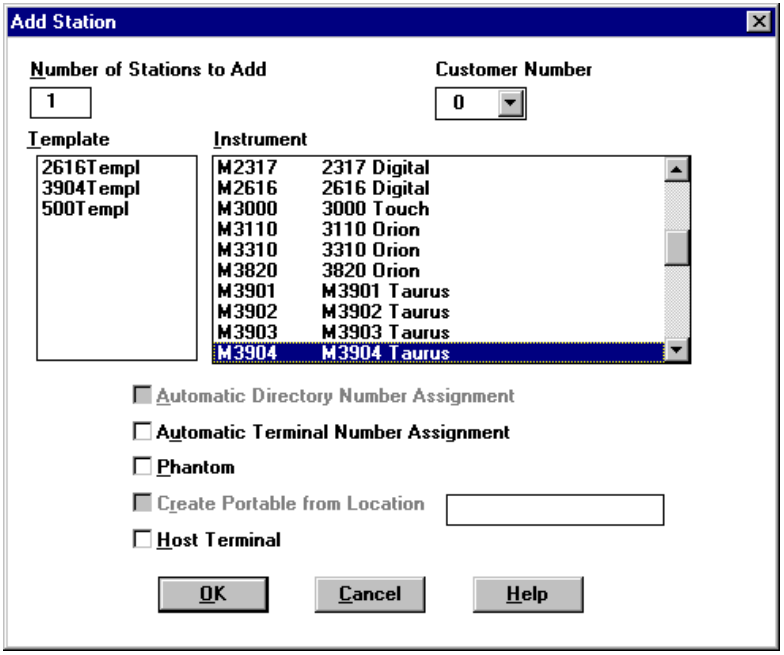
5 Choose View > Station to add a station or select Template to add a template.

The existing stations (or templates) for the system appear in the OTM Station Administration window.

6 Choose Edit > Add.

The Add Station dialog box (or Add Template dialog box) opens (Figure 311).

Figure 311 Add Station dialog box



7 If you are adding stations, follow these steps:

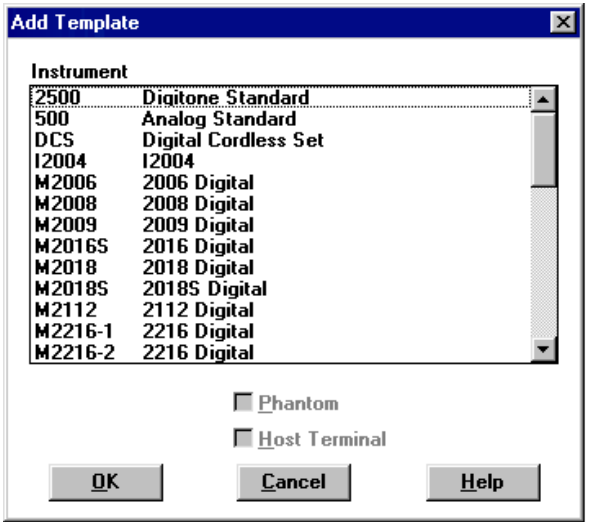
- Enter “1” in the Number of Stations to Add field.
- Select the Customer Number in the pull-down box.
- Choose a template or instrument.

  If you choose a template, some fields are filled in with the default values that you chose when designing the template.

- Click the check boxes to automatically assign DN or TN, as desired.
- Click the Phantom check box to add a virtual station, or click the Host Terminal check box to add a host station for the Meridian 1 Virtual Office Feature available on M3900 Series telephones.

8 If you are adding a template, select a template from the list (Figure 312).

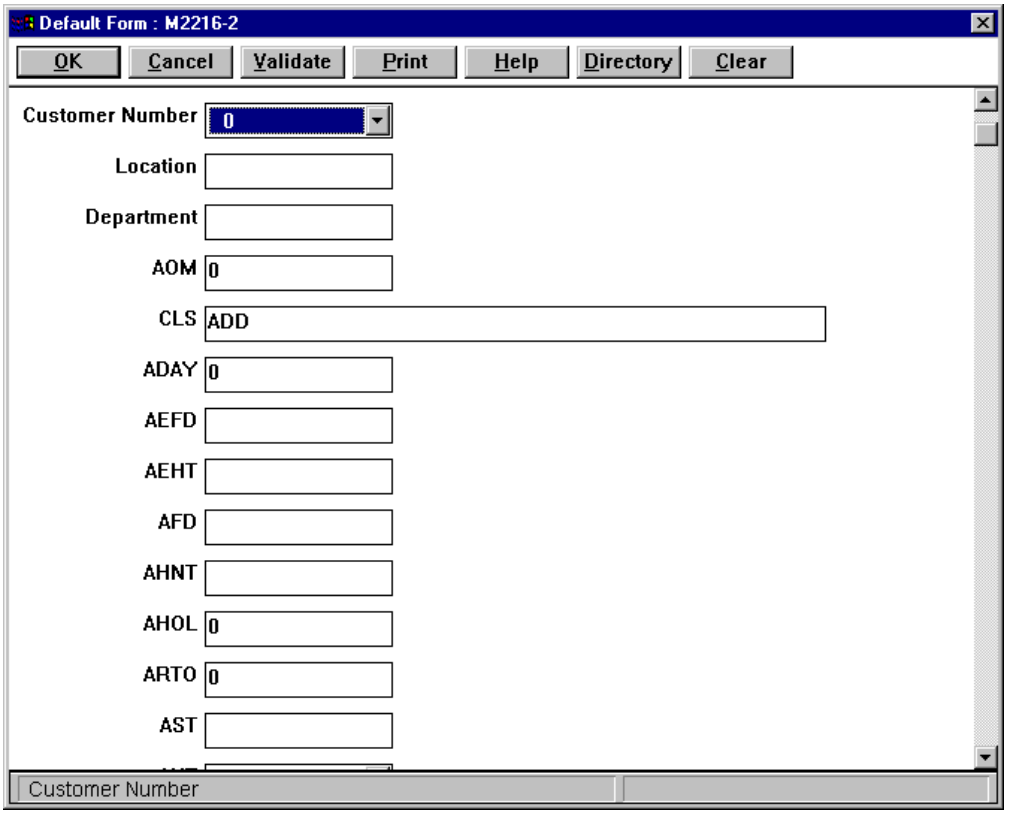
Figure 312 Add Template dialog box



9 Click OK to open the Forms Interface window.

The single station add form opens (Figure 313).

Figure 313 Single station add form



10 Fill in the fields as described in "Station fields" on page 640.

11 When you have entered all desired values, click OK.

This saves the station and closes the forms interface window.

12 For stations: If OTM is in Maintenance mode, the synchronization dialog box appears. Fill in the dialog box in the same way as with the standard interface. Click OK.

To invoke synchronization manually if you are in Installation mode, use the Sync menu.

Updating a single station (or template)

1 Choose Forms > Forms Interface.

This is a toggled menu item. Click it to place a check mark next to the name (selects it), and click it again to remove the check mark (deselects it).

2 Choose View > Station.

(To modify a template, select Template.)

The existing stations (or templates) for the system appear in the OTM Station Administration window.

3 In the OTM Station Administration window, double-click the station (or template) of interest.

The single station add form (or the template add form) opens.

4 Modify the fields as required.

5 Click OK.

6 For stations: If OTM is in Maintenance mode, the synchronization dialog box appears. Fill in the dialog box in the same way as with the standard interface. Click OK.

To invoke synchronization manually if you are in Installation mode, use the Sync menu.

Adding multiple stations

1 Choose Forms > Forms Interface.

This is a toggled menu item. Click it to place a check mark next to the name (selects it), and click it again to remove the check mark (deselects it).

2 Choose Forms > Select Form.

The Select Form dialog box appears. This is a standard Windows file open dialog box (Figure 321).

OTM provides the following predefined forms:

- ARIESDTA.SFM: Designed for M2xxx and M3xxx data stations
- VOICE.SFM: Designed for all types of voice stations (single and multi-line).

- Default form: A general-purpose form that includes all station fields. This is a good starting point for a form with many fields. You choose to use this form by selecting the Default Form check box.

  OTM provides these predefined forms as starting points for your own special-purpose forms. You can create forms that include just the fields you need, and templates that set values that you define. See "Creating a new form" on page 648, and "Editing an existing form" on page 650.

3. Select the form from the list box or select the Default Form check box. Click OK.
4. Choose View > Station.

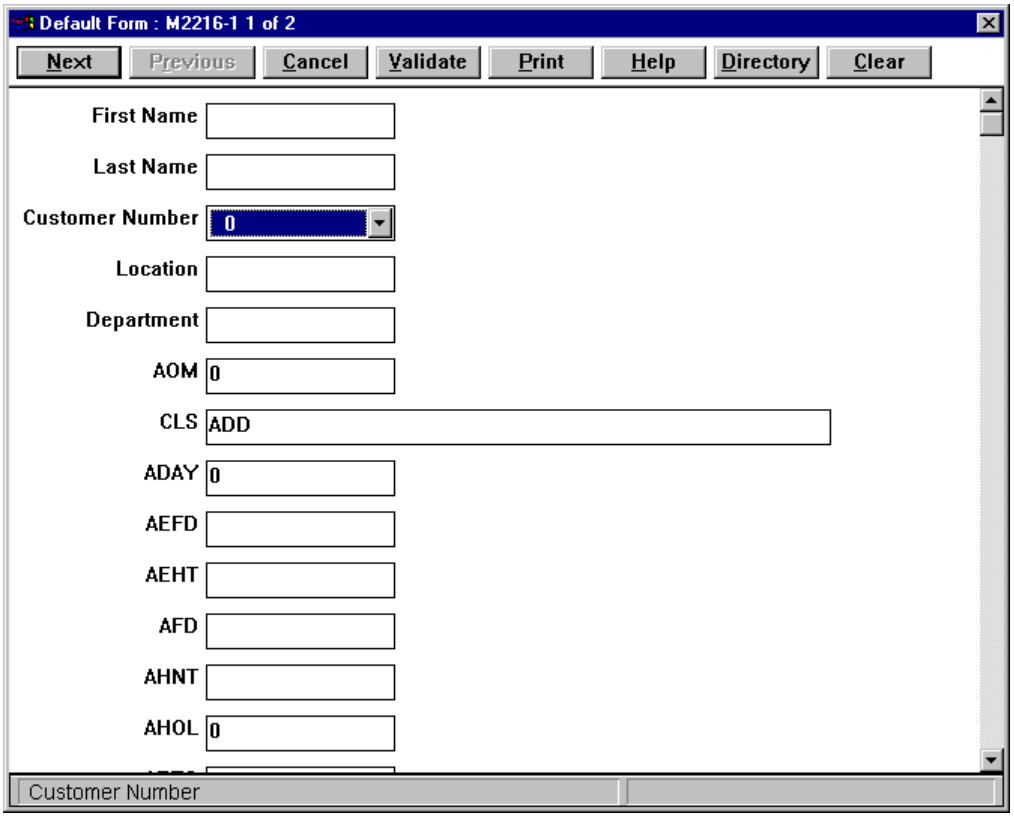
   The existing stations for the system appear in the OTM Station Administration window.
5. Choose Edit > Add.

   The Add Station dialog box opens.
6. Enter the number of stations that you want to add.
7. Select the Customer Number in the drop-down box.
8. Choose a template or instrument.

   If you choose a template, some fields are filled in with the default values that you chose when designing the template.
9. Click the check boxes to automatically assign DN or TN, as desired.
10. Click OK to open the Forms Interface window.

    The multiple station add form opens (Figure 314).

Figure 314 Multiple station add form (default form)



11 Fill in the fields as described in "Station fields" on page 640.

12 When you have entered all desired values, click Next.

This saves the station and opens the next blank station form. The Next button changes to a Finish button while you edit the last station in the group. The Finish button saves the station and closes the forms interface window.

13 If OTM is in Maintenance mode, the synchronization dialog box appears. Fill in the dialog box in the same way as with the standard interface. Click OK.

To invoke synchronization manually if you are in Installation mode, use the Sync menu.

Validating station data

You can validate by field or by station, same as the standard interface. In addition, you have the option to relax numbering plan and hardware validations to ease the process of adding multiple stations at one time.

Field validation

The current field is automatically validated when you move to another field. If the validation fails, an error message appears, and the focus returns to the erroneous field.

Station validation

In the Forms Interface window, click Validate to validate all values for the station. This performs the same operation as when you choose File > Validate.

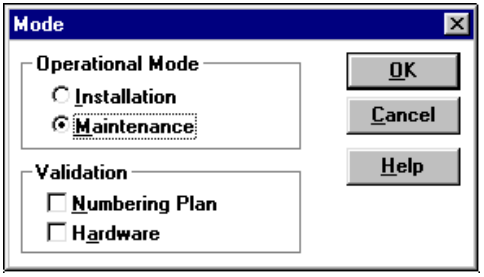
Validating the numbering plan and hardware

You can relax the numbering plan and hardware validation when you choose Options > Mode and adjust the items in the Mode dialog box (Figure 315) as follows:

- Turn off numbering plan validation. This allows you to assign a DN not defined in the numbering plan, without generating an error.
- Turn off hardware validation. This allows you to assign a TN for which there is no corresponding circuit card, without generating an error.

Note: These validation settings affect both the forms interface and the standard interface.

Figure 315 Mode dialog box



Station fields

This section provides detail on the station fields that you fill in using the Forms Interface.

Online Help

At any time while using the Forms window, you can press <F1> for online reference information on the current field.

Types of station field

The following basic types of station fields can appear in the Forms Interface:

- Class of service
- Multi-line keys
- Single line features (FTRs)
- Prompts: These are all fields that do not fall into one of the above categories (for example, TN, NCOS, and TGAR).

Class of service field

The Class of service control appears as a CLS text box, which can contain multiple values (the approach taken by LD 10 and LD 11). Enter all CLS mnemonics for this station in the CLS text box.

You can enter multiple mnemonics for the same class of service in the CLS text box (for example, CFXA and CFXD). In this case, whichever mnemonic appears last (furthest to the right) takes precedence. This is consistent with the operation of LD 10 and LD 11.

The values of some Class of service fields may not be visible on the form when it appears. Instead, the form shows only those classes of service that are not equal to default values. You can modify this partial configuration by adding new mnemonics or changing existing ones.

Press <Fl> while within any class of service field for a complete list of class of service mnemonics in Windows Help format.

Printing the class of service configuration

The Print button on the form window allows you to print a short form that shows the complete class of service configuration.

Multi-line keys

Keys for multi-line stations appear as drop-down boxes containing all key mnemonics. As you move through the list of mnemonics, the key description appears in the message bar at the bottom of the window. Additional parameter controls appear automatically if a mnemonic requires them (and for FTRs set to Yes).

You can also type a mnemonic directly into the box. OTM tracks your typing and automatically enters the first matching key (and any associated parameter controls).

Alternately, type the first letter of the mnemonic, followed by the down arrow key. The selection moves to the mnemonic starting with that letter. Press the down arrow key again to scroll down the list starting at that point.

Single line FTRs

FTRs appear as drop-down boxes containing the choices Yes and No. You can also type directly into the box. Additional parameter fields appear automatically if you set an FTR to Yes. When you move the cursor into a parameter field, the parameter description appears in the message bar at the bottom of the window.

Prompts

Prompt fields appear as either drop-down lists or as edit boxes, depending on the type of the field. Fields with a small number of predefined values appear as drop-down lists (for example, FCAR and DTR). Numeric fields and other fields with a wide range of possible values appear as edit boxes (for example, DES and FDN).

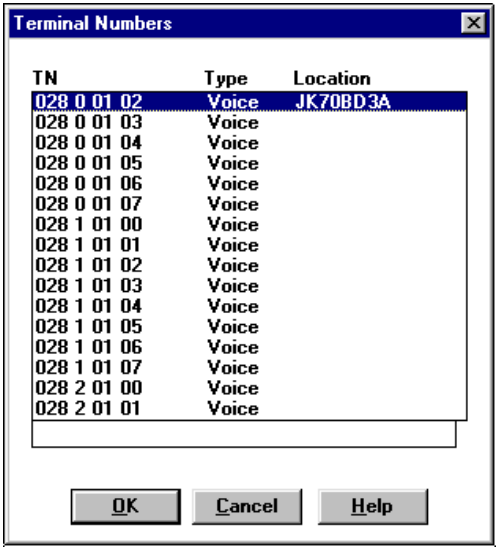
DN and TN fields

DN and TN fields allow you to use lists of values to fill in the fields. In addition, extra fields appear as needed to allow you to enter parameter values.

TN fields

When you edit a field with a TN type value, press <Ctrl> T (or double-click in the field) for a list of Terminal Numbers compatible with the current station type (Figure 316).

Figure 316 Terminal Numbers value list



DN fields

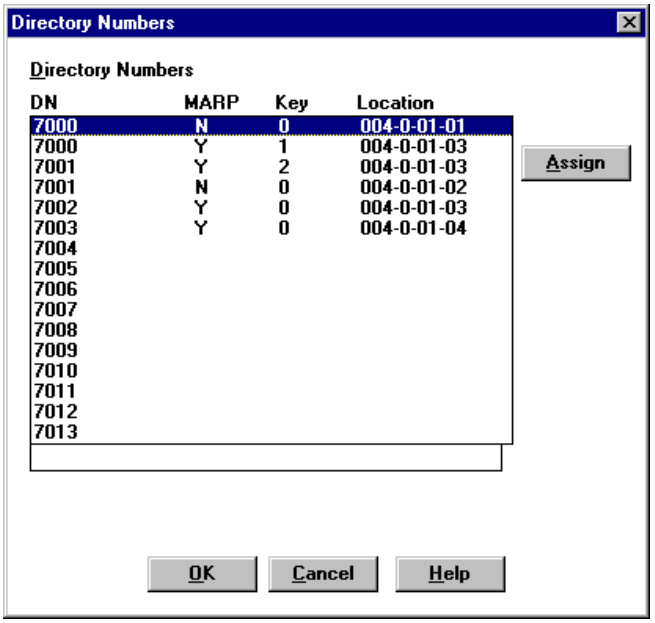
In addition to station fields, you need to modify fields that are not directly associated with the current station, but which are associated with DNs that appear on the station. You can use the following DN fields in the forms interface:

- MARP
- CPND
- VMB

Note: DN data is applicable to stations only, not templates. Therefore, the MARP, CPND, and VMB controls described below appear only on a form when operating on stations. Templates do not actually have DNs. Even if a template is configured with a fully specified DN, no DN record will be added to the database until a station is created using the template. Therefore, at the time a template is created, there is no way to store any DN data.

Press <Ctrl> D while in a DN field (or double-click in the field) for a list of Directory Numbers (Figure 317). In the standard interface, MARP, CPND, and VMB appear as buttons on the DN list dialog box. In the forms interface, MARP, CPND, and VMB appear as fields on the main form.

Figure 317 Directory Numbers value list



MARP

The MARP drop-down list appears below the DN field with which it is associated. Multiple appearance DNs can have values of Yes or No. Single appearance DNs can have a value of Yes. The MARP field appears below the DN field of a single-line station and below the following multi-line keys:

- MCN
- MCR
- PVN
- PVR
- SCN
- SCR
- HOT_L_2WAY

- HOT_D_2WAY

Note: The following Meridian 1 releases do not support MARP; therefore, MARP does not appear on their forms:

- North American releases 14 and 17
- International release 16.9X G

CPND

The CPND name field is a single drop-down list (additional fields appear to the right if you choose a CPND value that requires them) (Figure 318). A CPND field appears below the DN field of a single line station, as well as below the following multi-line keys:

- MCN
- MCR
- SCN
- SCR

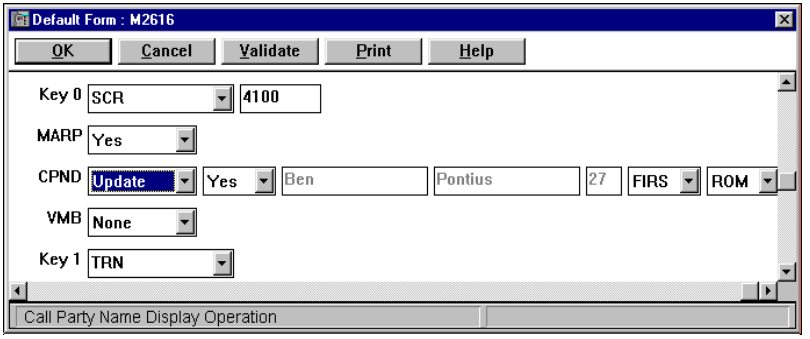
You can choose one of the following values from the drop-down list:

- **None**: Performs no CPND operation
- **Add**: Creates a new CPND name (appears only if no name exists yet for the DN)
- **Delete**: Removes an existing CPND name
- **Update**: Modifies an existing CPND name

CPND parameter fields

As you move the cursor into a parameter field, the parameter description appears in the message bar at the bottom of the window (Figure 318).

Figure 318 CPND parameter fields



The following parameter fields appear to the right of the CPND field when you choose a value other than None:

- **Get from location**: Drop-down list containing Yes and No
- **First name**: Text box
- **Last name**: Text box
- **Expected length**: Text box. This field is only added if the name has Sync Status NEW, and static allocation is enabled in the CPND Administration module.
- **Format**: Drop-down list containing FIRS and LAST
- **Language**: Drop-down list containing ROM and KAT. This field appears only if package 211 (Multi-language CPND) is enabled for the system.

Some additional attributes of the name controls follow:

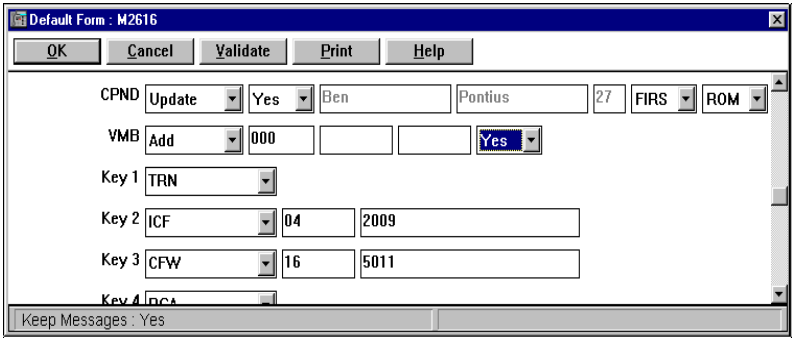
- If the Get From Location field is Yes, then the First Name and Last Name controls are dimmed and disabled, and contain the name from the First Name and Last Name fields of the station.
- If the operation is Delete, then the additional name controls are dimmed and disabled. This allows you to view the name which is to be deleted, but not to modify it.

Note: CPND depends on package 95 (Call Party Name Display). If package 95 is not enabled for a Meridian 1 or Succession CSE 1000 system, the CPND field does not appear on the form.

VMB

VMB appears initially as a drop-down list (additional fields appear as needed) (Figure 319).

Figure 319 VMB fields



A VMB appears below the DN field of a single line station, and below the following multi-line keys:

- MCN
- MCR
- SCN
- SCR

The drop-down list contains the VMB operation to be performed, and allows the following values:

- **None**: Perform no VMB operation.
- **Add**: Create a new VMB (appears only if no VMB exists yet for the DN).
- **Delete**: Remove an existing VMB (appears only if a VMB does exist).
- **Update**: Modify an existing VMB (appears only if a VMB does exist).

If you select an operation other than None, then additional fields appear to the right of the VMB field. The additional fields are listed below in the order in which they will appear from left to right:

- Class of service (text edit field)
- Second DN (text edit field)

- Third DN (text edit field)
- Keep messages (drop-down list containing No and Yes). This control is only added if the voice mailbox has Sync Status NEW.

As you select a VMB field, the description appears in the message bar at the bottom of the window. Additional parameter fields appear automatically if a VMB requires them.

If the VMB operation is Delete, then the additional fields are dimmed. This allows you to view the VMB that is to be deleted, but not to modify it.

Note: VMB depends on package 246 (Voice Mailbox Administration). If this package is not enabled for a Meridian 1 system, then the VMB fields do not appear on the form.

Note: VMB is not applicable to Succession CSE 1000 systems.

Designing forms and templates using the forms editor

The OTM application assumes that station Form Files are located in the Common Data subdirectory, using a ".SFM" file extension. You can, however, place these form files anywhere you want.

OTM provides the following predefined forms:

- **ARIESDTA.SFM**: Designed for M2xxx and M3xxx data stations.
- **VOICE.SFM**: Designed for all types of voice stations (single and multi-line).
- **Default form**: A general-purpose form that includes most station fields. This is a good starting point for a form with many fields. Instead of selecting this form in the file-selection box, you select this form by selecting the Default Form check box.

Creating a new form

To create a form, perform the following steps:

1 Choose Forms > Forms Interface.

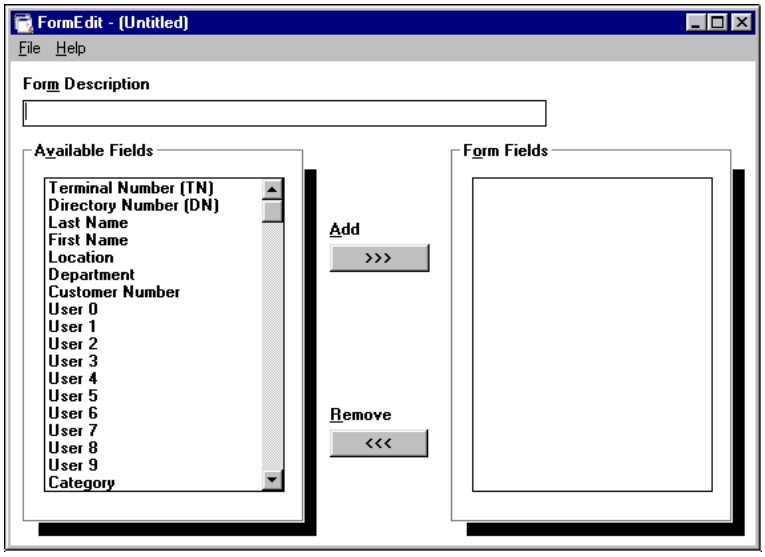
2 Choose Forms > Edit Custom Form.

The FormEdit window appears.

3 Choose File > New to open a new form.

The FormEdit window appears with no fields in the Form Fields list.

Figure 320 FormEdit window for a new form



4 From the Available Fields list, select the first field you want to include in the form, and click Add.

The field moves to the Form Fields list.

Alternately, you can select one or several fields to drag from the Available Fields list to the Form Fields list.

5 Move all the desired fields to the Form Fields list.

To change the order of the fields, click and drag items up or down in the list.

To remove an item from the list, click and drag from the Form Fields list to the Available Fields list, or select the item and click Remove.

6 When the Form Fields includes all the desired fields in the correct order, type a descriptive phrase in the Form Description text box.

This is a phrase to help you remember the form's usage, not the filename.

7 Choose File > Save to save the form file.

The Save As dialog box opens, allowing you to name the new form. Enter a filename and click OK.

Alternately, to exit the forms editor without saving the form, choose File > Close. A warning box asks whether you wish to save the changes before exiting the editor.

Editing an existing form

To edit an existing form, follow these steps:

1 Choose Forms > Forms Interface.

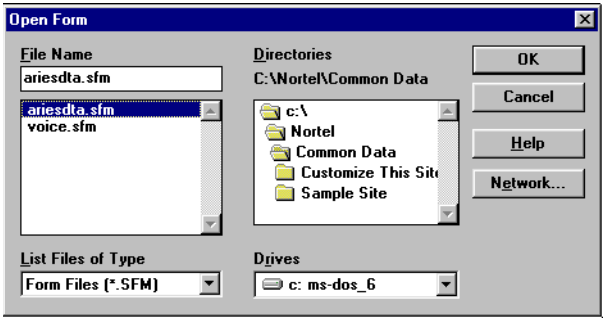
2 Choose Forms > Edit Custom Form.

The FormEdit dialog box appears.

3 Choose File > Open to install a form.

The Open Form dialog box opens (Figure 321).

Figure 321 Open Form dialog box



OTM provides the following predefined forms:

- **ARIESDTA.SFM**: Designed for M2xxx and M3xxx data stations.
- **VOICE.SFM**: Designed for all types of voice stations (single and multi-line).

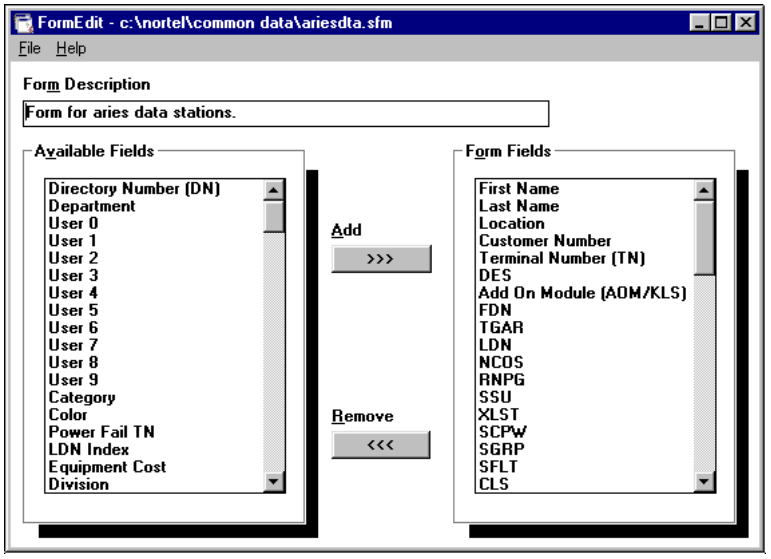
- **Default form**: A general-purpose form that includes most station fields. This is a good starting point for a form with many fields. You choose to use this form by selecting the Default Form check box.

Note: The sample forms provided with OTM are a good starting point for customized forms that you may want to create. Be sure to rename the forms when you save them. Subsequent versions of OTM will use the default filenames, so any files you create that use the default file names are overwritten during the next reinstallation or upgrade.

4 Select the form from the list box. Click OK.

The FormEdit window opens (Figure 322).

Figure 322 FormEdit window (M2xxx and M3xxx data stations)



5 From the Available Fields list, select the field you want to include in the form, and click Add.

The field moves to the Form Fields list.

Alternately, you can select one or several fields to click and drag to move from the Available Fields list to the Form Fields list.

6 Move all the desired fields to the Form Fields list.

To change the order of the fields, click and drag the item up or down in the list.

To remove an item from the list, click and drag from the Form Fields list to the Available Fields list, or select the item and click Remove.

7 When the Form Fields includes all the desired fields in the correct order, type a descriptive phrase in the Form Description text box.

This is a phrase to help you remember the form's usage, not the filename.

8 Choose File > Save As to save the modified form file.

Alternately, to exit the forms editor without saving the form, choose File > Close. A warning box prompts whether you want to save the changes before exiting the editor.

Chapter 5
Alarm management

Overview

OTM alarm management provides an alarm collection and processing center for multiple systems and devices. OTM receives SNMP traps from systems, such as Meridian 1 systems, Succession CSE 1000 systems, and Call Pilot, and stores them in a circular log file on the OTM Server. The OTM Alarm Notification application monitors the incoming traps and notifies the appropriate people of important events and alarms.

Alarm management components

OTM alarm management has the following components:

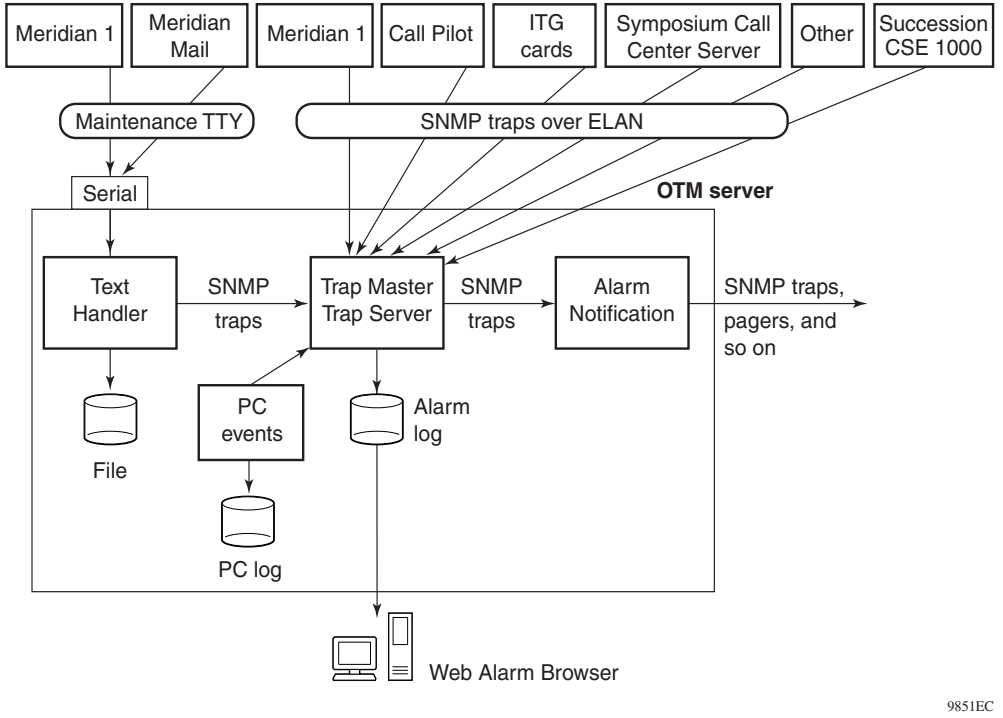
- A web-based alarm browser server that supports the viewing of alarms from multiple systems and devices. HTML Help is provided for individual alarms.
- A Windows alarm browser (Event Monitor) you use to view Meridian 1 or Succession CSE 1000 system specific alarms. Windows Help is provided for individual alarms.
- An Alarm Notification application that provides a scripting language to generate notifications on selected incoming traps. Notification types include pagers, e-mail, and the forwarding of SNMP traps to an upstream processor (such as Optivity NMS). Notification is triggered by trap data, such as alarm severity, device type, and time of day. A Script Wizard application simplifies the creation of Alarm Notification scripts.

- A Text Handler application that parses maintenance TTY output and generates traps on selected error messages. This is intended primarily for legacy Meridian 1 systems (Release 21 and earlier) and Meridian Mail systems that cannot generate traps. Text Handler rules can be created by the user to support other serial devices.
- A PC Event Log and Viewer for viewing events and alarms generated on the OTM Server and all of its Windows clients. This Windows application can also generate SNMP traps based on the event severity level.

Figure 323 shows the main components of OTM alarm management. The Trap Master is responsible for handling the SNMP traps from the systems and storing it on the server for retrieval by the Alarm Browser client. The Trap Server distributes traps to applications registered to receive traps, such as Alarm Notification.

The Trap Master and Trap Server are run as Windows NT Services on the OTM Server.

Figure 323 OTM alarm management main components



Alarm management configurations

OTM is the collection point for alarms from Meridian 1 and Succession CSE 1000 workgroup devices. It provides an integrated system view of these alarms. It also provides a gateway to monitor, access, and correct faults for those devices.

You can configure OTM alarm management to met the needs of different users. Typically, there are three levels of administrative responsibilities:

- A single system such as the Meridian 1 or Succession CSE 1000
- Multiple systems in one or more sites
- A large network of voice and data products

The following sections provide an overview of how OTM alarm management can meet the needs of these different users.

System and device level management

You can configure the Meridian 1 or Succession CSE 1000 system to send SNMP traps to the OTM Server (X11 Release 22 and later for the Meridian 1). You can also configure the Meridian 1 or Succession CSE 1000 system to filter the traps being sent (for example, only send critical alarms to OTM). The user responsible for the Meridian 1 or Succession CSE 1000 system can use the OTM Windows Alarm Browser to see all the Meridian 1 or Succession CSE 1000 system events and alarms.

You can configure other Meridian products to send traps to OTM. OTM can recognize these traps and provide help for individual alarms. Refer to the respective product documentation for current software release and configuration procedures for the following Meridian products:

- IP Telephony Gateway (ITG)
- Call Pilot
- Symposium Call Center Server (SCCS)
- Meridian Mail 13

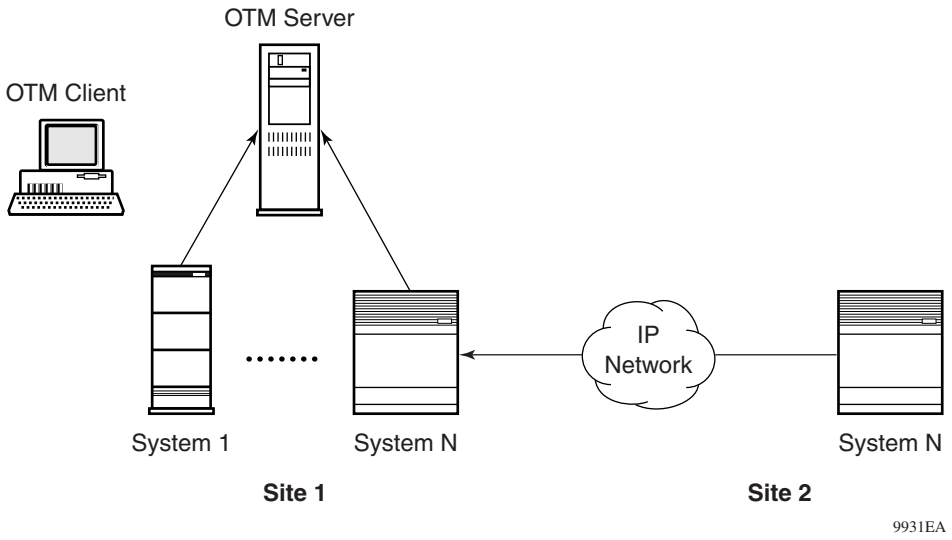
The user responsible for these devices can use the OTM Web Alarm Browser to display alarms from a single device.

Site level management

OTM collects alarms from multiple devices in one or more sites. You can use the Web Alarm Browser to view all of these alarms.

Use the Alarm Notification application when critical alarms occur to identify the notices that are sent and to whom they are sent. Figure 324 shows devices transmitting alarms to the OTM Server.

Figure 324 Site alarms



Network level management

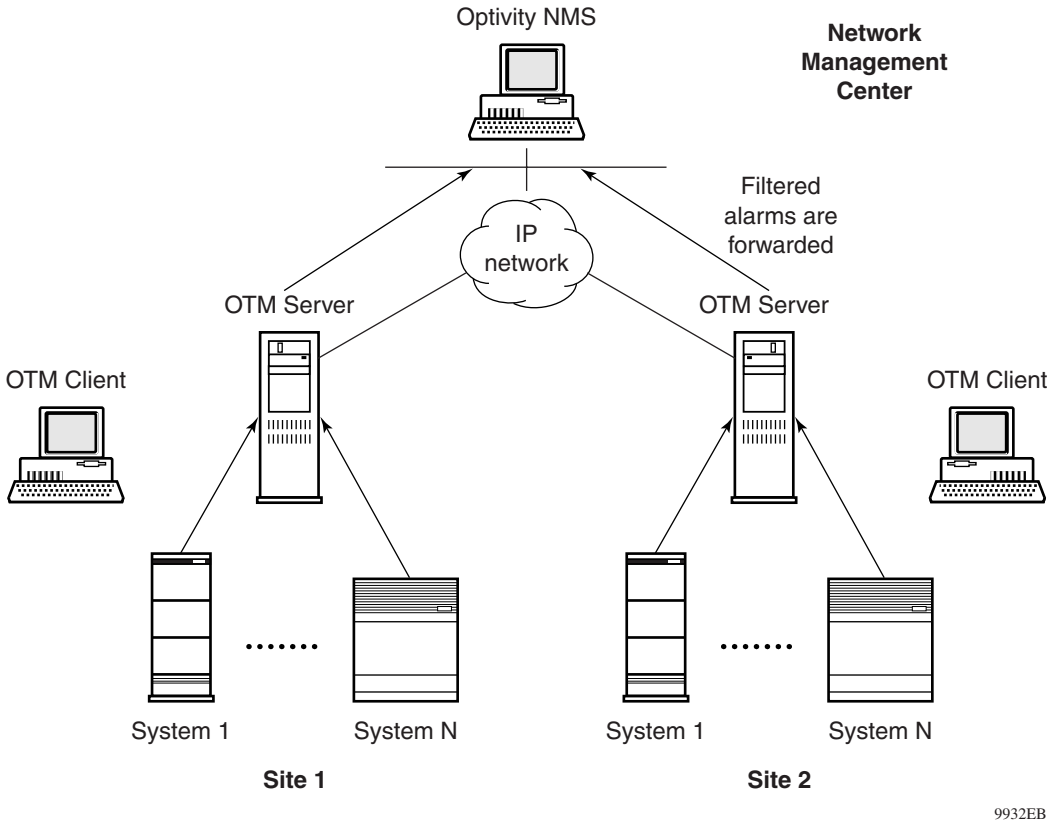
The devices represented in Optivity NMS are OTM Servers that manage individual Meridian 1 and Succession CSE 1000 voice elements. The OTM Servers are manually added to the Optivity NMS network by the administrator. OTM is integrated with Optivity NMS 9.0.1 and later.

The OTM Alarm Notification application reformats, filters, and forwards traps to Optivity NMS. Because OTM forms the main representative agent for Meridian 1 systems, Succession CSE 1000 systems, and related voice devices, all alarms received by Optivity NMS result in the change of status state of OTM depicted in the Optivity NMS InfoCenter. The traps are reformatted into the open alarm II format. Typically, only critical alarms are forwarded to Optivity NMS.

When Optivity and OTM coreside on the same server, the OTM trap system disables its Trap Server and instead sends traps to the Optivity Trap Server.

Figure 325 shows alarms being forwarded from OTM Servers to Optivity NMS.

Figure 325 Network alarms



Optivity NMS InfoCenter

Optivity NMS InfoCenter graphically displays internetworking device fault status in color. Other Optivity NMS applications are available to help you identify the source of the fault.

You can configure the Optivity Telephony Manager as an object in InfoCenter, representing the Meridian 1 and Succession CSE 1000 systems that it manages. OTM-connected systems forward faults to InfoCenter. The fault color represents the fault status of the device.

The applications that you can open for a device depend on the settings in the Application Launch application. For more information on using Application Launch, see the Optivity NMS Application Launch online Help system.

To resolve faults on switches managed by an OTM server, launch the OTM application. This starts a web browser session with the OTM server. You can then access the web applications available on the server through the OTM Web Navigator.

The Path Trace feature discovers and displays the connections between resources in the network, including physical and logical paths, and also graphically identifies faults.

The Fault Summary feature displays the faults (or traps) for a single device, multiple devices, or the entire network. Based on the information provided, you can use other Optivity NMS applications to take corrective actions.

Web-based alarm management

Web-based alarm management provides a list of alarms and events from multiple systems and devices.

Alarm Browser page

The Alarm Browser page is used to retrieve, view, sort, and view help on alarms received by the OTM Server.

Log in to the Alarm Browser

To view the alarms for all systems monitored by OTM:

1 Log in to OTM from the Administrator Login page.

The OTM Administrator Current Status page opens.

2 Choose Equipment > System Alarms.

The Alarm Browser page opens. This page displays the alarms for all systems monitored by OTM.

To view the alarms for a single system monitored by OTM:

1 Log in to OTM from the Administrator Login page.

The OTM Administrator Current Status page opens.

2 Choose Equipment > System Navigator.

The System Navigator page opens. This page displays the systems managed by OTM.

3 Select the system for which you want to view alarms.

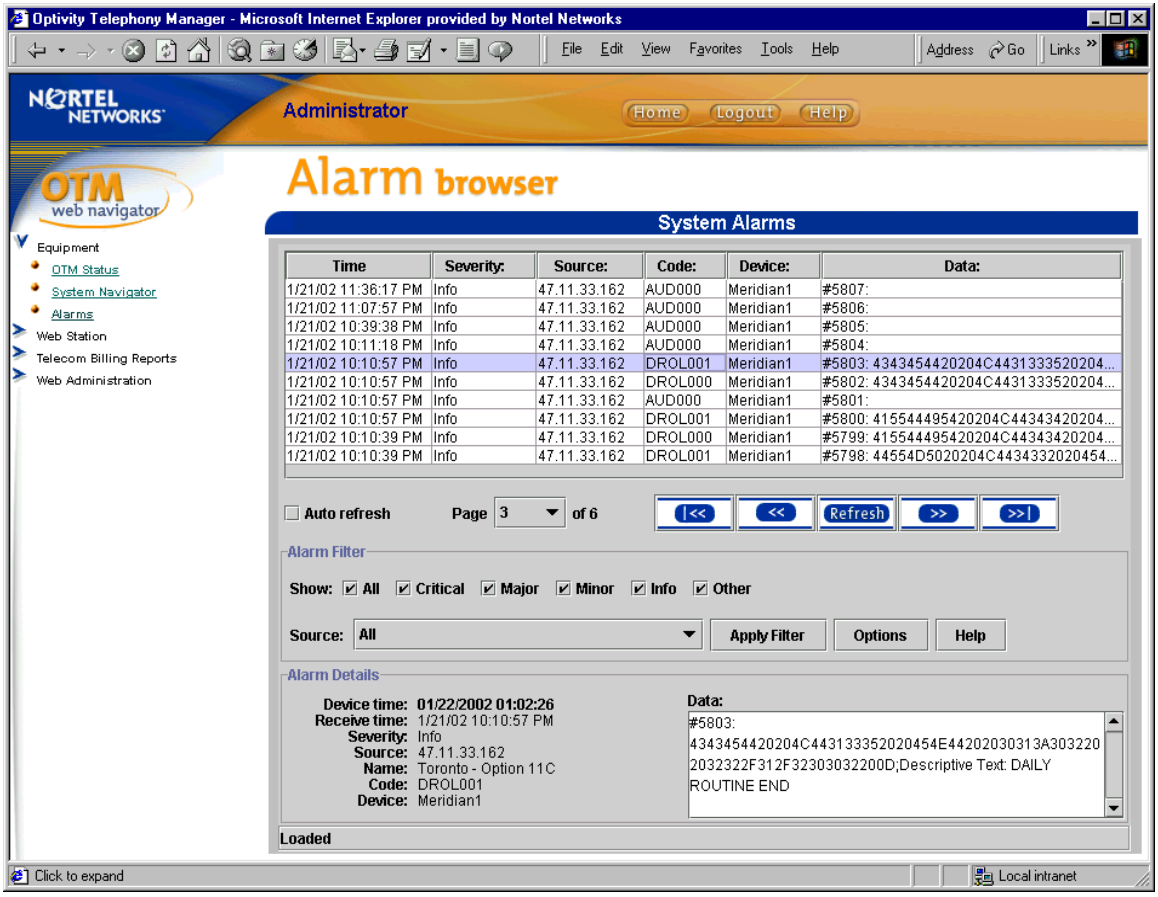
4 Choose Applications > Alarms.

The Alarm Browser page opens (Figure 326). This page displays the alarms for the selected system.

You can perform the following actions within the Alarm Browser page:

- Filter the list based on severity and system.
- Page through the list.
- Sort the alarms.
- Resize a column to see more information.
- View Help on an alarm.

Figure 326 Alarm Browser page



The list of alarms is not dynamic. Use the OTM Alarm Browser Options dialog box (Figure 327) to set the auto refresh interval and select the number of alarms to be displayed on each page.

System Alarms table

The System Alarms table in the Alarm Browser page (Figure 326) displays six fields associated with each alarm entry. These fields are Time (received), Severity, Source, Code, Device, and Data. Click the appropriate column heading to sort the entries by the field of your choice. Double-click the alarm entry to display online Help for the alarm.

Alarm Filter pane

Use the Alarm Filter pane in the Alarm Browser page (Figure 326) to select alarm severity, monitored system, and to set Alarm Browser options.

Select alarm severity and monitored system

Use the Show check boxes to select the severity of the alarms that are to be retrieved from the OTM Server. You may select the All check box or any combination of the other five check boxes.

Use the System drop-down list to select the system to be monitored. You may select All to view alarms from all systems, including all the devices configured in the *Devices.txt* file.

The default selections are all systems and all alarms.

When the status of a check box is changed or a new selection is made from the System drop-down menu, the change is reflected in the next auto refresh or when the Refresh or Apply Filter buttons are clicked. The Refresh and Apply Filter buttons initiate a new retrieval and reset the polling timer.

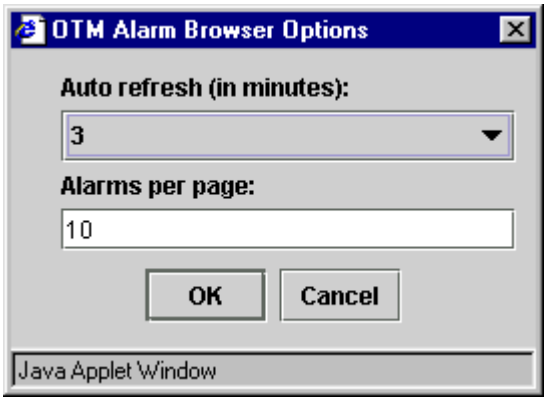
Set Alarm Browser options

To set the Alarm Browser options:

1 Click Options in the Alarm Filter pane.

The Alarm Browser Options dialog box opens (Figure 327).

Figure 327 Alarm Browser Options dialog box



2 From the drop-down list, select a refresh interval between 3 minutes and 10 minutes. The default value is 3 minutes.

Note: The Auto refresh check box in the System Alarms pane of the Alarm Browser page must be checked for auto refresh to occur.

3 Enter the number of alarms you want OTM to display on each alarm browser page in the Alarms per page box. The number must be in the range 10–100. The default value is 10 alarms per page.

4 Click OK.

Note: The settings in the Alarm Browser Options dialog box and the Alarm Filter pane are temporary. These settings revert to the default values when the browser is closed and reopened.

Alarm details

When an alarm entry is selected, the alarm information and data associated with the alarm appear in the Alarm details pane of the Alarm Browser page (Figure 326).

The left side of the Alarm details pane displays the complete information for the selected alarm.

The Operator data box contains all other data for the selected alarm. In addition to operator data, this box may include expert data and sequence number.

Status bar

The status bar at the bottom of the Alarm Browser page provides a visual indication that new alarms are being retrieved from the OTM Server.

Note: To view information about the menus, toolbar, column headings, and other functions available on the Alarm browser page, use Help.

Windows-based alarm management

Alarm management consists of a number of components that improve handling of system-generated alarms and events. On Meridian 1 systems, alarm management is only available for systems running X11 Release 22 or later that are configured with the alarm management package (296).

The Meridian 1 and Succession CSE 1000 alarm management components are:

- Text Handler
- Alarm Banner dialog box
- Events Monitor window

Text Handler

For older Meridian 1 systems, you can use the Text Handler to parse maintenance TTY output and generate traps on error messages. The Text Handler is intended primarily for Meridian 1 systems running X11 Release 21 and earlier and for Meridian Mail systems that cannot generate traps. You can also use the Text Handler to create rules to support serial devices. The Text Handler is a part of the Database Buffering and Access (DBA) application. Refer to "Data Buffering and Access" on page 239 for details.

Alarm Banner dialog box

You can determine system status by reviewing the history file to look for problems, and by issuing a number of status commands in various overlays to look for disabled or faulty hardware. The Alarm Banner dialog box automatically alerts you to this information in a simple, direct manner.

The Alarm Banner dialog box alerts you to new critical alarms and gives you the count of all new alarms. To learn more about an alarm, you can open the Events Monitor window. If there are no alarms, you can log out or leave the Alarm Banner displayed and go on to another task.

When a new critical alarm arrives, the system beeps if the notification option has been set, and the Alarm Banner title bar icon and Events Monitor window task bar icon flash. The flashing continues until you click anywhere in the Alarm Banner dialog box or Events Monitor window.

Opening the Alarm Banner dialog box

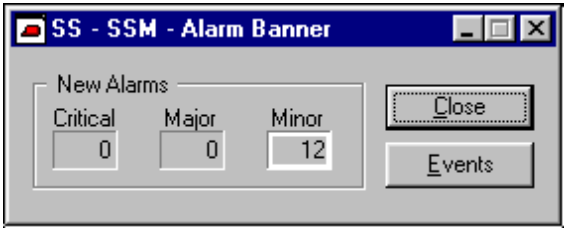
To open the Alarm Banner dialog box:

➔ Do one of the following:

- Choose Maintenance > Alarm Banner.
- Double-click the Alarm Banner icon in the System window toolbar.

The Alarm Banner dialog box opens (Figure 328).

Figure 328 Alarm Banner dialog box



The items in the Alarm Banner dialog box are described in Table 30.

Table 30 Alarm Banner dialog box items

Item	Description
Critical	An alarm that requires your immediate attention.
Major	An alarm that needs your attention.
Minor	An alarm that you can address anytime.
Close	Closes the dialog box.
Events	Displays more information about the events that triggered the alarms.

The Alarm Banner keeps you informed about the current status of the system. You might typically check the current status of the system for the following reasons:

- Standard operating procedure (for example, check every morning)
- Investigating a suspected or reported problem
- Checking and monitoring the system while performing other tasks

Alarm Banner notifications

The primary function of the Alarm Banner is to notify you when a new alarm arrives in the following ways:

- The outline of the boxes displaying the critical, major, and minor alarm counts flash to indicate the arrival of new alarms.
- The event counts in the Alarm Banner are incremented appropriately.
- One or more beeps sound. This is optional. See "Creating an Event Preference definition" on page 674.

Note: The Events Monitor window must be active for the beep to sound.

- If you have closed the Alarm Banner dialog box, the sound notification is provided by the Events Monitor window. The window is not brought to the front, because this may interfere with your current task.

There is no alarm notification beep if the sound has been disabled. The count field outline still flashes and the count increments to indicate the arrival of a new alarm.

Events Monitor window

The Events Monitor window displays the Meridian 1 or Succession CSE 1000 system's Event Log, allowing you to view all recent system alarms and events previously stored in the Meridian 1 or Succession CSE 1000 system's history file. The Events Monitor window displays active events in a way that lets you quickly view the most important events. System events with a severity of critical, major, or minor are considered alarms—alarms are events which may require some corrective action. System events with a severity of Info are for informational purposes only and are not considered alarms.

Note: The Event Log is preserved during and after a sysload and initialization of a Meridian 1 or Succession CSE 1000 system.

Using the Events Monitor window

Once you open the Events Monitor window, you can do the following:

- Obtain a description of an event.
- Acknowledge an alarm you intend to clear—this communicates your intention to others who may be working on the system.
- Locate an alarm in the Event file to identify the cause of the problem.
- Learn more detail about an alarm.
- Mark an alarm as cleared in the list after you have corrected the problem.
- Change system event preferences for all subsequent alarms:
  - Severity of the alarm
  - Escalation threshold for an alarm type

Opening the Events Monitor window

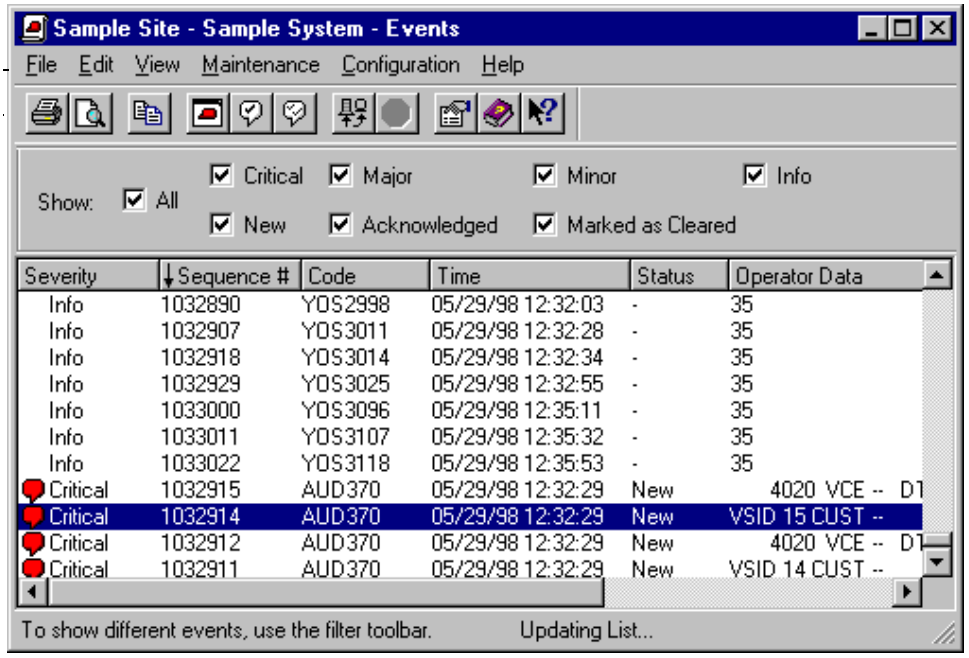
To open the Events Monitor window:

➔ Choose Maintenance > Events.

If you are not connected to a Meridian 1 or Succession CSE 1000 system, the connection login window appears.

Once you have connected, the Events Monitor window appears (Figure 329).

Figure 329 Events Monitor window



An event remains displayed in the list until expired by the Meridian 1 or Succession CSE 1000 system. The column headings identify and describe the events.

Note: To view detailed information about the menus, toolbar, buttons, and other functions available in the Events Monitor window, use online Help.

Sorting the event list

Alarms and events are listed in order of occurrence. You can sort the list according to another column by clicking in that column heading. This is useful for prioritizing your work when you deal with a large number of alarms.

Click to sort in ascending order; click again for descending order. An arrow in the column heading indicates the current sort column and sort order.

Resizing a column in the event list

If the data does not all fit in a column, you can resize a column by dragging the column divider. You can also choose File > Properties to display complete information about a selected event.

Double-click an alarm, or click What's This to see reference information in Windows Help.

New critical alarms are indicated by an icon located to the left of the word "Critical" in the Severity column. The icon disappears when the alarm is acknowledged.

Using the shortcut menu

When you right-click an alarm, a shortcut menu opens. Table 31 describes the shortcut menu commands.

Table 31 Shortcut menu commands

Command	Description
Copy an alarm	Copies selected events to the clipboard. You can then insert the text into another document. Copy is unavailable when no text is selected.
Select All alarms	Selects all events in the list. You can print the selected text or copy it to the clipboard and insert it into another document.
Acknowledge an alarm	Changes the status of the selected alarm to Acknowledged. This informs technicians on other OTM systems that the problem is being investigated.
Mark as Cleared	Changes the status of the selected alarm to Marked as Cleared. This informs users on other OTM systems that the problem is solved.
Learn the Properties of an alarm	Displays complete information about the selected event.
What's This? general help option	Changes the cursor to a "question mark" cursor and displays help on the next item you select.

Event list

The event list provides information about each active alarm. You can resize a column by dragging the column divider to make more room for text. Table 32 describes the event list columns.

Table 32 Columns in the event list

Column	Description
Severity	The alarm severity (critical, major, or minor) or a non-alarm event (info). An icon indicates an unacknowledged critical alarm.
Sequence	All events are given a unique sequence number.
Code	A code that identifies the event. It includes the error category (for example NWS) and a 5-digit error number.
Time	The date and time that the alarm occurred.

Table 32 Columns in the event list (continued)

Column	Description
Status	Current alarm status (appears with a dash "-" for non-alarms). New indicates an alarm has not been acknowledged or cleared. Acknowledged indicates an alarm in the process of being cleared. Marked as Cleared indicates the alarm has been manually cleared.
Operator Data	Data produced by the equipment that generated the event. Its contents may vary. Typically, it includes a description of the event and the equipment affected (component ID information, such as the loop number or TN).

Determining the cause of an alarm

An alarm may be caused by another system event, such as a BUG message. By examining the events immediately preceding an alarm, you may be able to isolate the source of the problem. Use the scroll bar to browse through the event list.

To display Help on a selected alarm:

➔ Do one of the following:

- Right-click on an alarm and choose Learn the Properties of an alarm from the shortcut menu.
- Double-click the alarm.

Acknowledging an alarm that you plan to clear

You can acknowledge a new alarm to inform others that you will investigate the problem and clear the alarm. Your acknowledgment appears in the Status column of the event list. The events are updated for all OTM users.

Note: You cannot acknowledge, or mark as cleared, events with a status of Info. You cannot acknowledge alarms that have been marked as cleared.

To acknowledge an alarm:

1 Select the desired alarm(s) in one of the following ways:

- Click to select a single alarm.
- [Shift]+click to select a range of alarms.
- [Ctrl]+click to select multiple alarms.
- Choose Edit > Select All to select all alarms.

Note: You can usually save time by displaying the type of alarm of interest using the Filter bar before selecting individual alarms.

2 Change the status to acknowledged in one of the following ways:

- Choose Maintenance > Acknowledge.
- Right-click and choose Acknowledge an alarm from the shortcut menu.

Once you acknowledge an alarm, the Status field for all selected alarms in the Events Monitor window is marked “Acknowledged.”

Marking an alarm as cleared

After you fix a problem, you typically mark the associated alarm as cleared. The term *Mark as Cleared* is used because clearing an alarm only indicates that the problem has been fixed—it does not actually fix the problem.

To mark an alarm as cleared:

1 Select the desired alarm(s) in one of the following ways:

- Click to select a single alarm.
- [Shift]+click to select a range of alarms.
- [Ctrl]+click to select multiple alarms.
- Choose Edit > Select All to select all alarms.

Note: You can usually save time by displaying the type of alarm of interest using the Filter bar before selecting individual alarms.

2 Change the status to acknowledged in one of the following ways:

- Choose Maintenance > Mark as Cleared.
- Right-click and choose Mark as Cleared from the shortcut menu.

3 Click OK to confirm.

Acknowledgment and clearing of alarms is optional. You can clear alarms without first acknowledging them. If you do not clear alarms, the oldest alarms are deleted by the system when it reaches the maximum number of alarms.

Note: Nortel Networks recommends that you clear alarms as you fix problems so that the Events Monitor window accurately reflects the state of the system. Events with a status of Info cannot be acknowledged or marked as cleared. Alarms that have been marked as cleared cannot be acknowledged.

When you clear an alarm, the following happens:

- The Alarm Status field for all selected alarms is updated in the System Event File with "Marked as Cleared."
- The counts in the Alarm banner dialog box are adjusted appropriately for all users.

Getting details about an alarm

To learn more about selected alarms:

➔ Do one of the following:

- Choose File > Properties.
- On the toolbar, click Properties.
- Double-click on an alarm to see online Help information.

Changing alarm severity or escalation

To specify the severity of events (critical, major, minor, or info) on a per-system basis:

➔ Choose Configuration > Event Preferences.

The system uses an Event Default Table that predefines the severity of all events. Typically, you modify these settings only when you install or upgrade the system. See "Creating and customizing event preferences" on page 674.

Viewing the Event Default Table

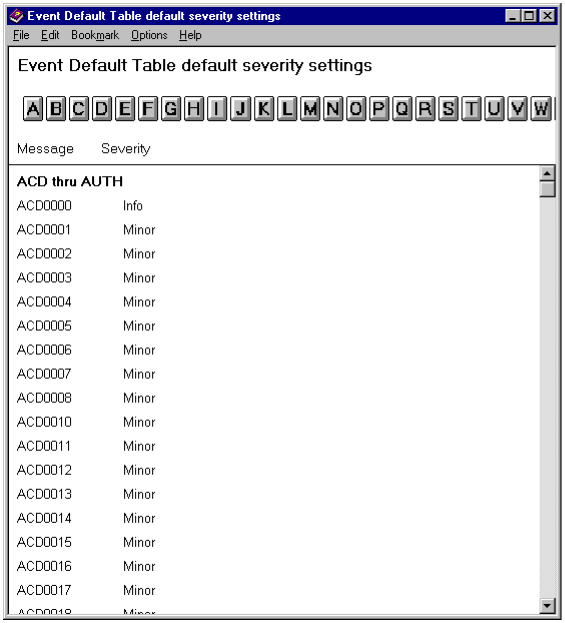
The Event Default Table contains the default severity settings of all system events. Use the table to verify default settings before you add event preferences.

To display the Event Default table:

1. Choose Configuration > Event Preferences.
2. Choose Event Default Table from the Help menu in the Event Preferences window.

   The Event Default Table window opens (Figure 330).

Figure 330 A portion of the Event Default Table window



Creating and customizing event preferences

You can change alarm severities for this system by changing the default alarm severity and escalation threshold using the Event Preferences window. The escalation setting defines the maximum number of times an event can occur within a defined period of time before it escalates to the next higher level of severity. For example, if you set escalation to "10 occurrences in 1 minute" for a minor alarm, the alarm escalates to a major alarm when it occurs more than 10 times within a 1-minute period. See "Creating an Event Preference definition" on page 674 for steps describing how to set escalation parameters.

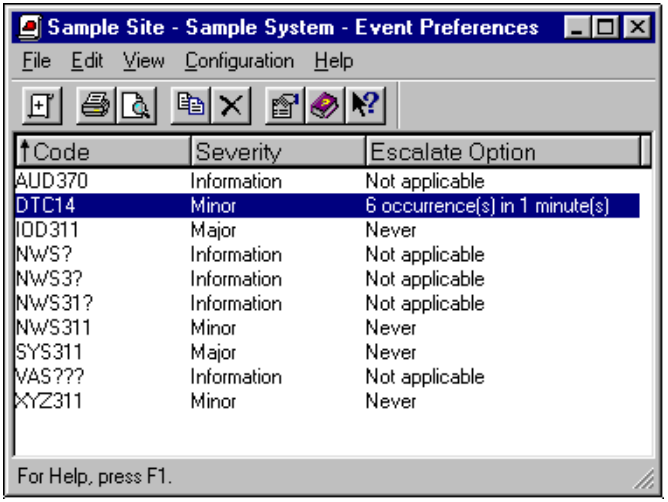
Before changing an alarm definition, you may want to look up the default settings in the Event Default Table. See "Viewing the Event Default Table" on page 673.

To open the Event Preferences window:

➔ Choose Configuration > Event Preferences.

The Event Preferences window opens (Figure 331).

Figure 331 Event Preferences window

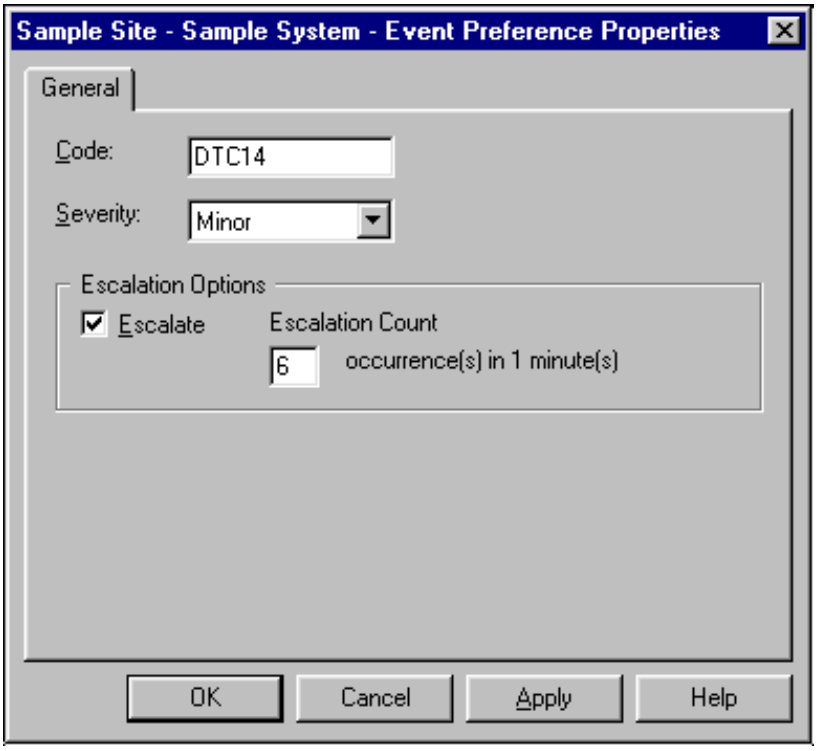


Creating an Event Preference definition

1 Choose Configuration > Add Event Preference.

The Event Preference dialog box opens with the General tab displayed (Figure 332).

Figure 332 Event Preference Properties dialog box—General tab



2 In the Code field, type the alarm or event ID.

The ID includes the event category, such as BUG, or NWS, and the 5-digit event number.

You may use the wildcard symbol ? to represent a group of error code numbers. For example, NWS3?? represents all error codes between NWS300 and NWS399.

3 To change the alarm severity, from the severity list, choose a severity type.

4 To change the escalation threshold, check the Escalate box, and type a number in the Escalation field.

The escalation setting defines the maximum number of times an event can occur within a defined period of time before it escalates to the next higher level of severity. This defined period of time is determined by the Meridian 1 or Succession CSE 1000 system's Global Window Timer. For example, if you set escalation to "10 occurrences in 1 minute" for a minor alarm, the alarm escalates to a major alarm when it occurs more than 10 times within a 1-minute period.

Note: The Global Window Timer is set in Overlay 117 and can range from 0–60 minutes. In this example, the Global Window Timer is set to 1 minute.

5 Click OK.

Configuring alarms on the Meridian 1 or Succession CSE 1000 system

The Events Monitor window displays the events stored in the Meridian 1 or Succession CSE 1000 system's Event Log. To display the system's events in the OTM web-based Alarm Browser, you must enable the open alarms feature in LD 117. You may also want to suppress minor and informational alarms going to the OTM Server.

Enabling Meridian 1 system alarms with LD 117

To enable alarms with LD 117:

1 In the OTM system window, on the toolbar, click the System Terminal icon.

The System Terminal Selection dialog box opens.

2 Click Ethernet/PPP (Overlay Passthru), and then click OK.

The System Terminal window opens.

3 Log in with your administrator's user name and password.

You must have appropriate access privileges to use LD 117.

4 Enter:
ld 117

The => prompt appears in the Command Results pane indicating that the system terminal application is ready to accept your input.

5 Enter:
prt open_alarm

A list of slots currently in use appears. Slots are numbered from 0–7, for a total of 8 available slots. Note the number of the next available slot.

6 Enter:
set open_alarm <*n*> <*IP_address*>

where *n* is the next available slot number, and *IP_address* is the IP address of your OTM Server. See "Determining the OTM PC's IP address" on page 678 for more information.

Caution: If you assign your IP address to a slot currently in use, you disconnect the current user from the system, and prevent them from receiving alarm information.

7 Enter:
prt open_alarm.

The list of slots and IP addresses receiving alarms appears. Verify that your particular slot and IP address are included.

Note: LD 117 accepts abbreviations of the various commands. For example, you can type the abbreviation **prt op** instead of **prt open_alarm.**

8 Enter:
prt suppress
prt suppress_alarm

This shows the current alarm suppression settings.

9 Enter:
chg suppress_alarm <*n*>

This sets the alarm suppression, where *n* is 0 = All, 1 = Minor, 2 = Major, 3 = Critical. For example, to suppress all alarms except critical, enter 3.

10 Enter:

```
prt suppress
prt suppress_alarm
```

This allows you to verify the changes.

11 Enter:

```
prt timer
```

This allows you to view the Global Window Timer setting . The escalation and suppression thresholds are based on the Global Window Timer. The default value is one minute. To change the timer, enter **chg timer <***n***>**, where *n* is 0–60 minutes.

12 Log out and close the system terminal window.

Determining the OTM PC's IP address

To find your PC's IP address:

1 From the Windows Start menu, choose Settings > Control Panel.

The Control Panel window opens.

2 Double-click Network.

The Network dialog box opens with the Configuration tab displayed.

3 Select the TCP/IP network component used by your PC.

4 Click Properties.

The TCP/IP dialog box opens with the IP address tab displayed.

5 Note the IP address shown.

This is the IP address unique to this PC. Enter this information in LD 117 to specify where the alarm event will be received.

Sample LD 117 session

The following is a representative sample of a system terminal session using LD 117 to enable alarms. In this example, the OTM PC that will receive alarms has the IP address 47.82.40.6. Slots 0 and 1 are already in use by other PCs. Use the next available slot 2 to enter the new OTM PC IP address. Note the => prompt used by the overlay. All IP addresses are for example purposes only. Additional information about LD 117 is available in the online Help.

```
login admin1
PASS?
WARNING: THE PROGRAMS AND DATA STORED ON THIS SYSTEM ARE LICENSED
TO OR ARE THE PROPERTY OF NT/BNR AND ARE LAWFULLY AVAILABLE ONLY TO
AUTHORIZED USERS FOR APPROVED PURPOSES. UNAUTHORIZED ACCESS TO ANY
PROGRAM OR DATA ON SYSTEM IS NOT PERMITTED. THIS SYSTEM MAY BE
MONITORED AT ANY TIME FOR OPERATIONAL REASONS. THEREFORE, IF YOU
ARE NOT AN AUTHORIZED USER, DO NOT ATTEMPT TO LOGIN.
BSD000
.ld 117
OAM000
=> prt open_alarm
Open Alarm destination #0 is 47.82.40.237
Open Alarm destination #1 is 47.82.40.119
=> set open_alarm 2 47.82.40.6
=> prt op
Open Alarm destination #0 is 47.82.40.237
Open Alarm destination #1 is 47.82.40.119
Open Alarm destination #2 is 47.82.40.6
```

Alarm Notification application

The Alarm Notification application uses the existing OTM architecture to connect to Meridian 1 systems, Succession CSE 1000 systems, and other supported systems and equipment that can generate SNMP events, to detect specified events. For Meridian 1 and Succession CSE 1000 systems, the SNMP Open Alarms package (315) must be present and activated, along with the packages required for OTM.

OTM alarm notification process

The Alarm Notification application receives SNMP events from designated network equipment over an Ethernet network and sends out alarm notifications when specified event conditions are detected. Received events are compared to a set of rules which may activate notifications of different types. These notifications include the following:

- SNMP traps or events transmitted to predefined destinations
- Text notification over a modem
- Pager notification to alpha or numeric pagers
- Electronic mail using Simple Mail Transfer Protocol (SMTP)
- Log

Note: The log is not an alarm notification but is included because it describes system events.

SNMP events appear at the OTM PC in the Alarm Notification window. You can also view events with a web browser connected to a configured web server. When the application starts, three application control files are loaded: a devices file, a configuration file, and a scripts file.

Note: These control files must be present and configured for the Alarm Notification application to work correctly. See "Setting up alarm notification" on page 683.

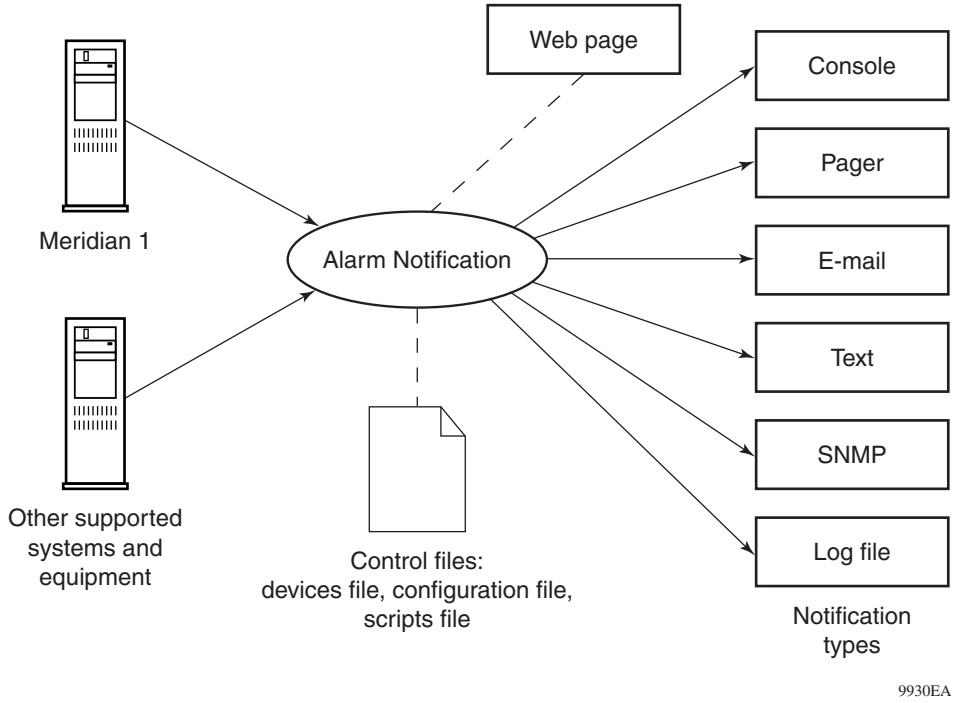
The devices file specifies the SNMP devices to be monitored. You must define the devices file before you can start alarm monitoring. A sample devices file, Devices.txt, is provided in the OTM directory.

The configuration file defines the event information (SNMP traps) that may be received. The file should contain definitions for all SNMP traps that may be sent by devices specified in the devices file. Event values are mapped to variable names, which you may use in the scripts file. You must define the configuration file before you can start alarm monitoring. A sample configuration file, Config.txt, is provided in the OTM directory.

The scripts file defines how alarms are processed and which notifications are used.

Figure 333 shows a functional overview of the Alarm Notification application.

Figure 333 Overview of Alarm Notification application



A scripting language is included within the application to allow you to define alarm processing and notifications. An external text editor is required to create scripts.

Use the scripting language to define the following:

- How to process events
- New responses and notifications to predefined events

Note: Events from undefined devices are ignored.

Opening the Alarm Notification window

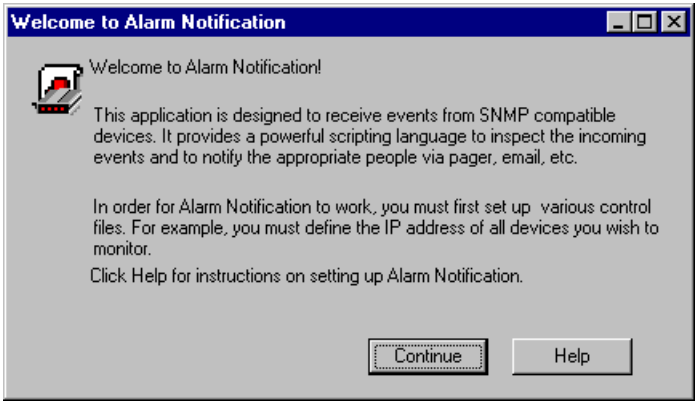
To access the Alarm Notification window:

➔ Choose Utilities > Alarm Notification.

The Alarm Notification window opens (Figure 335).

Note: The first time you start the Alarm Notification application, the welcome dialog box opens (Figure 334). Subsequent sessions do not display this dialog box.

Figure 334 Welcome to Alarm Notification dialog box



➔ Click Continue.

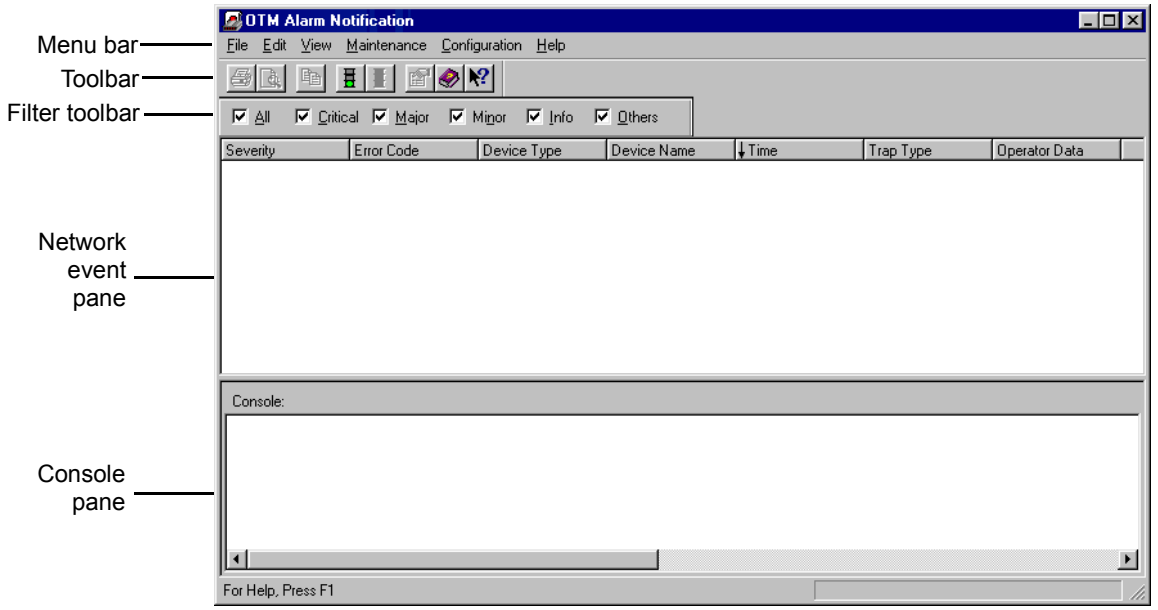
The Alarm Notification window opens (Figure 335).

or

➔ Click Help.

The online Help for setting up the control files opens (Figure 336).

Figure 335 Alarm Notification window



The top pane of the Alarm Notification window, the Network Events browser, displays all events received since starting the application. The bottom pane, called the console, displays notifications defined in the script sent to *con*.

To view information about the menus, toolbar, column headings, window panes, and other functions available in the Alarm Notification window, use Help.

You use the Alarm Notification window to do the following:

- Start, stop, and restart alarm processing.
- Specify the control files used by the application.
- View events as they are received from defined systems and devices.
- View script and notification output in the console as they are received.
- View received events.

Setting up alarm notification

Before alarm notification can function correctly, you must set up control files. Control files include the devices file, the configuration file, and the scripts file.

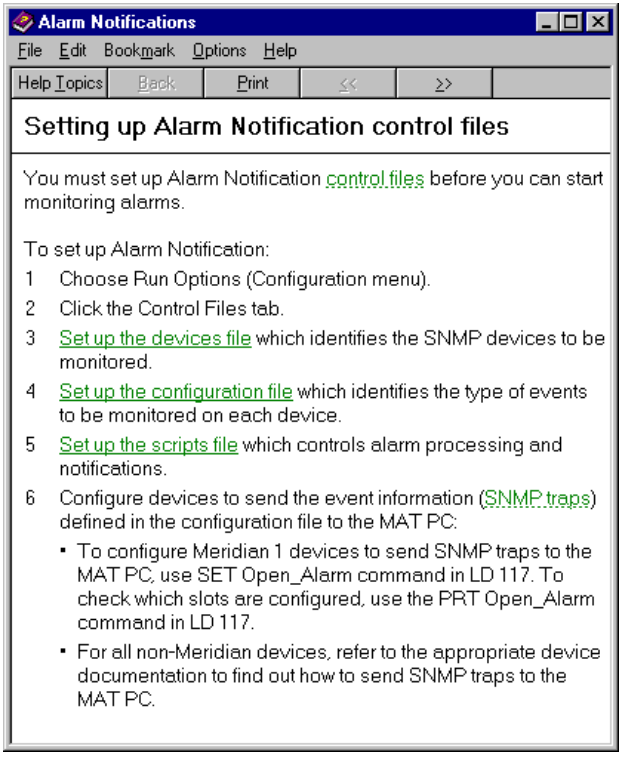
To set up alarm notification, complete the following tasks:

- Make sure you have the control files correctly installed and the Run Options defined. See "Setting up a devices file" on page 685 for more information.
- Determine the IP address of your OTM PC on which you will view the events. This PC must have Alarm Notification correctly installed. The PC must be networked with the system to be monitored. See "Determining the OTM PC's IP address" on page 678 for information on determining the IP address.
- Use LD 117 to enable alarms to be sent to your OTM PC. See "Enabling Meridian 1 system alarms with LD 117" on page 676.

Installing Alarm Notification control files

Make sure you have the control files correctly installed. Control files define which systems are monitored and which events are processed. For detailed instructions about defining Run Options, consult the online Help (Figure 336).

Figure 336 Help for setting up control files



Setting up a devices file

The devices file contains the list of monitored systems. SNMP traps that a device sends must be defined in the configuration control file. You can add reference information to monitored systems specifying the following:

- The IP address of the system or its system name
- An alias for any system name or IP address

Note: Within the Alarm Notification application, you can reference systems by the specified alias.

See Appendix C, "Control files included with alarm notification," for more information about the contents of the devices file.

To set up a devices file:

1. In the Windows Explorer, rename a copy of the sample Devices.txt file, located in the OTM directory:

   `X:\Nortel\Common Data\Alarm Notification\Control Files`

   For example, the new filename might be *my_devices*.

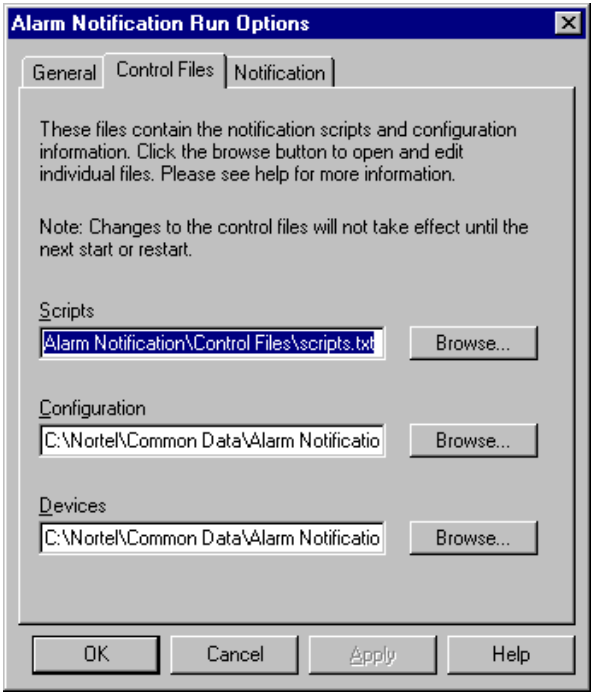
Caution: Do not work directly in the sample Devices.txt file. This file is overwritten when OTM is reinstalled or upgraded and any changes will be lost.

2. In the Alarm Notification application, choose Configuration > Run Options.

   The Alarm Notification Run Options dialog box opens with the General tab displayed.

3. Click the Control Files tab (Figure 337).

Figure 337 Alarm Notification Run Options window—Control Files tab



4 Next to the Devices field, click Browse.

The Open dialog box opens.

5 Find and select the new devices file, and then click Open.

6 Replace the IP address following “Meridian1” with the IP address of your Meridian 1 or Succession CSE 1000 system.

You may also provide an alias.

7 For each additional Meridian 1 or Succession CSE 1000 system or non-Meridian device to be monitored, enter a device type name, an IP address, and (optionally) an alias.

- Device type represents the type of device (for example, XYZrouter). You use this name in the configuration file to identify SNMP traps.
- IP address or PC host file name. If the PC host file is used, the address is obtained from the PC host file.
- Aliases are alternate names you can define that identify each device within the Alarm Notification window.

8 Save the file as text and close the window.

Note: Keep a backup copy of your devices file on your local drive.

Example of device file entries listing monitored Meridian 1 systems:

```
Meridian1 147.114.45.6 nmkpy716
Meridian1 147.114.45.4
Meridian1 nmkpy711 myM1
```

Setting up a configuration file

A sample configuration file for Meridian 1 or Succession CSE 1000 systems is provided. Complete the following procedure only if you want to monitor additional devices, such as routers or printers. Otherwise, you may skip this procedure. See Appendix C, "Control files included with alarm notification," for more information about the contents of the configuration file.

To set up a configuration file:

1 In the Windows Explorer, rename a copy of the sample Config.txt file, located in the OTM directory:

```
X:\Nortel\Common Data\Alarm Notification\Control Files
```

For example, the new filename might be *my_config*.

Caution: Do not work directly in the sample Config.txt file. This file is overwritten when OTM is reinstalled or upgraded, and any changes will be lost.

2 In the Alarm Notification application, choose Configuration > Run Options.

The Alarm Notification Run Options dialog box opens with the General tab displayed.

3 Click the Control Files tab (Figure 337 on page 686).

4 Next to the Configuration field, click Browse.

The Open dialog box appears.

5 Find and select the new configuration file, and then click Open.

6 To add a new SNMP trap, type the word **`device`** followed by the device name (as defined in the devices file), followed by the major and minor trap types associated with the device (refer to the device manual), or the appropriate SNMP MIB.

7 Below the device name, enter the following information for each event to be monitored on the device:

- Object identifier associated with the event (refer to the device manual to find this information).
- Variable type (only “integer” and “string” are supported).
- Variable name (you use the variable name to refer to this event in notification scripts).
- Event name (in quotations). This name identifies the event in the Alarm Notification window.

  See “Example of configuration file entries for Meridian 1 systems:” on page 689.

  You may use the standard Meridian 1 and Succession CSE 1000 system event definitions (variable type, variable name, and event name) to define similar variables for non-Meridian devices. The standard Meridian event names map the event values to corresponding fields within the Alarm Notification window and Event Properties sheet. If non-standard definitions are used, event information appears in the Additional Information field.

8 Repeat steps 6 and 7 for each non-Meridian 1 or Succession CSE 1000 device to be monitored.

9 Save the file as text and close the window.

The following example shows the standard configuration file to process Meridian 1 and Succession CSE 1000 system events. Modify this file to add other systems to be managed. Users should be familiar with scripting logic and programming principles to effectively use and extend this application’s capabilities.

Example of configuration file entries for Meridian 1 systems:

```
device Meridian1 6.10 {
1.3.6.1.4.1.562.3.3.7.1.0 integer  $CurrentAlarmSeqNum
1.3.6.1.4.1.562.3.3.7.2.0 string   $CurrentAlarmTime
1.3.6.1.4.1.562.3.3.7.3.0 integer  $CurrentAlarmSeverity         "Severity"
1.3.6.1.4.1.562.3.3.7.4.0 string   $CurrentAlarmErrorCode        "Error Code"
1.3.6.1.4.1.562.3.3.7.5.0 string   $CurrentAlarmComponentId
1.3.6.1.4.1.562.3.3.7.6.0 string   $CurrentAlarmComponentAddress
1.3.6.1.4.1.562.3.3.7.7.0 string   $CurrentAlarmDescriptiveText  "Text"
1.3.6.1.4.1.562.3.3.7.8.0 string   $CurrentAlarmOperatorData     "OperatorData"
1.3.6.1.4.1.562.3.3.7.9.0 string   $CurrentAlarmExpertData       "Expert Data"
1.3.6.1.4.1.562.3.3.7.10.0string   $CurrentAlarmCounts
}
```

Contained in the configuration file is a set of SNMP trap definitions, each followed by a list of the monitored devices of that type. Each trap definition begins with the word device, followed by the device name, and followed by a list of variables for the defined trap. For the example above, the designated name is Meridian 1, and the trap number is 10.

The next lines contain SNMP object identifiers, followed by a variable type, and followed by a variable name and an optional printable name in quotes. The variable name may be referenced in the scripting language and the printable name appears in the Network Event browser pane in the Alarm Notification window.

Note: Only integer and string values are supported in the device definition entries.

Setting up a scripts file

The scripts file defines alarm processing and notification. A sample scripts file is provided, which you can modify. See Appendix C, “Control files included with alarm notification,” for more information about the contents of the scripts file.

To set up a scripts file:

1. In the Windows Explorer, rename a copy of the sample Scripts.txt file, located in the OTM directory:

   `X:\Nortel\Common Data\Alarm Notification\Control Files`

For example, the new filename might be *my_scripts*.

Caution: Do not work directly in the sample Scripts.txt file. This file is overwritten when OTM is reinstalled or upgraded, and any changes will be lost.

2 In the Alarm Notification application, choose Configuration > Run Options.

The Alarm Notification Run Options dialog box opens with the General tab displayed.

3 Click the Control Files tab (Figure 337 on page 686).

4 Next to the Scripts field, click Browse.

The Open dialog box appears.

5 Find and select the new scripts file, and click Open.

6 Use the sample script as a guide to create your own notification script file.

For an example of scripts files, see "Sample Alarm Notification scripts" on page 725, and Appendix C, "Control files included with alarm notification."

7 Save the file as text and close the window.

A script includes variables, rules, notifications, functions and logical expressions that evaluate and may apply to event data. See "Scripting" on page 692. Values defined within a script are exclusive and visible only to that script. The script container is delimited by "curly" brackets { }. You can define global values that are visible to all scripts.

When the Alarm Notification application starts, each script is executed in the order defined in the script file.

Setting up auto-start for scripts

Once the control files are defined, use the following procedure to automatically load the scripts when you start the Alarm Notification application:

1 In the Alarm Notification application, choose Configuration > Run Options.

The Alarm Notification Run Options dialog box opens with the General tab displayed.

2 Click the box marked “Auto-start scripts on program launch.”

The scripts are automatically loaded each time that you start the application.

Events processing

Events received appear in the network event pane. As each event is received, it is placed in a queue for processing by the application. Each event is checked to see if it originates from a defined system or supported equipment. Events received from undefined systems devices are ignored and discarded from the queue.

The application executes every applicable script for each specific event type. If a rule is matched to an event type, the output appears in the Alarm Notification window console pane or is sent as one of the other available notification types (for example, e-mail or pager), according to the script. Output to the console pane occurs immediately, but notifications are written to disk.

The notification process periodically polls the notifications and sends them to the specific device or function for this notification type. If directed by the script, results of the notification appear in the console pane. If a failure occurs due to power interruption or software or hardware error, the unprocessed notifications are completed on restart.

Viewing event properties

The Alarm Notification application receives events from many different systems and devices. Each event source may have different characteristics requiring you to enter different information to fully define an event source. You can identify the event source in the Event Properties dialog box.

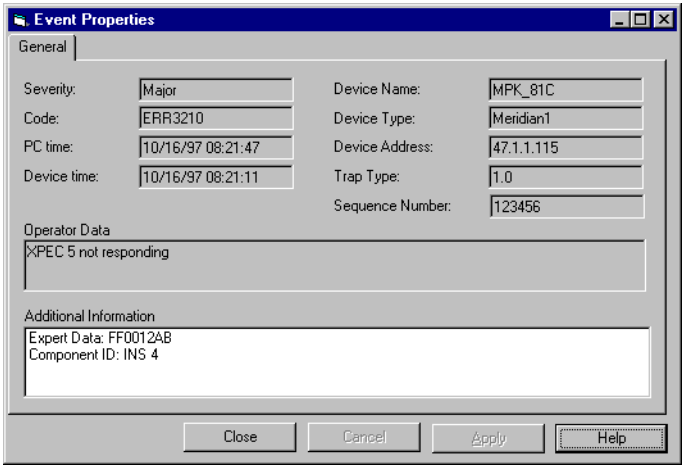
To view event properties:

1 In the network event pane, select an event.

2 Click Properties.

The Event Properties dialog box opens with the General tab displayed. (Figure 338)

Figure 338 Event Properties dialog box—General tab



For information on the fields in the Event Properties dialog box, refer to online Help.

Note: The Event Properties dialog box is optimized for Meridian 1 and Succession CSE 1000 system events.

The Alarm Notification application processes events you have defined in the configuration file from specific systems or devices you have defined in the devices file. Events from undefined systems or devices are ignored.

Scripting

Scripting is the process of using the syntax of the programming language in the Alarm Notification application to create text files specifying that certain actions be taken for defined events. A script includes one or more logical expressions that evaluate event data and provide notification instructions. The script file may contain many scripts. When the Alarm Notification application starts, all scripts are run against each new event as it is received.

Scripts are run in the order defined in the script file. To cause a script to be skipped when it is not applicable, use the *when* operator. You must be familiar with scripting logic and programming principles to effectively use and extend this application's capabilities.

Scripting syntax includes the following:

- Data types
- Referencing variable names from *Config.txt*
- Scripts
- Operators
- Notifications
- Conditional expressions
- Rules
- Comments
- Functions

The syntax is described in the following sections. Consult the online Help for specific examples of scripting syntax.

Note: The indentations in the examples presented in this section facilitate reading the script and do not affect how the script is interpreted by the application.

Variable types

The scripting language supports three variable types: counter, timer, and string. The names of these variables must begin with an alpha character and may be of any length.

Note: Variables are case sensitive.

Counter

Counters contain signed integer values. You may assign values to counters when you define them, and you may include multiple variables of the same data type in the same statement. Counters can be global to a script or local to a function.

Syntax:

```
counter variable_name:=0;
```

Example:

```
counter n;
n:=n+1;
if(n=5)
{
.../*Send notification*/
}
```

Timer

Timers are counters that are automatically incremented when the time changes. Default timers increment once every minute. You may define specific update intervals other than the default increment. Timers cannot be defined in a function; they must be used globally in a script.

Syntax:

```
timer variable_name;
```

Example:

```
script SampleScript {

/*Notification Counters definition*/
  counter count_ns_Meridian1:=0;

/*Notification Timer definition*/
  timer time_Meridian1;

..........

if(time_Meridian1>3) /*i.e. after 3 minutes*/
  {
   .../*Send notification*/
  }
}
```

String

Strings contain arbitrary alphanumeric data. A default string contains up to 80 characters. If more data is placed in a string than the string definition allows, the application truncates the entry.

Syntax:
```
string variable_name;
```

Example:
```
string severity;
if(severity="critical")
{
  .../*Send notification*/
}
```

Note: Longer or shorter strings may be explicitly specified and initialized as follows:
```
string more_stuff[255]:="Alarm Notification";
```

Referencing variable names from *Config.txt*

Alarm Notification processes events of a specified type from specified devices. These events are SNMP traps. Values contained in SNMP traps are mapped to variables that are referenced in Alarm Notification scripts. All relevant variables are updated with each incoming event.

Table 33 lists the four variables that are defined for all incoming events.

Table 33 Variables included in all incoming events

Name	Type	Contents
$CurrentTrapSource	string	Name or IP address of the event source
$CurrentTrapDevice	string	Name of the device as defined in the configuration file
$CurrentTrapMajor	string	Major trap type
$CurrentTrapMinor	string	Minor trap type

The configuration file *Config.txt* contains a device definition for each type of device that is monitored by OTM. The *Devices.txt* file contains a list of monitored devices. All events from undefined devices are ignored. See "Defining devices in Devices.txt" on page 697.

The following example shows the standard configuration information required to process events from Meridian 1 systems as contained in the *Config.txt* file:

Config.txt example:

```
device Meridian1 6.10 {
   1.3.6.1.4.1.562.3.3.7.1.0  integer       $AlarmSeqNum            "Alarm Seq Num"
   1.3.6.1.4.1.562.3.3.7.2.0  string        $DeviceTime             "Device Time"
   1.3.6.1.4.1.562.3.3.7.3.0  integer       $Severity               "Severity"
   1.3.6.1.4.1.562.3.3.7.4.0  string        $ErrorCode              "Error Code"
   1.3.6.1.4.1.562.3.3.7.5.0  string        $SystemComponent        "System Component"
   1.3.6.1.4.1.562.3.3.7.6.0  string       $ComponentAddress       "Component Address"
   1.3.6.1.4.1.562.3.3.7.7.0  string        $Text                   "Text"
   1.3.6.1.4.1.562.3.3.7.8.0  string        $OperatorData           "Operator Data"
   1.3.6.1.4.1.562.3.3.7.9.0  string        $ExpertData             "Expert Data"
   1.3.6.1.4.1.562.3.3.7.10.0 string        $CurrentAlarmCounts
}
```

Each device definition begins with the word `device` followed by the device name and a list of SNMP traps allowed from the device. The first column contains SNMP object identifiers. The second column gives the variable type; only integer and string type variables are permitted. The third column lists the variable name, and the fourth column provides the optional printable name of the variable. The printable name appears in quotes. The variable name is referenced in the scripting language while the printable name appears in the Alarm Notification window and Alarm browser.

In the following example, the variables `$ErrorCode`, `$DeviceTime`, `$Text`, and `$OperatorData` are referenced from the *Config.txt* file. `$CurrentTrapSource` is a variable that is defined for all events (Table 33 on page 695).

Example:

```
send(con,
  "--> Critical Meridian1 alarm received!".
  $ErrorCode,"-",            //M1 error code
  $CurrentTrapSource,"-",    //Name of this M1
  $DeviceTime,"-",           //Timestamp from M1
  $Text,"-",                 //Text with error message
  $OperatorData              //More text with error message
);
```

You may add definitions to the *Config.txt* file for non-Nortel Networks devices; however, you should not attempt to modify the definitions associated with the Nortel Networks devices provided in this file.

To view the entire contents of the *Config.txt* file, see "Configuration file" on page C-3 of Appendix C, "Control files included with alarm notification."

Defining devices in *Devices.txt*

The *Devices.txt* file contains a list of the devices to be monitored. For each device, list the device type as it appears in the *Config.txt* file, followed by the IP address or host name of the device. You may also include an alias for the device. If an alias is defined for the device, the device is referenced using the specified alias in the Alarm Notification application.

Examples:

```
Meridian1 192.9.200.1
CALL_PILOT sample_cp
Meridian1 192.9.200.2 Toronto_11C
```

To view the contents of the *Devices.txt* file, see "Devices file" on page C-2 of Appendix C, "Control files included with alarm notification."

Scripts

A script is a container for variables, rules, notifications, and functions. Anything that is defined within a script is only visible in that script. Variables, rules, notifications, and functions may also be defined outside of scripts. These are known as global definitions. Global definitions are available to be used in all scripts. If a definition with the same name as a global definition exists within a script, the script definition takes precedence over the global definition for the given script.

At run time, each script is executed in the order in which it is defined.

Example:

```
script example1 {
}
```

To skip non-applicable scripts, use the "when" operator. In the following example, the code declared within *example2* only executes if the incoming event is from a device that is defined as being a Meridian 1.

Example:

```
script example2 when ($CurrentTrapDevice="Meridian1"){
}
```

Operators

Scripts usually contain a logical expression for testing event data. Logical expressions support operators that you can use in any combination. Use parentheses to clarify the order of operations.

The Alarm Notification application supports the operators described in Table 34.

Table 34 Operators

Operator	Description
+, -, *, /	Addition, subtraction, multiplication, division
<, <=	Less than, less than or equal
>, >=	Greater than, greater than or equal
=, !=	Equal, not equal
<>	Contains (look for substrings)
and, or	Logical and, logical or (case sensitive)
:=	Assigns a value to a variable. The data types must agree or a compiler error will result when the script is executed. If a value is assigned to a string value, the string must be declared large enough to contain the new value.

Note: The logical operators “and” and “or” are case sensitive.

Example:

```
counter n;
if(
    ((($CurrentTrapSource="164.164.8.99") or ($CurrentTrapSource="164.164.8.98"))
        and ($CurrentTrapDevice="Meridian1") and (($NormalizedSeverity=Critical))
  ){
        n:=n+1;
        if(n=3)
           {
            .../*Send notification*/
           }
}
```

For additional examples of how these operators are used, see "Sample Alarm Notification scripts" on page 725, and Appendix C, "Control files included with alarm notification."

Conditional expressions

The following section describes the conditional expressions that are available for use in Alarm Notification scripts.

if / else

The *if* and *else* expressions can be used with both arithmetic and logical operators.

Syntax:

```
.
.
if (condition A){
...
}
else
}
.
.
```

Example:

```
if($CurrentTrapDevice="Meridian1" or $CurrentTrapDevice="CALL_SERVER"){
      convertit(); //Any function
}
```

The following is an example using conditional expressions that is not allowed:

```
if (condition A){
...
}
else if (condition B){
...
}
else {
...
}
```

Instead, use the following:

```
if (condition A){
...
}
else {
      if (condition B){
      ...
      }
      else {
      ...
      }
}
```

The do while loop

The *do while* loop can only be used inside a function.

Syntax:

```
do{
...
} while (Condition);
```

Example:

```
.
.
counter c;
do{
    send(con,
        "--> Critical Meridian1 alarm received! ",
        $ErrorCode," - ",         //M1 error code
        $CurrentPCTime," - ",     //Time that PC received the alarm
        $CurrentTrapSource," - ", //Name of this M1
        $DeviceTime," - ",        //Timestamp from M1
        $Text," - ",              //Text with error message
        $OperatorData             //More text with error message
    );
    c:=c+1
} while (c<3);       //Send any (in this case to console) three times
.
.
```

The for loop

The *for* loop can only be used inside a function.

Syntax:

```
for(count:=0;count<n;count:=count+1){
...
}
```

Example:

```
.
.
counter c:=0;
for(c:=0; count<2; c:=c+1){
  send(OtmOpenAlarm1,
   "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
   "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
   "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
   "1.3.6.1.4.1.562.50.1.2.4.0", "Integer",     $NameSpace,           // Name Space
   "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
   "1.3.6.1.4.1.562.50.1.2.6.0", "OctetString", $Site,                // Site
   "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,              // System
   "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
   "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,    // Originating Agent
   "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
   "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          // Problem Isolation Data2
   "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 // Problem Isolation Data3
  );
}              //Send any notification (in this case a trap) twice
.
.
```

The when construct

Use the *when* construct to skip a script when it is not applicable.

Syntax:

```
script convert when (condition){
  function convertit(){
...
}
rule conversion {
...
}
```

Example:

```
script convertM1Severities when ($CurrentTrapDevice="Meridian1" or $CurrentTrapDevice="CALL_SERVER")
{
       function convertit()
       {
            if ($Severity=1)
            {
                 $NormalizedSeverity:=Minor;
            }
            else
            {
                 if ($Severity=2)
                 {
                      $NormalizedSeverity:=Major;
                 }
                 else
                 {
                      if ($Severity=3)
                      {
                           $NormalizedSeverity:=Critical;
```

```
                    }
                    else
                    {
                         if ($Severity=4)
                         {
                              $NormalizedSeverity:=Unknown;
                         }
                         else
                         {
                              if ($Severity=5)
                              {
                                   $NormalizedSeverity:=Warning;
                              }
                              else
                              {
                                   if ($Severity=6)
                                   {
                                        $NormalizedSeverity:=Cleared;
                                   }
                                   else
                                   {
                                        if ($Severity=7)
                                        {
                                             $NormalizedSeverity:=Undetermined;
                                        }
                                        else
                                        {
                                             $NormalizedSeverity:=Info;
                                        }
                                   }
                              }
                         }
                    }
               }
          }
     }

     rule severity_conversion {
          if ($CurrentTrapDevice="Meridian1" or $CurrentTrapDevice=”CALL_SERVER”)
          {
               convertit();
          }
     }

} // end script convertM1Severities
```

Notifications

Notifications define the message text and the means by which it is conveyed. The Alarm Notification application supports the notification types shown in Table 35.

Table 35 Notification types

Name	Definition
console	Sends output to the console pane in the Alarm Notification window. This type of notification is the simplest and contains no fields.
npager, apager	Sends messages to numeric (npager) or alphanumeric (apager) pagers.

Table 35 Notification types (continued)

Name	Definition
email	Sends an e-mail message to a remote system using Simple Mail Transfer Protocol (SMTP). For e-mail to work correctly, an SMTP-capable host must be accessible to the OTM PC.
modem (text)	Sends message text from the OTM PC to a remote system, such as an alarm collection management workstation through an attached modem. To use this feature, a modem and a phone line must be connected, supported, and available. If the destination is busy, the Alarm Notification application retries later or sends the message to an alternate destination. Use the Alarm Notification Run Options dialog box to define additional actions.
snmp	Sends SNMP traps to a remote system.
file	Saves the output to disk as a text file.

Notification types

All notification types except console accept the days and times fields. The days field may contain a quoted list of valid days, for example, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, or a range of valid days, for example, Sunday-Saturday. You may specify different destinations depending on the current day, date, time, or alarm notification type.

Use the send syntax to direct Alarm Notification to deliver six types of notifications:

- Console
- Pager
- E-mail
- Text (over modem)
- SNMP
- Log file

Console

The console notification type displays a notification in the console pane in the Alarm Notification window. No parameters are required. A default console notification, con, is provided.

Example:

```
// (no definition necessary)
.
.
.
// send a console notification
if($CurrentTrapDevice="Meridian1" and $NormalizedSeverity=Critical){
  //Print event to console
send(con,"--> Critical Meridian1 alarm received!",
 $ErrorCode," - ",                 // M1 error code
 $CurrentPCTime," - ",             // Time that PC received the alarm
 $CurrentTrapSource," - " ,        // Name of this M1
 $DeviceTime," - " ,               // Timestamp from M1
 $Text," - ",                      // Text with error message
 $OperatorData);                   // More text with error message
    );
}
```

Note: This script displays the text "--> Critical Meridian1 alarm received!" followed by the values for the listed traps, which includes the error code, the current PC time, name of the M1, time when the alarm occurred, text associated with the error code, and the Operator data. Note the use of `con` with the `send` syntax in the script.

Pager

Alarm Notification supports both alphanumeric and numeric pagers. You define the list of paging destinations and supported functionality for each pager. Be sure you have a modem and a valid phone line connection. Messages must match the pager type: up to 30 characters for alphanumeric pagers and only digits for numeric pagers.

Mandatory parameters are:

- `phone:="408-555-1212";`

  The phone number you dial to connect to your pager service.

- `pin:="123456";`

  The alpha numeric pager's PIN number, for the type "apager" only.

Examples:

The first example shows a script defined to call an alphanumeric pager named "my_pager" only on Monday and Thursday through Saturday, from 9:00 a.m. to 5:00 p.m. The PIN and the pager service number are specified. Note that the number needed to access an external phone line (9) is included. The second example shows a script defined to call a numeric pager named "numeric_pager" only on Tuesdays and Wednesdays from 9:00 a.m. to 5:00 p.m. In this example, a PIN is not required.

```
/* Alphanumeric pager notification definition */
notification apager my_pager
{
   days:="monday,thursday-saturday";
   times:="9am-5pm";
   pin:="123456";
   phone:="9,408-555-1212";
}
.
.
.
// Send an alphanumeric pager notification
send(my_pager,
  $CurrentTrapSource,":",severity_level," ",$CurrentTrapMajor,".",$CurrentTrapMinor);


/* Numeric pager notification definition */
notification npager numeric_pager
{
    days:="tuesday-wednesday";
    times:="9am-5pm";
    phone:="9,555-555-5555";
}
.
.
.
//Send a numeric pager notification
send(numeric_pager,"5554321"); /* 2nd parameter is the telephone number that the
person who is paged should call */
```

E-mail

You can write a message that the application sends to a specified list of recipients. The application uses Simple Mail Transfer Protocol (SMTP) to send the message. To make this notification type work correctly, you must have an SMTP-capable host connected and accessible to the OTM PC. You must configure the host in OTM before activating this feature. Each *send* statement is treated as a separate e-mail message.

E-mail messages coming from Alarm Notification are sent with “OTM” as the sender. The receiving e-mail program may try to match OTM with a corresponding local user account and display the closest match in the e-mail’s header. Although the header information may not be accurate due to mismatches between the term “OTM” and the local user account information, the e-mail message still appears as defined by the notification.

Mandatory parameters are:

- `from:="OTM";`

  The sender’s valid e-mail address.

- `address:="support@tech.com";`

  The recipient’s valid e-mail address.

- `server:="192.9.200.1";`

  IP address or host name of SMTP mail server.

Example:

```
// define an email notification
   notification email my_email {
        from:="OTM";
        address:="joe@acme.com";
      server:="192.9.200.1";
}
.
.
.
// send an email message
send (my_email,
  $DeviceTime,":Device ",$CurrentTrapSource,
  " generated a ",$CurrentTrapMajor,".",$CurretTrapMinor,
  " trap with severity level: ",severity_level,", ErrorCode:",$ErrorCode,".");
```

Note: The preceding example defines an e-mail notification named “my_email,” which has an associated recipient address and the mail server IP address. This script sends e-mail to the address stating the source of the alarm, the severity level, and the alarm error code. Note the use of the named e-mail notification “my_email” with the send syntax in the script.

Text (over modem)

The text notification type allows you to write a message that the application sends to a remote modem. The application connects to the remote modem, usually a remote support site that you have defined, and transmits the message. Be sure that you have a modem and a valid phone line connection.

If the remote modem is busy, the application stores and notes the message for a later delivery or sends it to another specified alternate destination.

Mandatory parameters are:

- `phone:="408-555-4321";`

  The phone number you dial to connect to the remote modem.

Example:

```
//define text over modem notification
   notification modem tech_center   {
   phone:="9,555-4321";
  }
.
.
.
//send text over modem notification
send(tech_center,$CurrentTrapSource,"-MPK alarm:",$CurrentAlarmErrorCode);
```

Note: The preceding example defines a modem notification named "tech_center," which has an associated number to dial to connect to the remote modem. This script sends text to the dialed remote modem stating the source of the alarm and the alarm error code. Note the use of the named modem notification tech_center with the send syntax in the script.

SNMP

You can request that the OTM PC generate Simple Network Management Protocol (SNMP) traps. You define SNMP Object Identifiers (OIDs) as parameters in the `send` syntax. Specify a list of TCP/IP addresses or registered host names on the Ethernet network to receive the trap; however, receipt is not guaranteed once messages are transmitted. You must be familiar with and knowledgeable about SNMP to effectively utilize this notification type.

Mandatory parameters are:

- `address:="192.9.200.1";`

  IP address or hostname of the destination for the trap.

- `trap:="6.10";`

  Trap type in Major type.Trap number format.

  This is usually done to forward traps to higher-level network management systems such as Optivity NMS and HP OpenView.

  For Optivity NMS, the Major type.Trap number format also indicates the severity level (Table 36).

Table 36 Optivity NMS severity levels

Major type.Trap number	Severity level
6.1	Critical
6.2	Major
6.3	Minor
6.4	Warning
6.5	Info
6.6	Clear

Example:

In this example, control_center is defined as an SNMP notification.

```
// define an SNMP notification
   notification snmp control_center {
      address:="192.9.200.1";
      trap:="6.1";
   }
.
.
.
// send an SNMP notification to the control center with the same trap
//format as the M1
send(control_center,
  "1.3.6.1.4.1.562.50.1.2.1.0","Integer",$AlarmSeqNum,            //AlarmSeqNo
  "1.3.6.1.4.1.562.50.1.2.2.0","OctetString",$DeviceTime,         //Date&Time
  "1.3.6.1.4.1.562.50.1.2.3.0","Integer",$NormalizedSeverity,     //Severity
  "1.3.6.1.4.1.562.50.1.2.4.0","Integer",nsOtm,                   //Name Space
  "1.3.6.1.4.1.562.50.1.2.5.0","OctetString",$ErrorCode           //Error Code
  "1.3.6.1.4.1.562.50.1.2.6.0","OctetString",$Site,               //Site
  "1.3.6.1.4.1.562.50.1.2.7.0","OctetString",$ComponentAddress,   //System
  "1.3.6.1.4.1.562.50.1.2.8.0","OctetString",$SystemComponent,    //System Component
  "1.3.6.1.4.1.562.50.1.2.9.0","OctetString",$CurrentTrapSource,  //Originating Agent
  "1.3.6.1.4.1.562.50.1.2.10.0","Integer",$TrapType,              //Trap Type
  "1.3.6.1.4.1.562.50.1.2.11.0","OctetString",$AssocUser,         //Associated User
  "1.3.6.1.4.1.562.50.1.2.12.0","OctetString" $OperatorData,//Problem Isolation Data1
  "1.3.6.1.4.1.562.50.1.2.13.0","OctetString" $ExpertData,  //Problem Isolation Data2
  "1.3.6.1.4.1.562.50.1.2.14.0","OctetString" $Text         //Problem Isolation Data3
)
```

Note: The preceding notification should be framed as shown and include all OIDs; otherwise, the management station may not properly receive the notification. The third parameter, variable name, is different for each device. For example, ITG has the variable names for component address, text, and expert data set as “na.” Sample trap formats for all supported devices are included in “Sample Alarm Notification script file” on page C-7 of Appendix C, “Control files included with alarm notification.”

Note: The script identifies the value of each variable in the generated trap, whether an integer or an octet string.

Log file

The log file notification type writes a message that the application saves to a text file. You specify the storage location of this text file in the script. If no path name is specified, the file is saved in the same directory as the Alarm Notification application. If the file already exists, the new message is appended to the existing file. If the file does not exist, it is created.

Mandatory parameters are:

- `filename:="c:\Normat\sample_log";`

  Full path name and filename.

Example:

```
// define a file notification
notification file sample_file {
filename  :=  "c:\eventlog.txt";
}
.
.
.
// send a file notification
send(sample_file, "M1 alarm: ",
    $CurrentTrapSource," - " ,          // Name of this M1
    $CurrentAlarmErrorCode," - " ,       // M1 error code (i.e., BUG1234)
    $CurrentAlarmTime," - " ,            // Timestamp from M1
    $CurrentAlarmDescriptiveText," - ", // Text with error message
    $CurrentAlarmOperatorData);          // More text with error message
```

Note: The preceding script defines a log file notification named *sample_file* having an associated path name defining a storage location on the drive C. The stored file is named *eventlog.txt*. Note the use of the named file notification s*ample_file* with the send syntax in the script.

Rules

Rules allow you to define actions that may be applied to a given event. Rules may only be defined in scripts. By default, rules are examined in a top-down manner. You may use an infer statement to explicitly specify the order in which rules are examined.

A *rule* consists of an if statement containing a logical expression, followed by an instruction. A rule may also include an else statement, which is only executed if the logical expression in the if statement is false. Within a rule, a send statement or a function may be called. New variables may not be defined within the scope of a rule.

Example:

```
rule check_Meridian1_critical {
     if($CurrentTrapDevice="Meridian1" and $NormalizedSeverity=Critical) {
          // print event to console
          send( con,
               "--> Critical Meridian1 alarm received! ",
               $ErrorCode," - " ,                  // M1 error code
               $CurrentPCTime, " - ",              // Time that PC received the alarm
               $CurrentTrapSource," - " ,          // Name of this M1
               $DeviceTime," - " ,                 // Timestamp from M1
               $Text," - ",                        // Text with error message
               $OperatorData                       // More text with error message
          );
     }
     else{
          // append event to log file
          send(sample_file,"--> Critical alarm received! ",
               $ErrorCode," - " ,                  // Error code
               $CurrentPCTime, " - ",              // Time that PC received the alarm
               $CurrentTrapSource," - " ,          // Name of this device
               $DeviceTime," - " ,                 // Timestamp
               $Text," - ",                        // Text with error message
               $OperatorData                       // More text with error message
          );
     }
}
```

Note: The preceding script defines the rule *check_Meridian1_critical*, which sends critical Meridian 1 alarms to the console and appends other events to the log file *sample_file*.

While rules may invoke functions, the *infer* command allows functions to call rules. Rules may be invoked in any order and repeatedly until a logical expression is satisfied or while a rule has not been triggered.

Examples:

```
infer{Rule1, Rule2, Rule3} until Rule4;
```

or

```
infer{RuleA, RuleB, RuleC} while (c>5);
```

Comments

Comments provide a convenient way of adding informational notes within a script. To include comments within a script, use the *C* convention (begin with /* and end with */), or use the *C++* convention (begin the comment with //).

For example:

```
/* This is a comment. */

// This is another comment.
```

Note: Many of the scripts presented in this chapter have portions noted as comments. Remove the comment tags for the application to interpret these as actual scripting code.

Functions

Functions contain a combination of logical expressions and optional variable declarations. They accept parameters and return a single result. You may invoke functions either within logical expressions or rules, or within themselves. Within a function, assignments may occur along with *if* and *loop* statements.

Example:

```
function counter samplefile(counter n) {
      string severity_level;
      severity_level := AlarmLevelToString($NormalizedSeverity);  // Calling another function
      n:=n+1;
      if (n=1) {
         send(nf_samplefile,
              $DeviceTime,": Device ",$CurrentTrapSource,
              " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
              " trap with severity level: ",severity_level,", ErrorCode: ", $ErrorCode, ".");
         n:=0;
       }
       return(n);
}
```

```
rule r_samplerul {
      if ($CurrentTrapDevice="ITG")
          {
            count_samplefile:=samplefile(count_samplefile);
          }
}
```

Using the sample script files

You have two methods available for writing scripts. You may have a single script in the script file and define all of the rules and functions in this one script, or you may have multiple scripts in the script file and define rules and functions for each script.

Single script

An example of a script file that contains a single script is *sample_wizard_script.txt* included with your OTM software. A printout of this script appears in "Sample Alarm Wizard script file" on page C-23 of Appendix C, "Control files included with alarm notification." In this example, there is only one script titled "GeneratedScript." This script has multiple rules to check for a condition and perform a defined task when the condition occurs. Typically, if the rule is satisfied, the script calls a function that initiates an action. The notifications can be located outside the script, and the function can call the notification from inside the script.

Note: The file *sample_wizard_script.txt* is a file that has been generated by the Alarm Script Wizard. You can modify this file manually; however, you cannot open it using the Alarm Script Wizard once it has been modified. See "Alarm Script Wizard" on page 717.

Multiple scripts

An example of a script file that contains multiple scripts is *sample_an_script.txt*, which is also included with your OTM software. A printout of this script appears in "Sample Alarm Notification script file" on page C-7 of Appendix C, "Control files included with alarm notification." If you are using this method, you define a separate script for each activity. For example, you define a script for all e-mail notifications, a second script for all console notifications, and a third script for all pager notifications. Each script can have multiple rules and functions.

Note: Nortel Networks recommends that you save a copy the file *sample_an_script.txt* under a new name (for example *notify.txt*), and modify the copy of the file to create your scripts.

A portion of the sample Alarm Notification script file *sample_an_script.txt* follows. You should add your scripts after the following sections of the file:

```
// ********************************************************************************************
// Map severities from the various traps that OTM receives into a standard severity list.
// ********************************************************************************************

counter $NormalizedSeverity := 0;

counter Undetermined        := 0;
counter Critical            := 1;
counter Major               := 2;
counter Minor               := 3;
counter Warning             := 4;
counter Info                := 5;
counter Cleared             := 6;
counter Unknown             := 7;

// ============================================================================
//                            Map OTM severities
// ============================================================================
// 1->Critical;2->Major;3->Minor;4->Info;5->Info;6->Cleared;7->Unknown;x->Undetermined

script AssignOTMSeverities when ( $CurrentTrapDevice = "OTM" ) {
     function assignit() {
          if ($Severity=Critical) {
               $NormalizedSeverity:=Critical;
          }else{ if ($Severity=Major) {
               $NormalizedSeverity:=Major;
          }else{ if ($Severity=Minor) {
               $NormalizedSeverity:=Minor;
          }else{ if ($Severity=Info) {
               $NormalizedSeverity:=Info;
          }else{ if ($Severity=Unknown) {
               $NormalizedSeverity:=Unknown;
          }else{ if ($Severity=Warning) {
               $NormalizedSeverity:=Warning;
          }else{ if ($Severity=Cleared){
               $NormalizedSeverity:=Cleared;
          }else{
               $NormalizedSeverity:=Undetermined;
          }}}}}}}
     }
```

```
     rule assign_severity {
          if ($CurrentTrapDevice="OTM") {
               assignit();
          }
     }
}

// ==========================================================================
//       Map severities from Meridian1 and Call Server Open Alarms
// ==========================================================================
// 1->Minor;2->Major;3->Critical;4->Unknown;5->Warning;6->Clear;7->Undetermined;x->Info

script convertM1Severities when ( $CurrentTrapDevice = "Meridian1" or
$CurrentTrapDevice ="CALL_SERVER") {
     function convertit() {
          if ($Severity=1){
               $NormalizedSeverity:=Minor;
          }else{ if ($Severity=2){
               $NormalizedSeverity:=Major;
          }else{ if ($Severity=3){
               $NormalizedSeverity:=Critical;
          }else{ if ($Severity=4){
               $NormalizedSeverity:=Unknown;
          }else{ if ($Severity=5){
               $NormalizedSeverity:=Warning;
          }else{ if ($Severity=6){
               $NormalizedSeverity:=Cleared;
          }else{ if ($Severity=7){
               $NormalizedSeverity:=Undetermined;
          }else{
               $NormalizedSeverity:=Info;
          }}}}}}}
     }
     rule severity_conversion {
          if ( $CurrentTrapDevice = "Meridian1" or $CurrentTrapDevice = "CALL_SERVER"){
               convertit();
          }
     }
}

// ==========================================================================
//   Map severities from devices other than OTM, Meridian1, and Call Server
// ==========================================================================
//1->Critical;2->Major;3->Minor;4->(CallPilot::Info, Warning);
//5->(CallPilot::Unknown, Cleared);x->Undetermined

script convertSeverities when ($CurrentTrapDevice!="OTM" and $CurrentTrapDevice!="Meridian1"
                               and $CurrentTrapDevice!="CALL_SERVER") {

     function convertit() {
          if ($Severity=1) {
               $NormalizedSeverity:=Critical;
          }else{ if ($Severity=2){
               $NormalizedSeverity:=Major;
          }else{ if ($Severity=3){
               $NormalizedSeverity:=Minor;
          }else{ if ($Severity=4){
               if ($CurrentTrapDevice="CALL_PILOT"){
                    $NormalizedSeverity:=Info;
               }else{
                    $NormalizedSeverity:=Warning;
               }
          }else{ if ($Severity=5){
               if ($CurrentTrapDevice="CALL_PILOT"){
                    $NormalizedSeverity:=Unknown;
               }else{
                    $NormalizedSeverity:=Cleared;
               }
          }else{
               $NormalizedSeverity:=Undetermined;
          }}}}}
```

```
    }

    rule severity_conversion {
        if ($CurrentTrapDevice!="OTM" and $CurrentTrapDevice!="Meridian1"
                and $CurrentTrapDevice!="CALL_SERVER") {
                    convertit();
        }
    }
}


// ********************************************************************************************
//                                    Assign $NameSpace
// ********************************************************************************************

counter nsOtm               := 1; // Originated from an OTM
counter nsMeridian1         := 2;
counter nsCallPilot         := 3;
counter nsMeridianMail      := 4;
counter nsSl100             := 5;
counter nsPassport          := 6;
counter nsItg               := 7;
counter nsBravo             := 8;
counter nsIss7              := 9;
counter nsMDECT             := 10;
counter nsCallServer        := 11;
counter nsMediaCard         := 12;
counter nsSigServer         := 13;
counter nsSccs              := 14;
counter nsMeridianMailLink  := 15;
counter nsGenericOrUnknown  := 16;


script assignNameSpace {

    function ns() {
        if ($CurrentTrapDevice="OTM") {
            // Original $CurrentTrapDevice is retained
        }else{ if ( $CurrentTrapDevice = "Meridian1" ) {
            $NameSpace := nsMeridian1;
        }else{ if ( $CurrentTrapDevice = "CALL_PILOT" ) {
            $NameSpace := nsCallPilot;
        }else{ if ( $CurrentTrapDevice = "MMCS" ) {
            $NameSpace := nsMeridianMail;
        }else{ if ( $CurrentTrapDevice = "ITG"
                or $CurrentTrapDevice = "ITG_ISDN_TRK"
                or $CurrentTrapDevice = "ITG_IP_LINE"
                or $CurrentTrapDevice = "ITG_IP_PHONE" )
        {
                $NameSpace := nsItg;
        }else{ if ( $CurrentTrapDevice = "BRAVO" ) {
            $NameSpace := nsBravo;
        }else{ if ( $CurrentTrapDevice = "ISS7" ) {
            $NameSpace := nsIss7;
        }else{ if ( $CurrentTrapDevice = "MDECT" ) {
            $NameSpace := nsMdect;
        }else{ if ( $CurrentTrapDevice = "SCCS" ) {
            $NameSpace := nsSccs;
        }else{ if ( $CurrentTrapDevice = "CALL_SERVER" ) {
            $NameSpace := nsCallServer;
        }else{ if ( $CurrentTrapDevice = "MEDIA_CARD" ) {
            $NameSpace := nsMediaCard;
        }else{ if ( $CurrentTrapDevice = "SIGNALLING_SERVER" ) {
            $NameSpace := nsSigServer;
        }else{
            $NameSpace := nsGenericOrUnknown;
        }}}}}}}}}}}}
    }

    rule ns1 {
        if (1) {
```

```
                ns();
            }
        }
}
```

Alarm Script Wizard

The Alarm Script Wizard is a graphical easy-to-use tool that enables you to define, consult, and edit the notifications sent when OTM receives an alarm message.

Note: The Alarm Script Wizard generates scripts that can be compiled by the Alarm Notification script compiler. The Script Wizard is not able to open scripts that are not generated by it. If you edit a generated script file, the script is no longer understood by Script Wizard.

Use the Alarm Script Wizard to create basic script files. To define more elaborate notification rules, see "Scripting" on page 692.

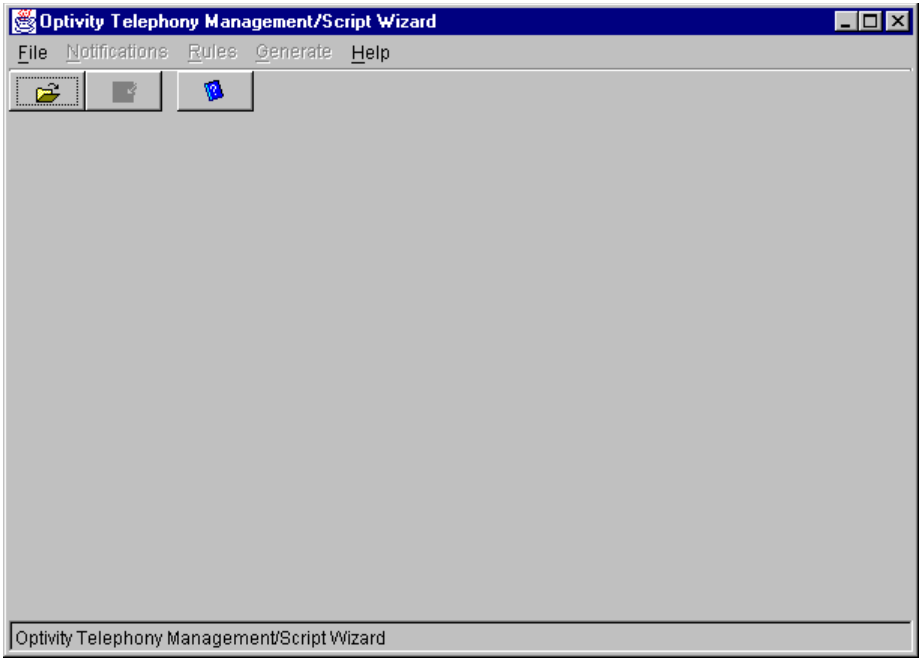
Starting the Alarm Script Wizard

To run the Script Wizard:

1 From the Windows Start Menu, choose Programs > Alarm Script Wizard.

The Alarm Script Wizard window opens (Figure 339).

Figure 339 Alarm Script Wizard

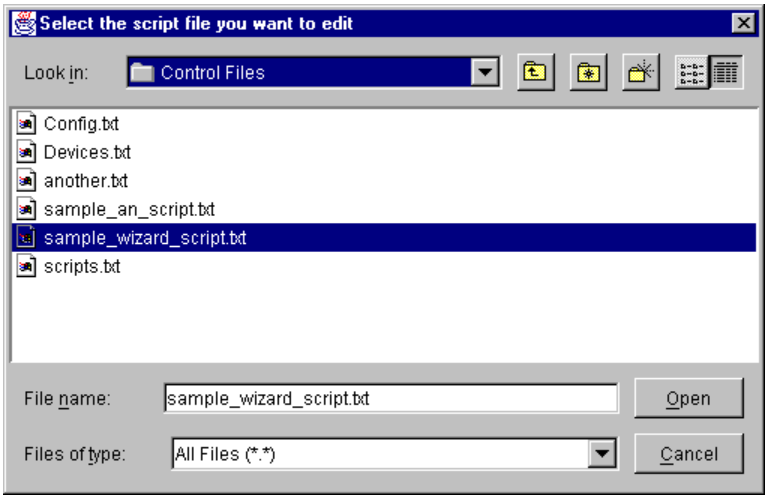


2 To open a script file, do one of the following:

- Choose File > Open
- On the toolbar, click Open.

The Select script file window opens (Figure 340).

Figure 340 Select the script file you want to edit dialog box



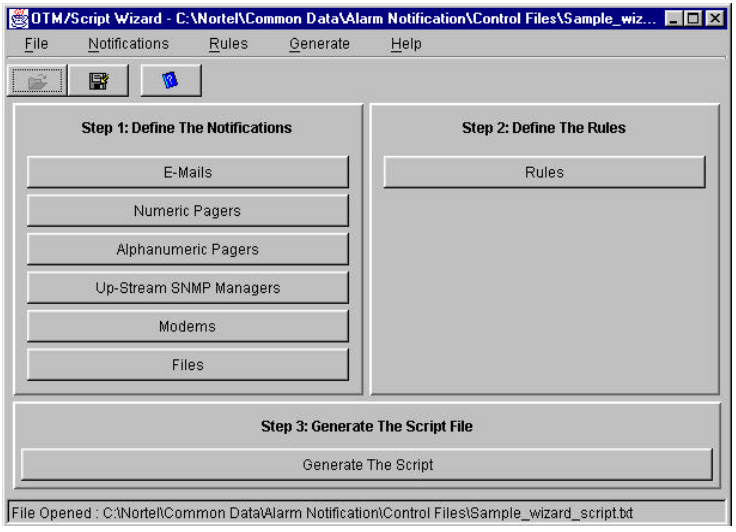
3 Select the appropriate filename.

4 Click Open.

The script file is loaded into the Script Wizard.

When the existing script is loaded or a new script is created, the main Script Wizard screen opens (Figure 341).

Figure 341 Main Script Wizard window



Note: To view information about the menus, toolbar, buttons, and other functions available in the Script Wizard window, use online Help.

The three major parts of the main Script Wizard window are identified as:

- Step 1: Define The Notifications
- Step 2: Define The Rules
- Step 3: Generate The Script File

In Step 1, you select the type of notification that you want to generate. See "Defining the Notifications" next for information on completing Step 1.

In Step 2, you defines the rules that determine when a notification is to be sent. See "Defining the Rules" on page 721.

The final step is to generate the script. See "Generating the Script File" on page 724.

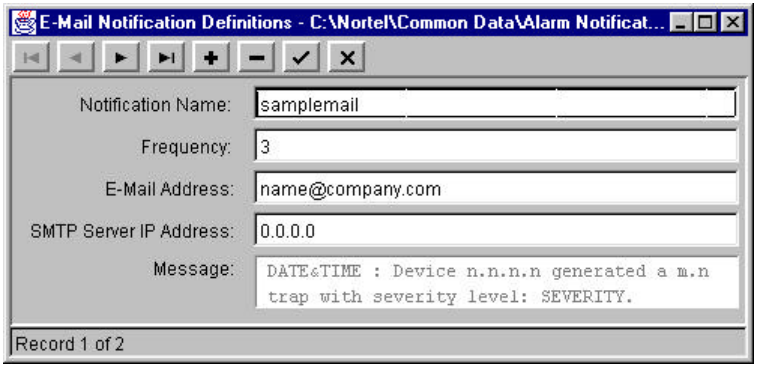
Defining the Notifications

A list of available notification types is shown in the Main Script Wizard window. There are six available notification types:

- E-Mails
- Numeric Pagers
- Alphanumeric Pagers
- Up-Stream SNMP Managers
- Modems
- Files

Click on one of the notification types to open the corresponding definitions window. You use the definition window to edit notification parameters. Figure 342 shows the E-Mail Notification Definition window.

Figure 342 E-Mail Notification Definitions window



Note: To view information about the menus, toolbar, buttons, and other functions available in the Definition windows, use online Help.

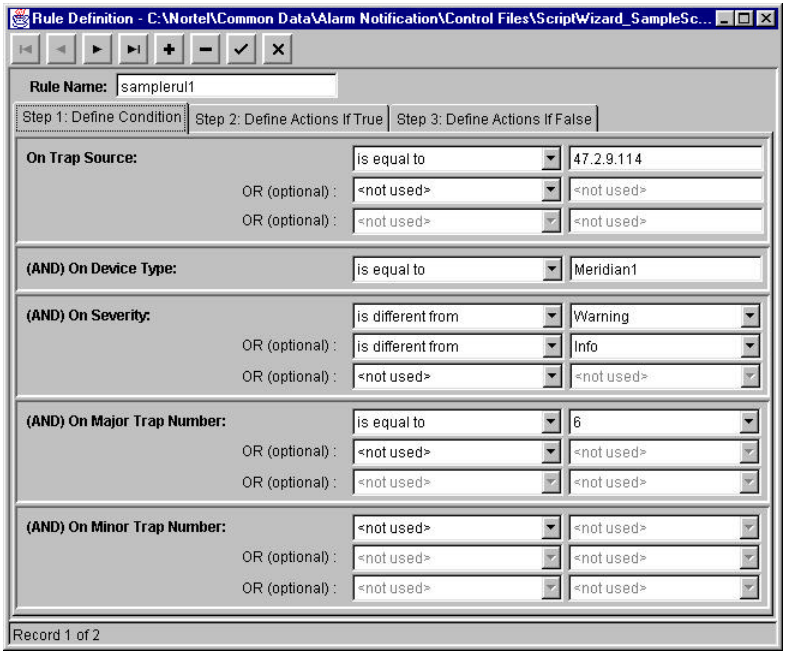
Note: A Frequency is associated with each notification. The number entered in the Frequency field indicates the number of times the notification is called by the program before the action is actually executed. In the example shown in Figure 342, the E-Mail will be sent after the third occurrence of the notification.

Defining the Rules

Rules allow you to define actions that will be applied to a given event or condition. Each rule is defined by a unique Rule Name. You can add, remove, and edit a rule. Rule definition is divided into three sections. The first section, Define Condition, is shown in Figure 343. This section defines a test to be applied to each alarm processed by the application. A condition is composed of five segments or subconditions.

Note: To view information about the menus, toolbar, buttons, and other functions available in the Define Condition window, use online Help.

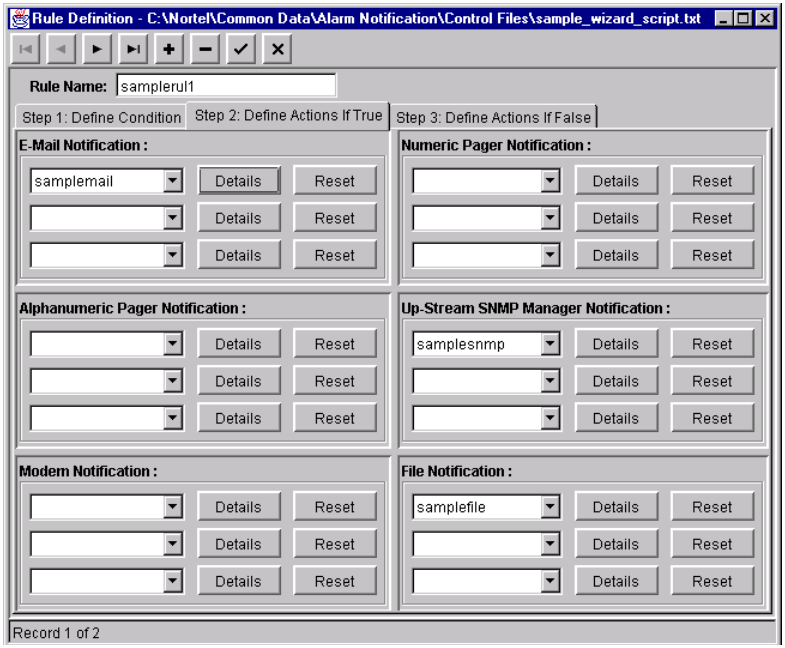
Figure 343 Define Condition window



The second section, Define Actions If True, describes the actions to be taken if the condition defined in the first section is true. This section is shown in Figure 344. The action should be a reference to an already defined notification (Figure 342). A minimum of one action is required. You may enter up to 3 actions for each type of notification for a total of 18 actions.

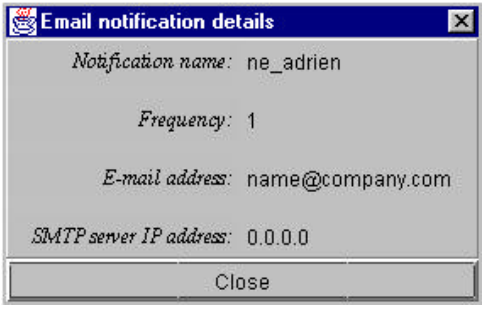
Note: To view information about the menus, toolbar, buttons, and other functions available in the Define Actions If True window, use online Help.

Figure 344 Define Actions If True window



Click Details to display the notification definition (Figure 345).

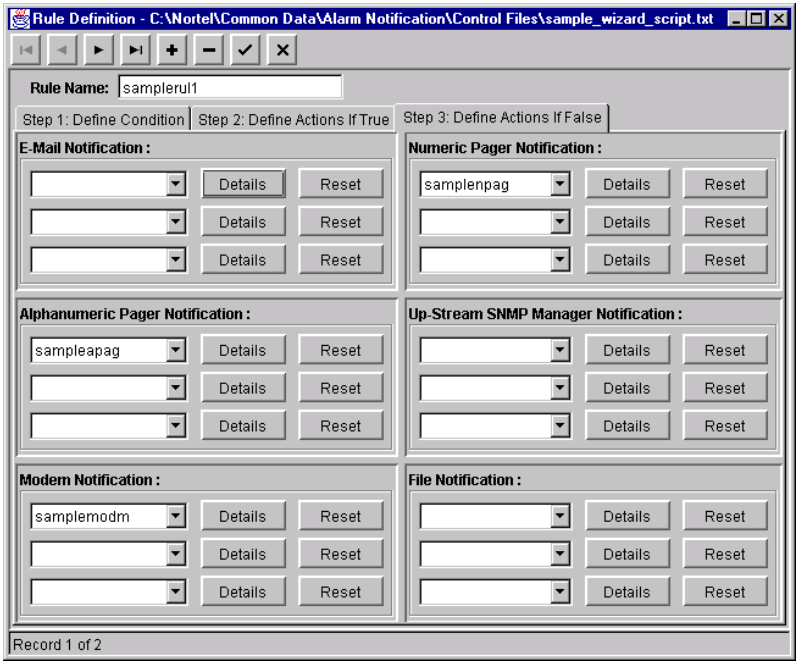
Figure 345 Email notification details



The third section, Define Actions If False, describes the actions to be taken if the condition defined in the first section is false. This section is shown in Figure 346. You are not required to enter any information in this section, but you may enter up to three actions for each type of notification.

Note: To view information about the menus, toolbar, buttons, and other functions available in the Define Actions If False window, use online Help.

Figure 346 Define Actions If False window



Generating the Script File

The final step in the Script Wizard is to generate the script file.

➔ In the Main Script Wizard window (Figure 341 on page 719), click Generate The Script File.

A script file is generated using the conditions, actions, and notifications that you entered.

Sample Alarm Notification scripts

This section shows portions of a sample script to illustrate scripting syntax that performs common alarm notification tasks.

Log file

This script uses the file notification and saves all events to the filename "sample_log.txt" in the defined location.

Note: Windows "long" file names are allowed in the scripts but are truncated when the system saves the file. Keep your file names to the standard 8-character length.

```
notification file sample_file {
   filename:="c:\sample_log.txt";
}
```

Numeric pager

This script uses the npager notification. Customize this script by typing in your numeric pager number:

```
notification npager sample_numeric_pager {
   phone:="9,555-1212";
}
```

Alphanumeric pager

This script uses the apager notification. Customize this script by typing in your alphanumeric pager number and Personal Identification Number (PIN).

```
notification apager sample_alpha_pager {
   phone:="9,555-1212";
   pin:="101565";
}
```

Severity code descriptions

This script examines error codes generated by the Meridian 1 system and assigns descriptive text to them. This portion of the script uses the counter data type and the send alarm notification to send alarm notifications to a file and a pager. Note the use of rule and send syntax. Note the $Current... references to configuration file entries. See "Example of configuration file entries for Meridian 1 systems:" on page 689.

```
/* Provide variables to map M1 severity values into words */
counter info:=0,minor:=1,major:=2,critical:=3,debug:=4;
script SampleScript {
counter bug3456:=0;

/* This rule looks for critical M1 events */
rule check_critical {
     if ($CurrentTrapDevice="Meridian1" and $CurrentAlarmSeverity=critical)
```

Note: The *if* statement ensures that only critical alarms from the Meridian 1 system are processed.

```
{
 /* print event to console */
send(con,"M1 alarm: ",
     $CurrentTrapSource," - " ,          // Name of this M1
     $CurrentAlarmErrorCode," - " ,      // M1 error code (i.e., BUG1234)
     $CurrentAlarmTime," - " ,           // Timestamp from M1
     $CurrentAlarmDescriptiveText," - ",    // Text with error message
     $CurrentAlarmOperatorData);        // More text with error message
```

Note: The script displays information about the Meridian 1 system alarm in the console pane, including the system where the alarm originated, the error code of the alarm, the time of the alarm, any descriptive text associated with the alarm, and other text associated with the error alarm.

```
/* append event to log file */
send(sample_file,"M1 alarm: ",
     $CurrentTrapSource," - " ,       // Name of this M1
     $CurrentAlarmErrorCode," - " ,      // M1 error code (i.e., BUG1234)
     $CurrentAlarmTime," - " ,           // Timestamp from M1
     $CurrentAlarmDescriptiveText," - ", // Text with error message
     $CurrentAlarmOperatorData);         // More text with error message
```

Note: The script saves to a named file on disk the same information about the Meridian 1 system alarm that was displayed on the console.

```
/* optionally send message to alpha pager */
send(sample_alpha_pager,$CurrentTrapSource,":",$CurrentAlarmCode,"!");
*/
    }
}
```

Note: The send command contacts the pager named as sample_alpha_pager with the error information “M1 : BUG1234” where M1 is the name of the Meridian 1 system that has the error and BUG1234 is the error type.

Specific system events

This script examines error codes generated by a Meridian 1 system for a specific event code and counts the number of occurrences for this event. For this example, BUG3456 is the specific event code. This portion of the script displays to the console the time when the error occurred. Customize this script by typing in your error code. This script may be of use if you are trying to troubleshoot the system for a specific problem.

This rule is named check_specific_event and examines events from the device named Meridian 1 for error code BUG3456. If this event is detected, the console displays “Found BUG3456 at <alarm time>” where <alarm time> is the timestamp provided by the system.

This script uses the `rule` syntax.

```
rule check_specific_event {
      if ($CurrentTrapDevice="Meridian1" and
$CurrentAlarmErrorCode="BUG3456")
         {
         send(con,bug3456,")
Found ",$CurrentAlarmErrorCode," at ",$CurrentAlarmTime);
         bug3456:=bug3456+1;
         }
   }
```

Combining scripts

Several scripts are often found in a single script file. The sample scripts in this section are combined into a single text file named *Script.txt* included with the application. See “Script files” on page 7. Note the use of comments to document the various portions of the script.

Scripting notes

The scripting language available with Alarm Notification allows tremendous flexibility and functionality in defining how the application processes events from connected systems. You can use any text editor, such as Notepad, to write your script. Use the Control Files tab in the Alarm Notification Run Options dialog box to specify the script and other control files you will use.

Customized scripts are interpreted by the Alarm Notification application. Errors in the script are noted and related error messages appear in the console pane in the Alarm Notification window. Scripting error messages include the line number where the error occurred, as counted from the top of the text file, as well as a short error description.

Chapter 6
Maintenance applications

Overview

Meridian 1 and Succession CSE 1000 systems have over 600 overlay-based maintenance commands that support their capabilities. OTM Maintenance Windows eliminates the need to remember or look up any overlay-based commands. The 37 Maintenance Overlays are grouped into 8 hardware-related windows to allow you to perform all maintenance tasks. The interface provides a comprehensive view of Meridian 1 and Succession CSE 1000 system hardware configuration with the following benefits:

- See the equipped hardware at a glance.
  The hardware list works like a spread sheet data view—you can scroll through the list, sort the list, and select items for changing.
- Select an item from the list and apply a Maintenance command from the right-mouse button pop-up menu.
- Print the list or copy it to a spreadsheet.
- Select a TN or DN and print the TN/DN block.
- See Enabled/Disabled status in real time.

For example, to disable a network loop on a Meridian 1 system, you click on the loop number and choose the Disable command from the menu. Maintenance Windows loads the appropriate overlay, executes the command, and displays the result of the action in a window that you can scroll and save.

About this chapter

This chapter provides you with an introduction to the OTM Maintenance Windows application as well as an overview of its major functions.

This section describes functions that are common to all of the Maintenance Windows applications. Read this section thoroughly to help you use these applications efficiently.

Subsequent sections focus on the eight hardware-related windows. A section is included on the Inventory Reporting application, which is based on LD 117. For information on the web interface to maintenance applications, see "Web-based maintenance" on page 741.

Help

This chapter does not discuss each Maintenance Windows function and command in detail. It only discusses the major functions and how they are accessed. For detailed information on each Maintenance Windows function, use the online Help function. You can use the Help function to obtain help for topics either directly or through its index and word-search functions. While running Maintenance Windows, you can obtain context-sensitive Help on any topic you require by simply clicking Help from a specific dialog box or window.

To obtain help for a topic, click Help from the currently selected dialog box or window. This accesses the Windows Help function and displays context-sensitive Help information on the current topic.

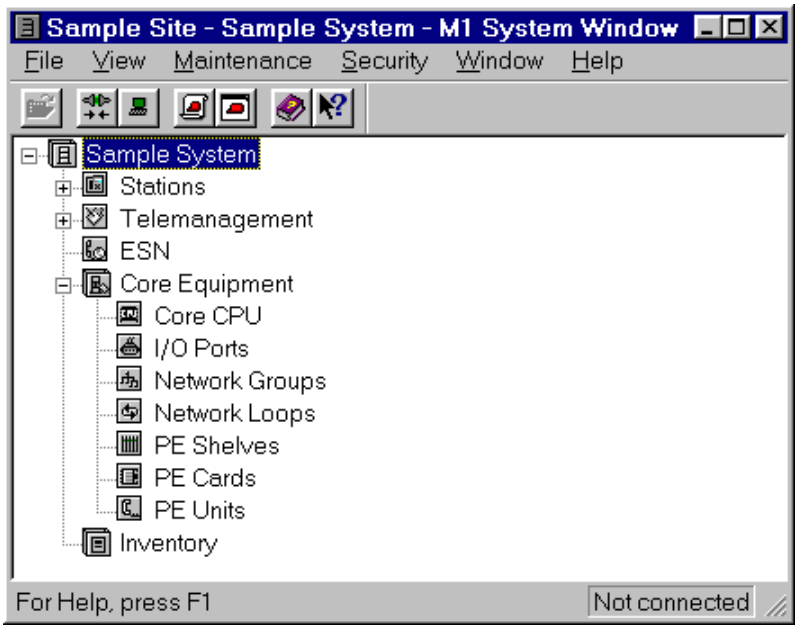
Once you access Help, scroll through the other Maintenance Windows Help topics to search for a specific topic, or print the Help information.

To view a list of Help topics for Maintenance Windows, click Contents from the Help drop-down menu. Choose from one of the items in this list to load the Help file and display its information.

Launching a Maintenance Windows application

You launch Maintenance Windows applications from the OTM System window. Figure 347 shows the OTM System window.

Figure 347 OTM System window

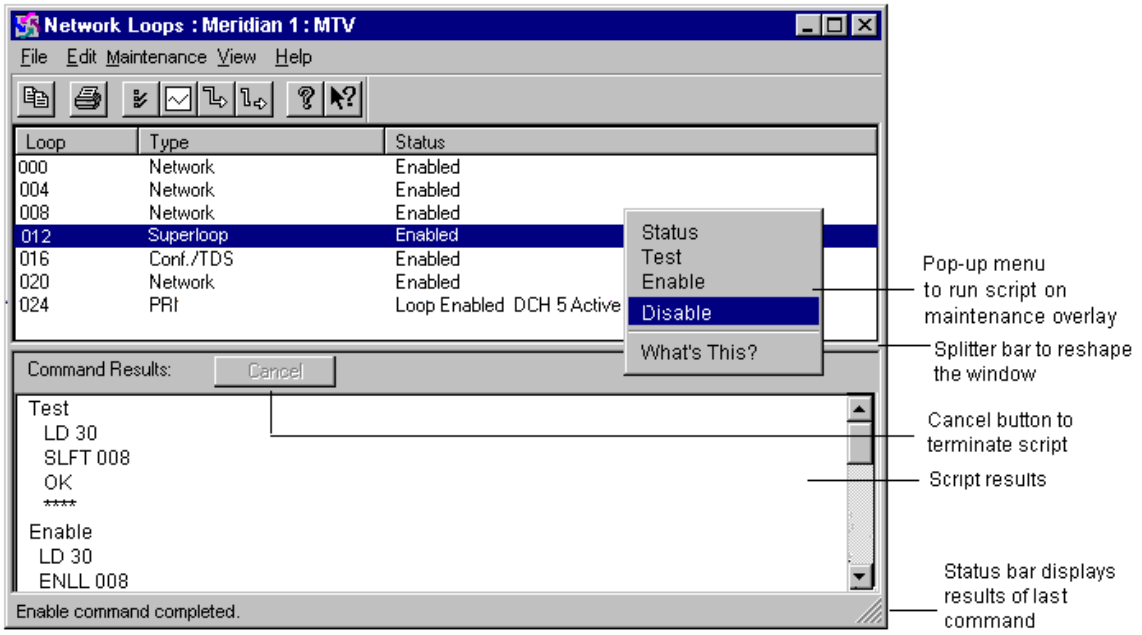


Under Core Equipment, double-click the icon for the desired Maintenance Windows application to launch that application. The appropriate window appears.

Note: Each application is described in detail in a separate chapter in this document.

For example, double-click the Network Loops icon to open the Network Loops window (Figure 348). Each loop is listed, along with descriptive information. From this window, you can sort this information, select a loop and run maintenance commands, and get Help on the selected loop.

Figure 348 Network Loops window



Maintenance Windows applications

OTM Maintenance Windows includes the following applications:

Core CPU

The CPU window displays the status of cards in both CPU shelves on the selected Meridian 1 system, or the Call Server on the selected Succession CSE 1000 system. You can perform actions and tasks on cards in the Meridian 1 system's CPU shelf or the Succession CSE 1000 system's Call Server from the CPU window.

I/O Ports

The I/O (Input/Output) Ports window displays the status of all I/O ports on the Meridian 1 or Succession CSE 1000 system, and allows you to execute actions and tasks on a selected port.

Network Groups

The Network Groups window displays the status of all Network Group Cards on the Meridian 1 system, and allows you to execute actions and tasks on a selected card.

Network Loops

The Network Loops window lists all the network loops on the Meridian 1 system. It allows you to execute actions and tasks on a selected loop by choosing commands from the Maintenance menu.

PE Shelves

The PE Shelves window displays the status of the Peripheral Controller Cards for each PE Shelf on a Meridian 1 system, and allows you to execute actions and tasks on a selected card.

PE Cards

The PE Cards window displays the status of all EPE and IPE Peripheral Equipment cards for each PE Shelf on a Meridian 1, and allows you to execute actions and tasks on a selected card. The PE Cards window is also used to display the status of the circuit cards associated with each of the Media Gateways on a Succession CSE 1000 system.

PE Units

The PE Units window displays information for all PE units and Directory Numbers on the Meridian 1 or Succession CSE 1000 system, and allows you to execute actions and tasks on a selected unit.

B- and D-channels

The PRI/PRI2 B- and D-channels window displays the B- and D-channels on the selected digital trunk (for example, PRI loop), and allows you to execute actions and tasks on a selected channel.

Option 11C Line Size Expansion

The Option 11C Line Size Expansion increases the Option 11C line capacity from the current three expansion cabinet configuration to a maximum of five expansion cabinets. Along with this expansion, the Option 11C supports an additional 20 IPE cards.

Option 11C Mini

The Option 11C Mini affords full Meridian 1 feature functionality to the 20 to 80 line PBX customer. The three mounting options, wall, rack, and table top, are fully OTM and X11 system software compatible. There is an option for an expansion cabinet that supports an additional four peripheral slots. OTM recognizes this system type as an Option 11C in the Navigator and System Properties windows.

Inventory Reporting

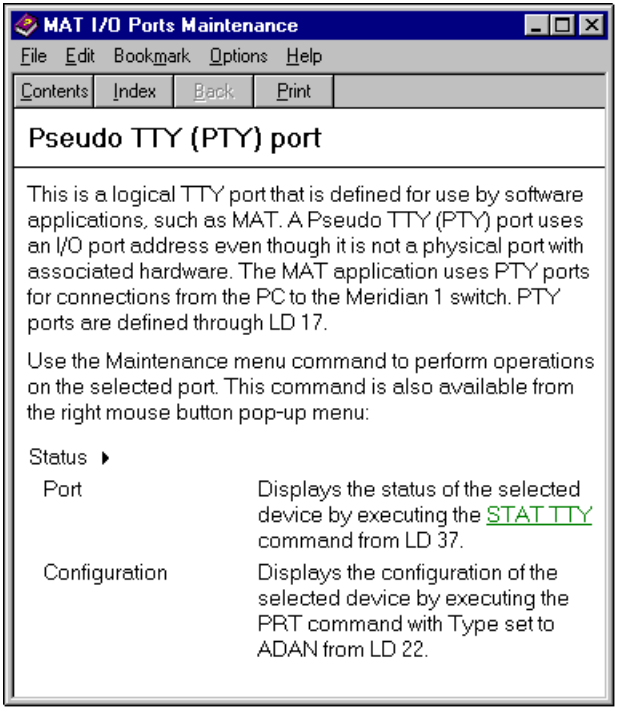
The Inventory Reporting window allows you to generate and download inventory files listing cards and telephone sets installed on a Meridian 1 system.

Full documentation in online Help

Each Maintenance Windows application is fully documented in the online Help. Each menu command, button, and field is documented. Be sure to consult the online Help if you want to get more detail about any of these items.

For Help on an object in a list, select the item and use the right mouse button to select What's This Help. Descriptive information on the item appears. For example, ask for help on a TTY object and the window shown in Figure 349 appears.

Figure 349 "What's This" Help on PTY



Performing a maintenance task on an item

To perform a maintenance task on a card, loop, shelf, and so on, follow these steps:

1. Open the appropriate Maintenance Windows application.
2. Select the item from the list.
3. Choose a command from the Maintenance menu, the toolbar, or by using the right mouse button pop-up menu. A confirmation dialog box appears for potentially destructive commands.
4. The script appears in the command result section of the window, followed by the overlay output.

Meridian 1 or Succession CSE 1000 system connection

Maintenance window applications connect to the Meridian 1 or Succession CSE 1000 system by a Pseudo TTY (PTY). A PTY is a “software only” TTY that uses an I/O port address. PTYs appear in the I/O Ports window. One PTY is used for all Maintenance Windows users connected to the system (even from multiple PCs). One PTY is used for each System Terminal connection, even if it is not logged in to the overlays.

Queueing scripts

If the Meridian 1 or Succession CSE 1000 system is currently processing another user’s script, your command is placed in a queue. You must wait until your script is finished processing before you can choose another Maintenance menu command. However, while you are waiting, you can perform maintenance tasks on another type of system component using a different Maintenance Windows application.

Cancelling scripts

To remove a command from the queue or to cancel a command in progress, click Cancel. Pressing the <Esc> key also removes or cancels a command. If a command is in progress, Cancel aborts the current command and overlay by sending four stars (****).

Refreshing the hardware status in the list

The hardware status in the list is updated as follows:

- The list is updated every few seconds, even if there is no activity on the OTM PC.

Note: You specify the interval on a per-window basis. See the About Maintenance Windows item in the Help menu.

- The selected object status updates at every OTM PC after every script (therefore, if you disable a port from one PC, the status updates on all other PCs).

- The entire list updates after some scripts because multiple objects are affected (for example, Split CPU, Disable MSDL).
- You can manually refresh the hardware status display by pressing <F5>.

Menu commands

Each menu command is fully documented in online Help. The Status Bar provides useful information on the script to run (see "Using the Status Bar" on page 739).

You can also read What's This Help on any menu command. Press <Shift><F1> (or select What's This from the Help menu), and then select the command for full online documentation.

The Maintenance menu is unique for each hardware application, and is also fully documented in online Help. In addition to the information provided in the Status Bar, you can read What's This Help on any menu command as described above.

Getting help on an error message

Sometimes, a maintenance command results in a Meridian 1 or Succession CSE 1000 system error message, such as NWS010.

To get help on the last error message (even if it has scrolled out of view):

➔ Choose Error Message from the Help menu.

To get help on a previously displayed error message:

- Use the scroll bar to move to the error message. Double-click the error message.

  or

- Select the error and choose Error Message from the Help menu.

  or

- Press <Ctrl>E for information on the last error message.

Navigating within the maintenance window

You can use the maintenance window in the following ways:

Customizing the window and columns

- Resize the window and columns using standard Microsoft Windows controls.
- Use the horizontal or vertical scroll bars to move around in the alarm display.
- Resize the column by dragging the column divider to make more room for text.

Note: An ellipsis (...) after column text indicates there is more information than will fit in the column.

- Drag the splitter bar (which divides the window into two display areas) to change the sizes of the card list and command results display areas.

Sorting the list

By default, items are listed in an order optimized for that application. You can sort the list according to another column by clicking in that column heading. Click to sort in ascending order (an “up” arrow appears in the heading); click again for descending order (“down” arrow).

Note: For help on the definition of any column in the list, click What’s This in the Help menu, and then click the column title.

Using shortcuts

The application provides convenient keyboard equivalents for many menu selections. You can perform the following common tasks by typing the accelerator keys:

- <Ctrl>R (Status)—Displays detailed status information for the selected hardware device
- <Ctrl>T (Test)—Performs predefined tests on the selected hardware device
- <Ctrl>W (Enable)—Restores the selected hardware device to service

- <Ctrl>D (Disable)—Removes the selected hardware device from service

Using the Toolbar

The Toolbar gives you quick access to selected commands. Each button is documented in the online Help (Figure 350).

Figure 350 CPU toolbar

Using the Status Bar

To display or hide the Status Bar located at the bottom of the window, use the Status Bar command in the View menu.

The Status Bar describes actions of the menu commands as you use the mouse to navigate through menus. When you select a Maintenance menu item, the status bar displays the following information:

- Type of object selected
- First overlay command in the script

When you run a Maintenance menu command, the Status Bar describes the progress of the command while it executes. For example, the Status Bar shows "Enable command in progress" when you choose an Enable command.

The Status Bar also displays the actions of the Toolbar buttons as you move the pointer over them.

Printing

You can print Maintenance Windows information by selecting the lines to print in the list or the command results area (or the entire section), and selecting Print from the File menu. Select Print to File in the Print dialog box to export the data for use in a spreadsheet or other application.

Supported systems

Maintenance Windows is supported on Succession CSE 1000 systems, and on Meridian 1 systems with X11 Release 22 or later and the OTM Management Interface package (296).

The following Meridian 1 systems are supported:

- Option 11C
- Option 51C
- Option 61C
- Option 81
- Option 81C

It also supports the Option 11C Compact beginning with X27 Release 1.

Feature limitations

- Not all hardware maintenance commands are supported. See the tables in each Maintenance Windows application section for the list of supported hardware and commands.
- Only one user can access a maintenance overlay at a time (this is an existing limitation of the overlays). Commands issued from a maintenance window are queued if:
  - A TTY user has loaded a maintenance overlay
  - Another maintenance window (same or different user) is running a script that uses the same maintenance overlay
  - A previous command was issued from a Maintenance window (that is, you must wait until the first command is completed before issuing another)

One Pseudo TTY port is required for Maintenance Windows (regardless of the number of windows and logged-in users). Each instance of the System Terminal window (active or inactive) requires an additional Pseudo TTY port. This is in addition to the PPP/Ethernet ports required for the basic OTM PC connection.

Maintenance window menus are not context sensitive to the maintenance state of the selected Meridian 1 or Succession CSE 1000 object. For example, the enable command is not grayed out if the object is already enabled. You get the same response as entering the enable command in the overlay (usually an error message stating that the card is already enabled).

Web-based maintenance

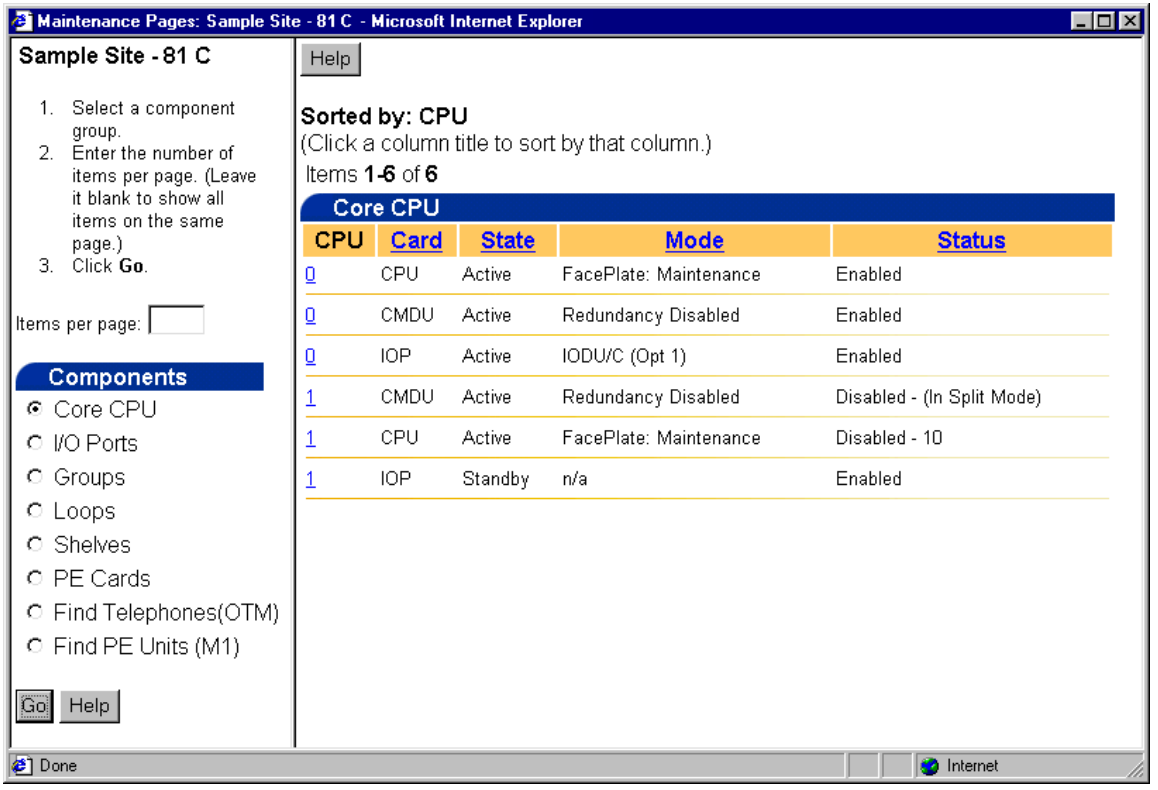
Core CPU page

To open the Core CPU page:

1. Click the Core CPU radio button.
2. Click Go.

   The Core CPU page opens (Figure 351).

Figure 351 Core CPU summary page

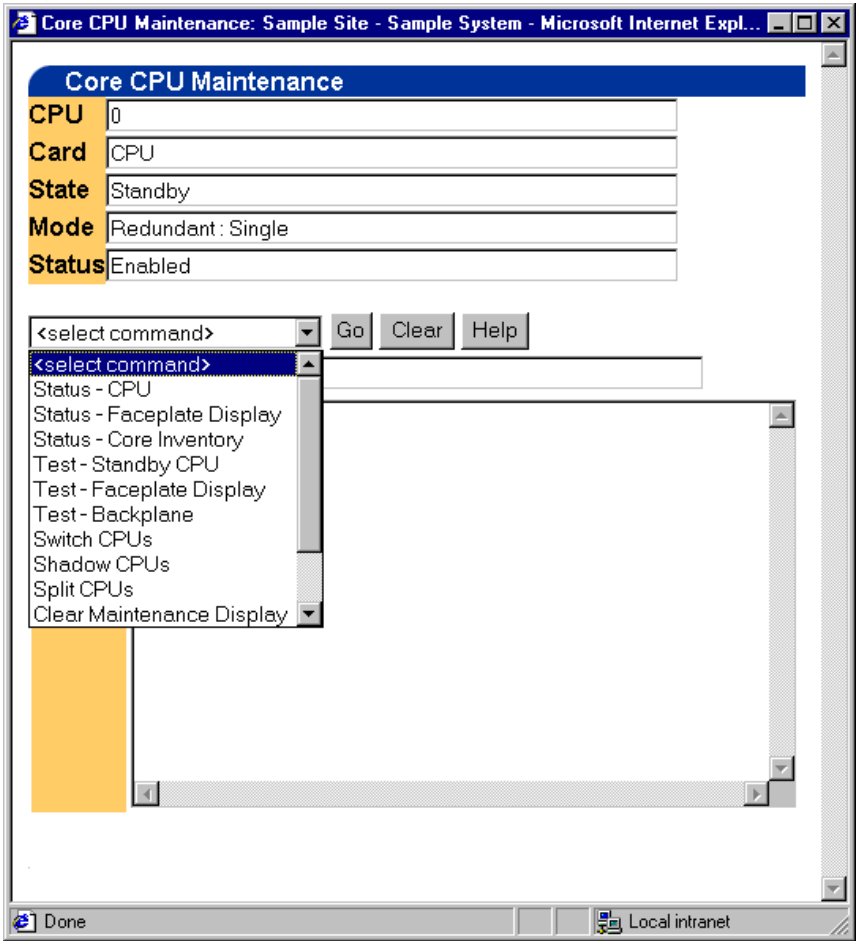


To perform maintenance operations on a CPU:

1 Click the CPU number link that corresponds to the CPU on which you want to perform maintenance operations.

The Core CPU Maintenance Page for the selected CPU opens (Figure 352).

Figure 352 Core CPU Maintenance page

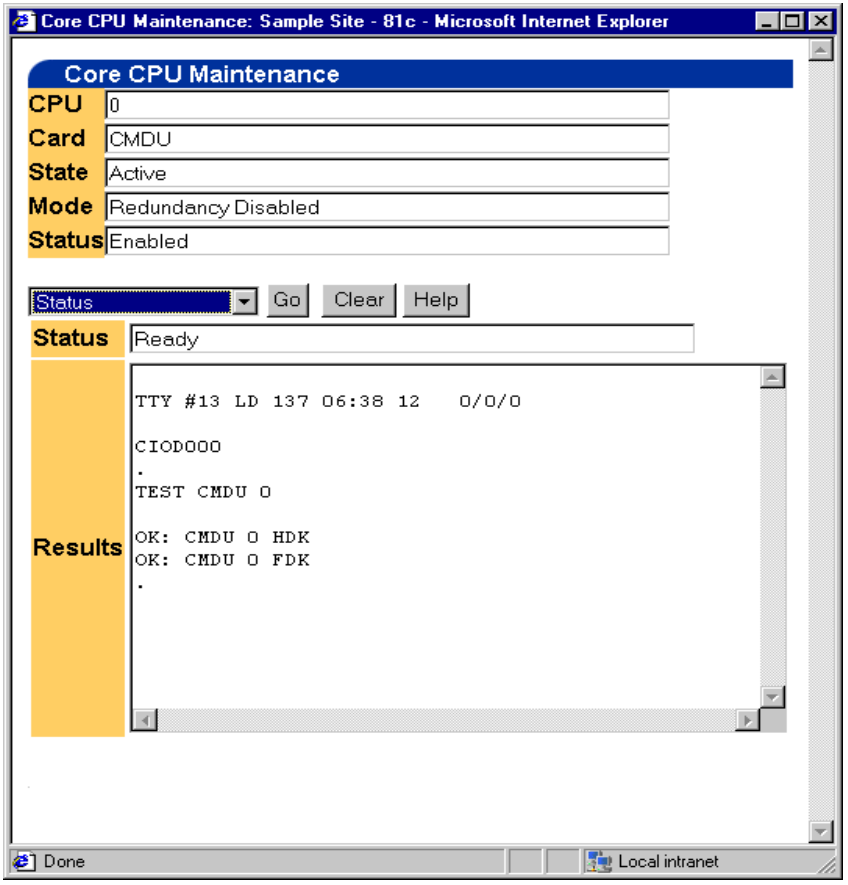


2 Select a command from the drop-down list.

3 Click Go.

The results appear in the Results frame (Figure 353).

Figure 353 Core CPU Maintenance command results



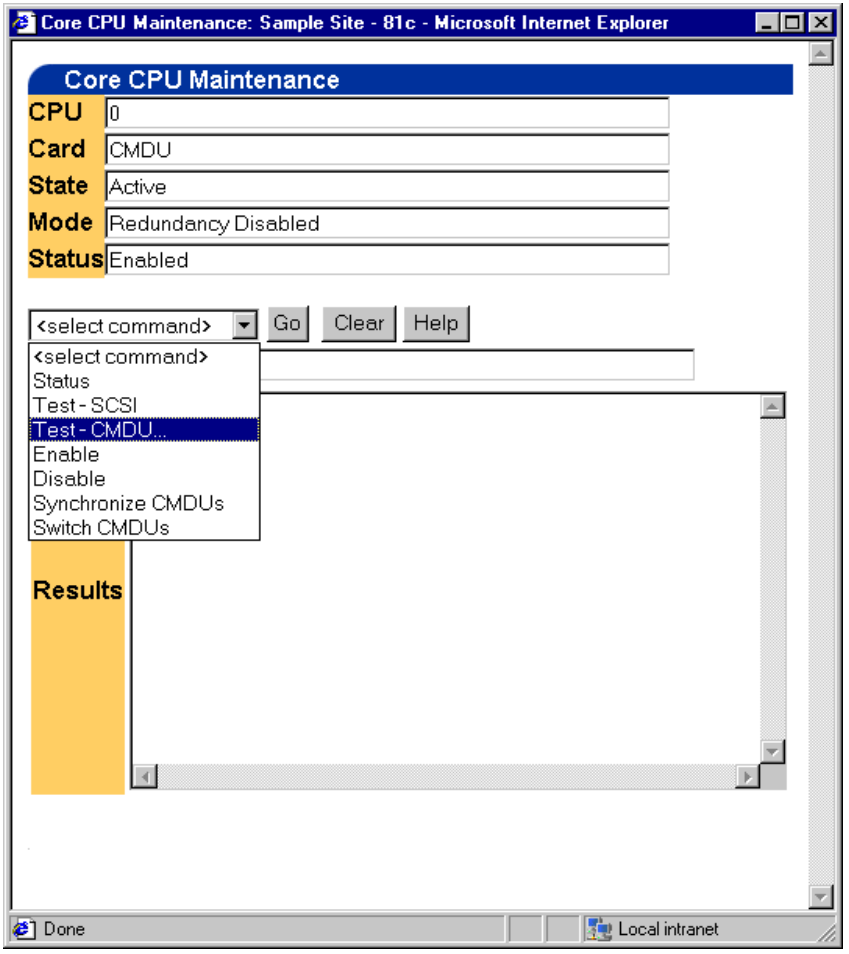
Some of the Core CPU cards require that you input additional information prior to the execution of the Go command. The following example outlines the procedure for sending maintenance commands to a CMDU.

To perform maintenance commands on a CMDU, first select a CMDU:

➔ Click the CPU number link that corresponds to the CMDU on which you want to perform maintenance commands.

The Core CPU Maintenance Page for the selected CMDU opens (Figure 354).

Figure 354 Core CPU Maintenance page for a CMDU



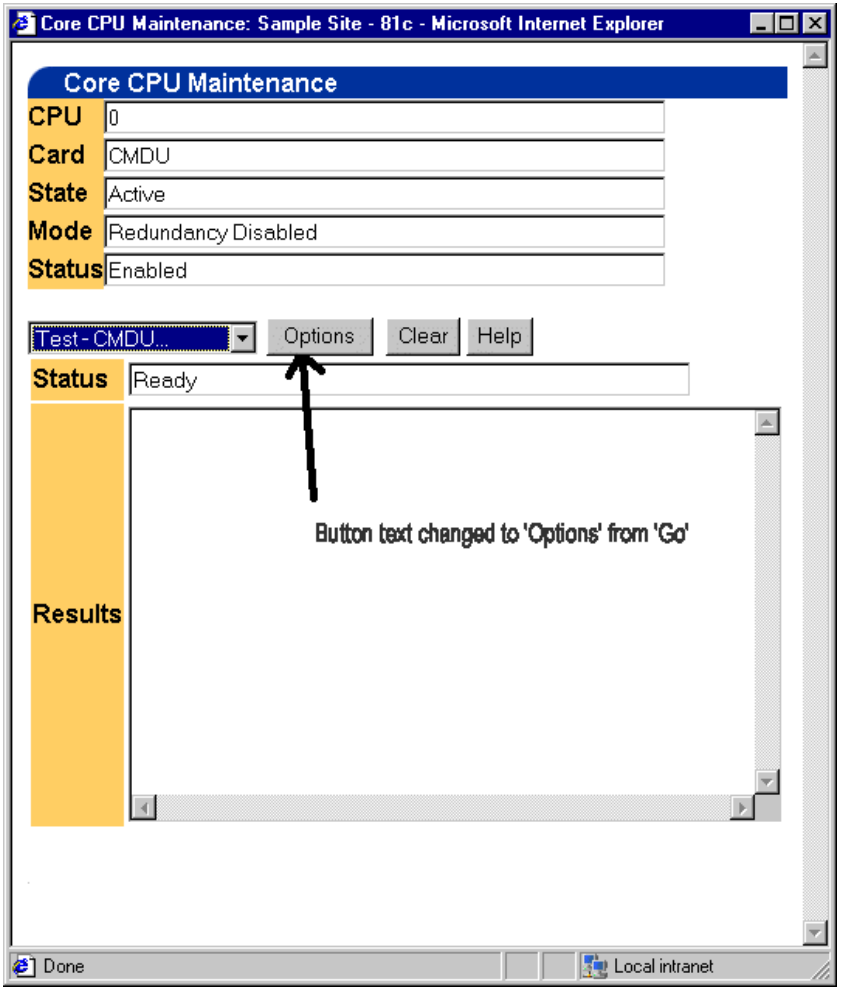
To Test the selected CMDU:

1 Select Test-CMDU from the drop-down list.

2 Click Go.

The Go button is replaced by an Options button (Figure 355).

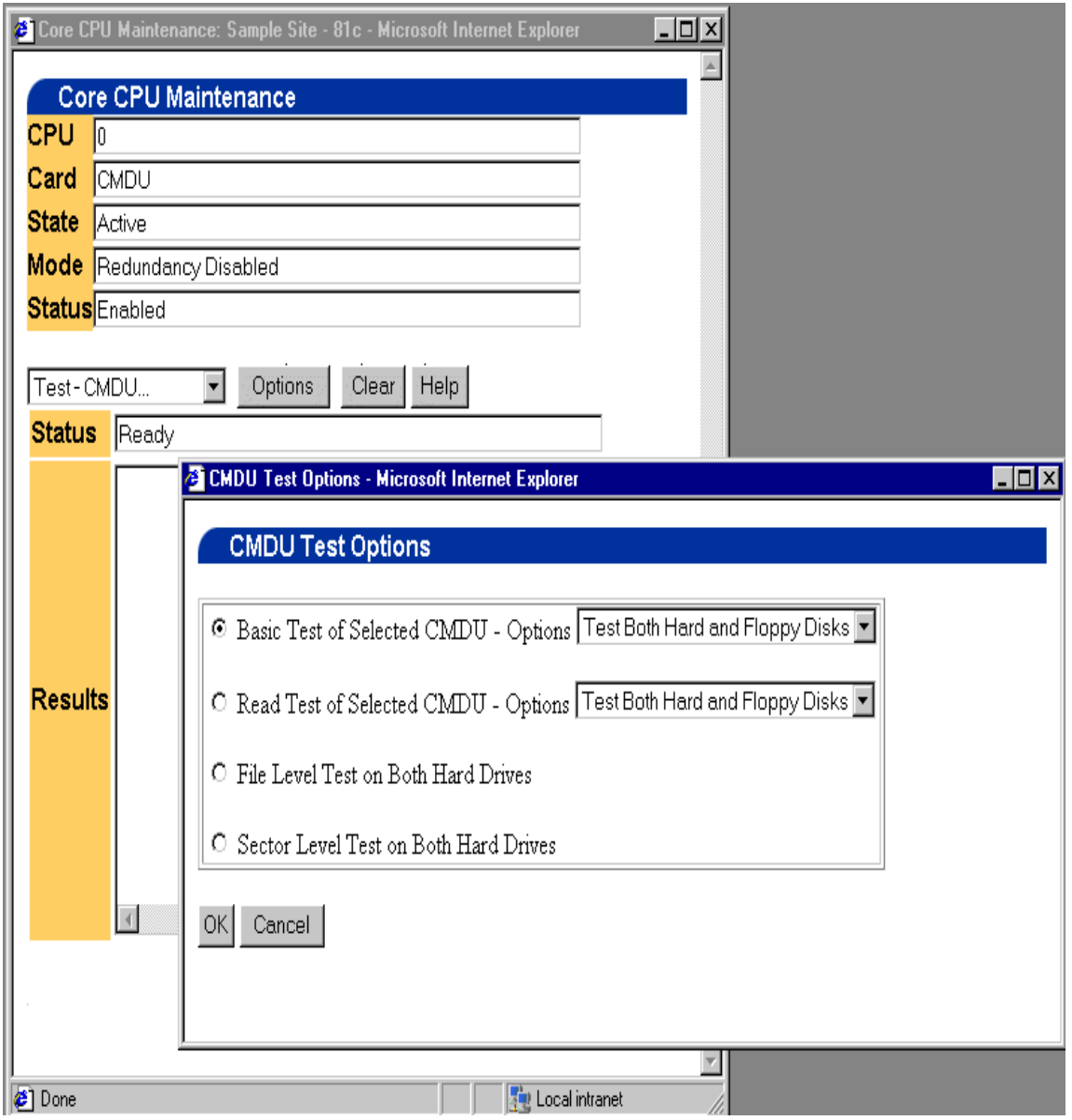
Figure 355 Core CPU Maintenance page with Test-CMDU command selected



3 Click Options.

The CMDU Test Options page appears (Figure 356).

Figure 356 CMDU Test Options



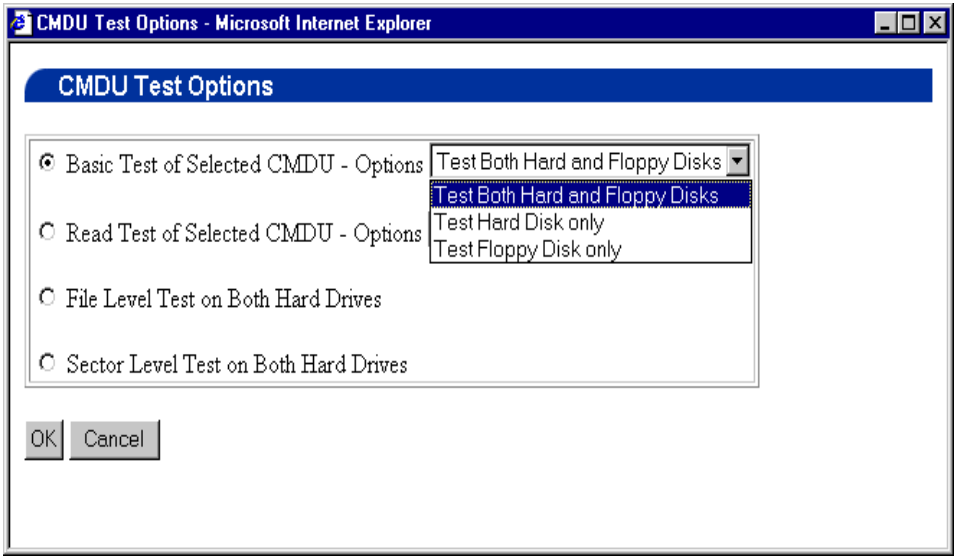
4 Click the radio button corresponding to the type of CMDU test that you want to perform.

To perform a basic test of the selected CMDU:

a Click the radio button corresponding to Basic Test of Selected CMDU.

b Select an option from the drop-down list (Figure 357).

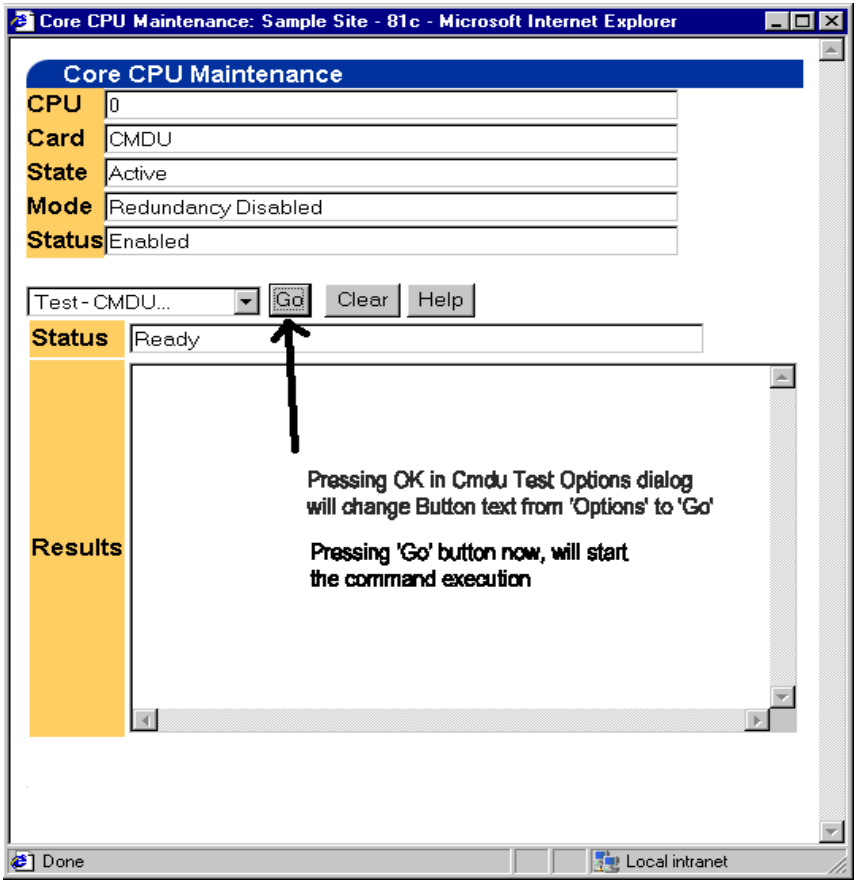
Figure 357 Basic Test of Selected CMDU - Options



c Click OK.

The Options button is replaced with a Go button (Figure 358).

Figure 358 Core CPU Maintenance page after options have been selected



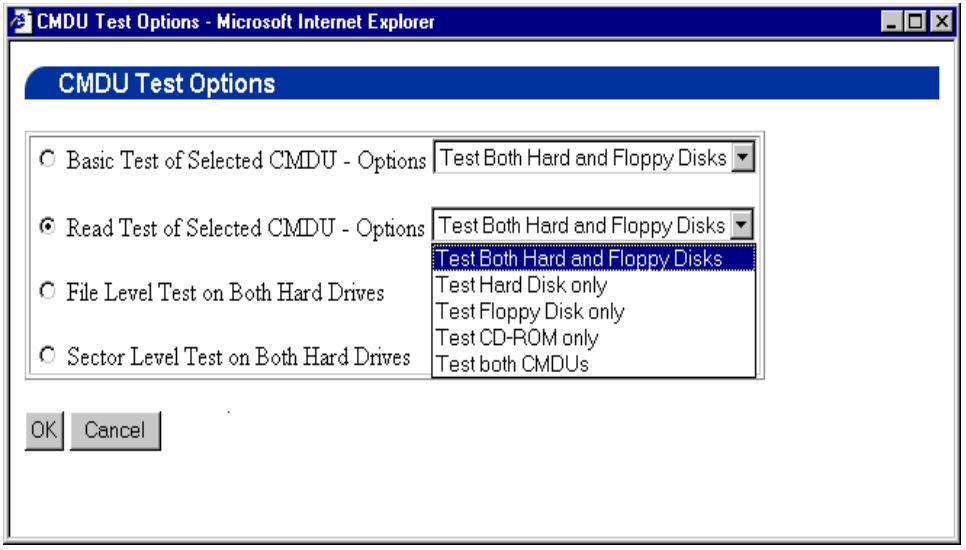
To perform a read test of the selected CMDU:

a Click the radio button corresponding to Read Test of Selected CMDU.

b Select an option from the drop-down list (Figure 359).

Note: The Test CD-ROM Only option only appears when you are connected to a Meridian_1 system running X11 Release 23 or later.

Figure 359 Read Test of Selected CMDU - Options



c Click OK.

The Options button is replaced with a Go button (Figure 358).

To perform a file level test on both hard drives:

a Click the radio button corresponding to File Level Test on Both Hard Drives.

b Click OK.

The Options button is replaced with a Go button (Figure 358).

To perform a sector level test on both hard drives:

a Click the radio button corresponding to Sector Level Test on Both Hard Drives.

b Click OK.

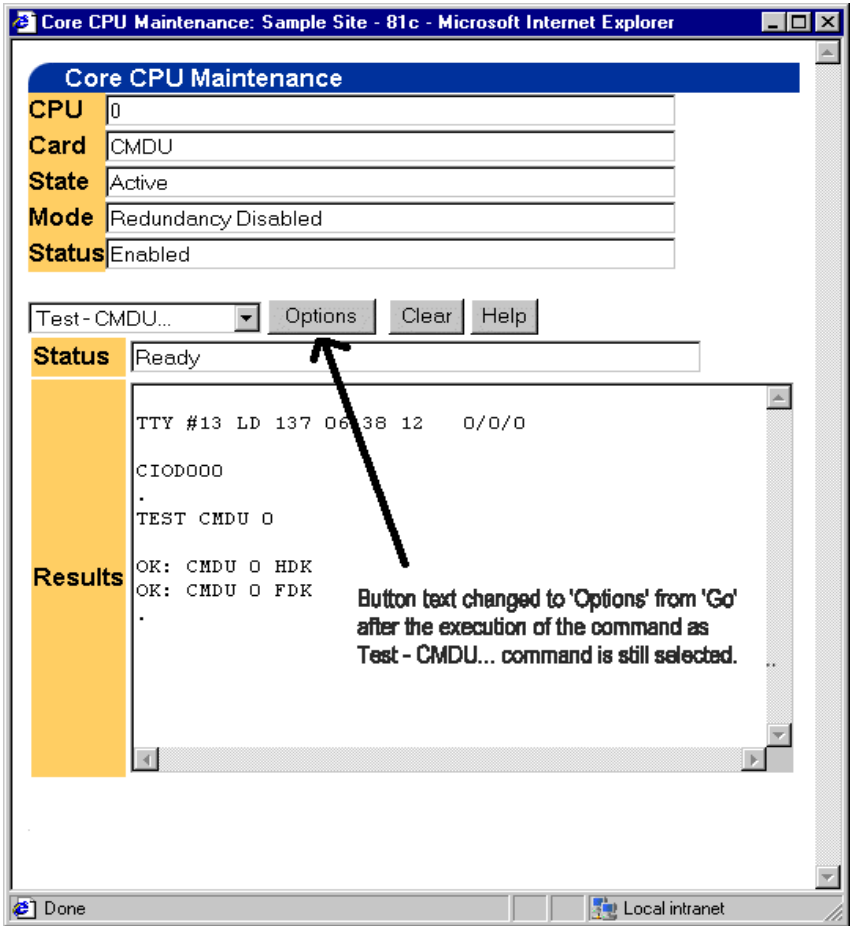
The Options button is replaced with a Go button (Figure 358).

5 Click Go.

The test results are presented in the Results frame (Figure 360).

Note: The Go button is replaced with an Options button since Test-CMDU is still selected in the drop-down menu.

Figure 360 Core CPU Maintenance test results



I/O Ports page

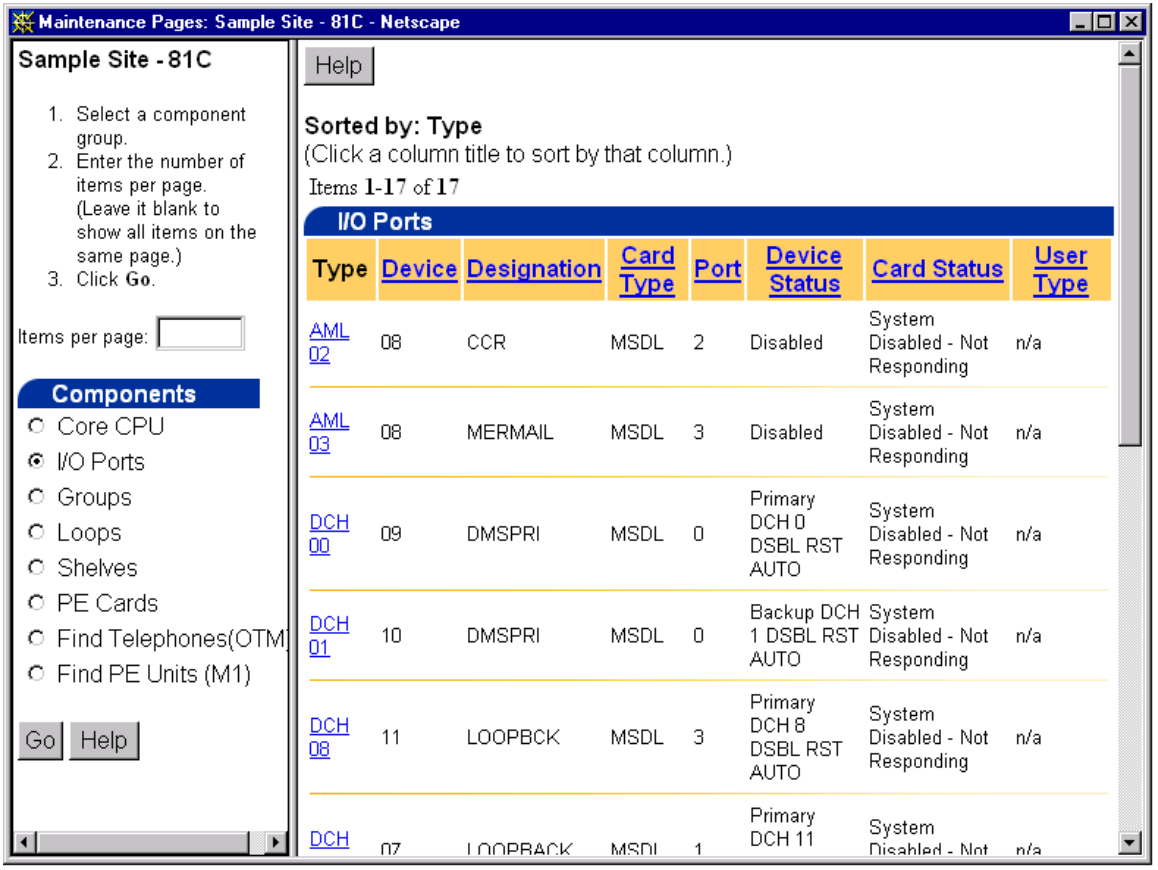
To open the I/O Ports page:

1 Click the Core I/O Ports radio button.

2 Click Go.

The I/O Ports summary page opens (Figure 361).

Figure 361 I/O Ports summary page

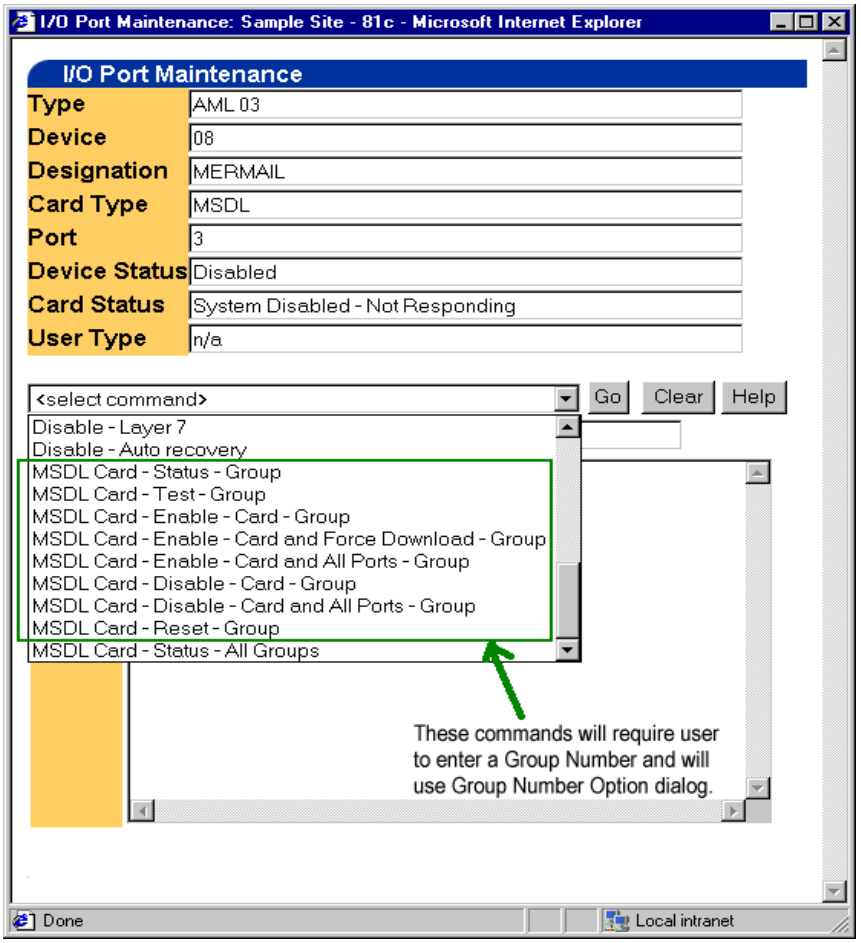


To perform maintenance operations on an I/O Port:

1 Click the Type link that corresponds to the port on which you want to perform maintenance operations.

The I/O Port Maintenance page for the selected port opens (Figure 362).

Figure 362 I/O Port Maintenance page

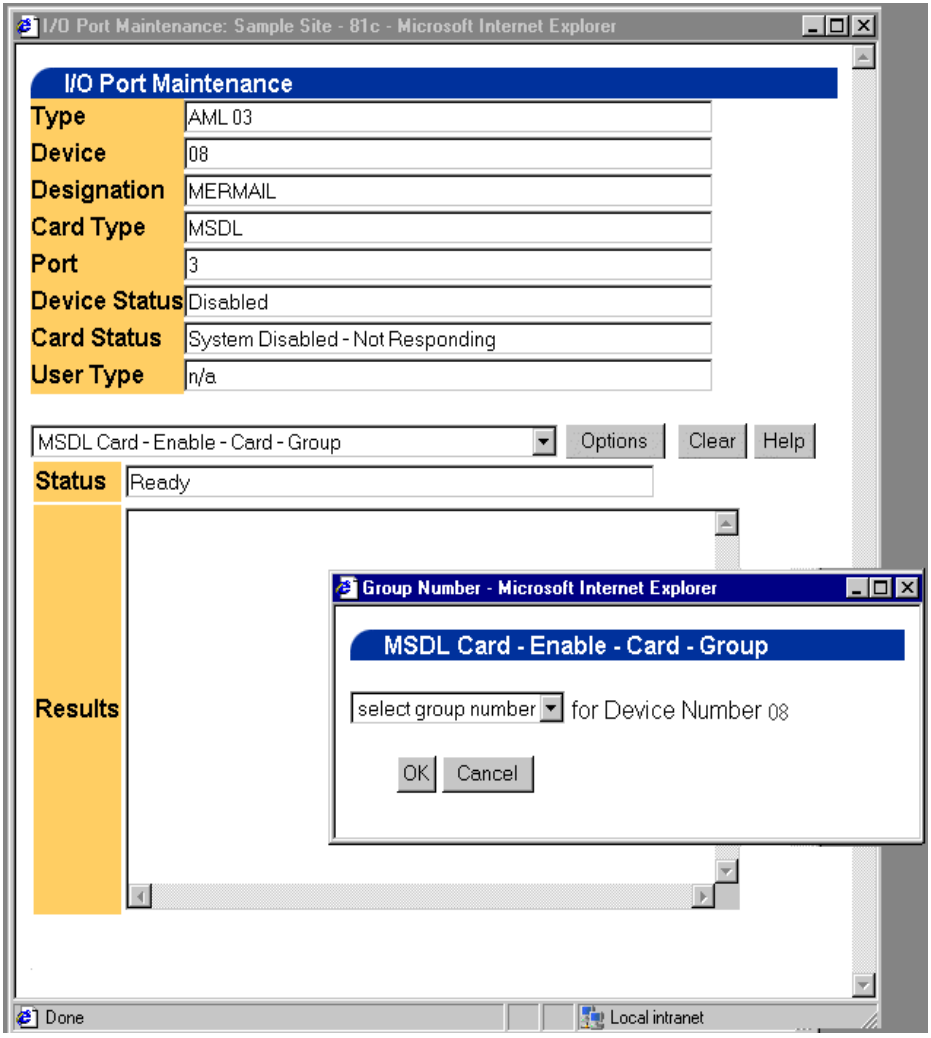


Some I/O Port Maintenance operations require that you select a group number prior to execution of the command. To select a group number:

2 Click Options.

3 Select the group number from the drop-down list (Figure 363).

Figure 363 Group number option dialog box



Note: The command that you selected from the select command drop-down list appears as the title in the select group number dialog box.

4 Click OK.

5 Click Go.

The Device Status field is updated to indicate that the card is enabled.

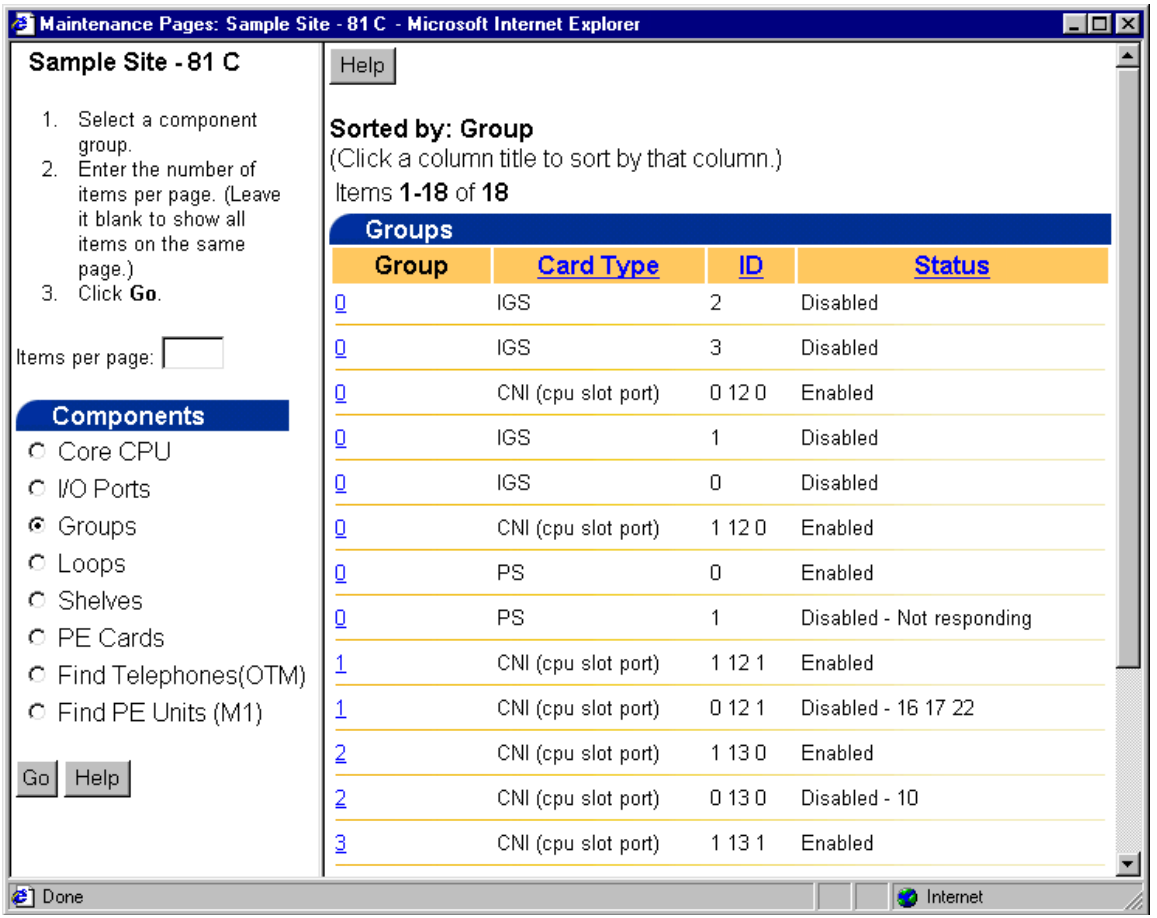
Groups page

To open the Groups page:

1. Click the Groups radio button.
2. Click Go.

   The Groups summary page opens (Figure 364).

Figure 364 Groups summary page



Loops page

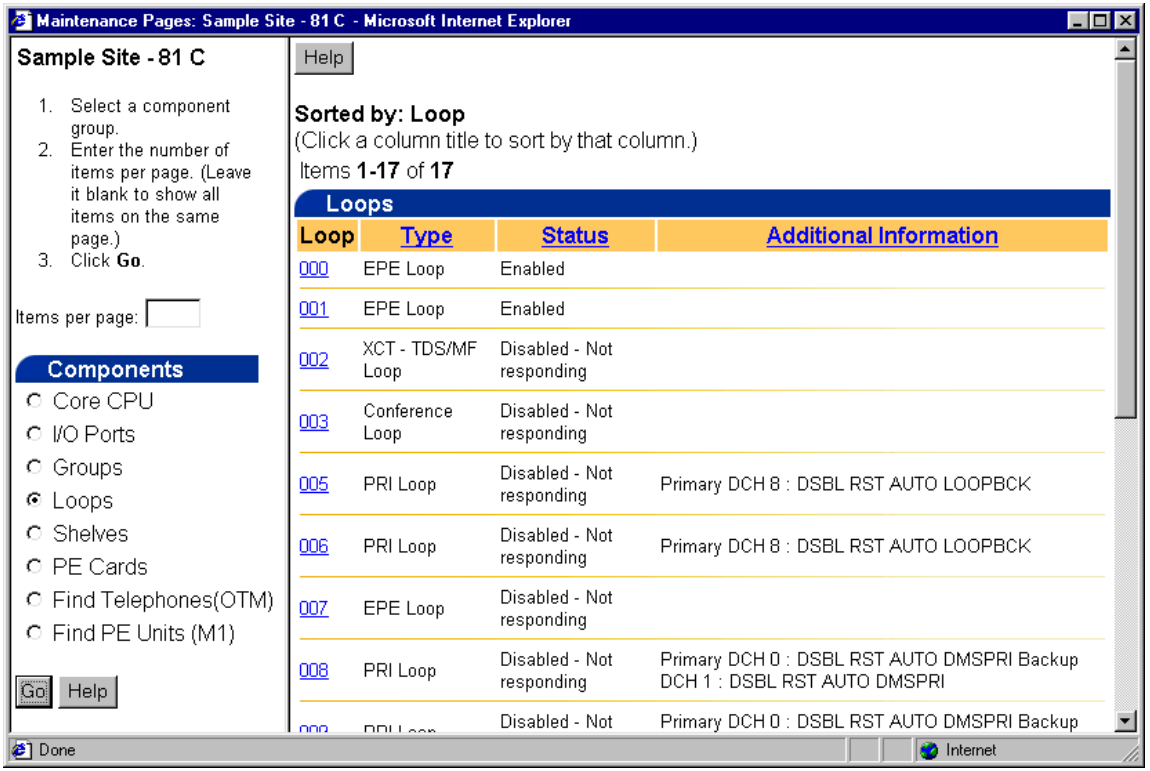
To open the Loops page:

1 Click the Loops radio button.

2 Click Go.

The Loops summary page opens (Figure 365).

Figure 365 Loops summary page

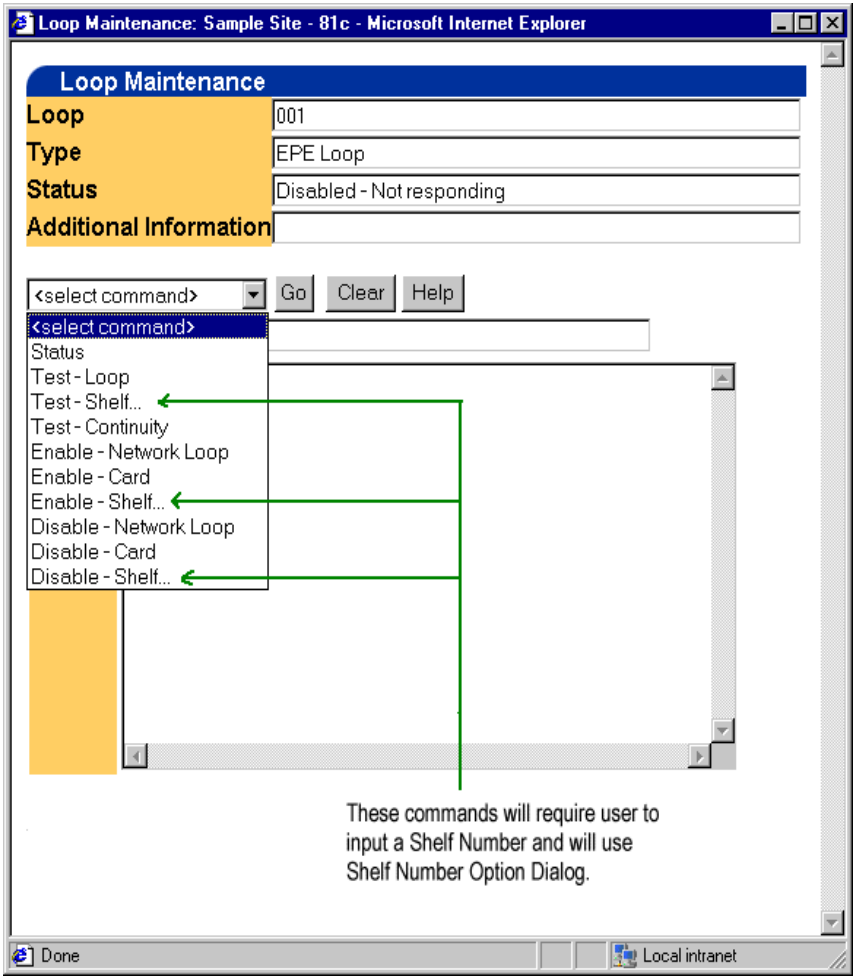


To perform maintenance operations on a Loop:

1 Click the Loop link that corresponds to the loop on which you want to perform maintenance operations.

The Loop Maintenance page for the selected loop appears (Figure 366).

Figure 366 Loop Maintenance page

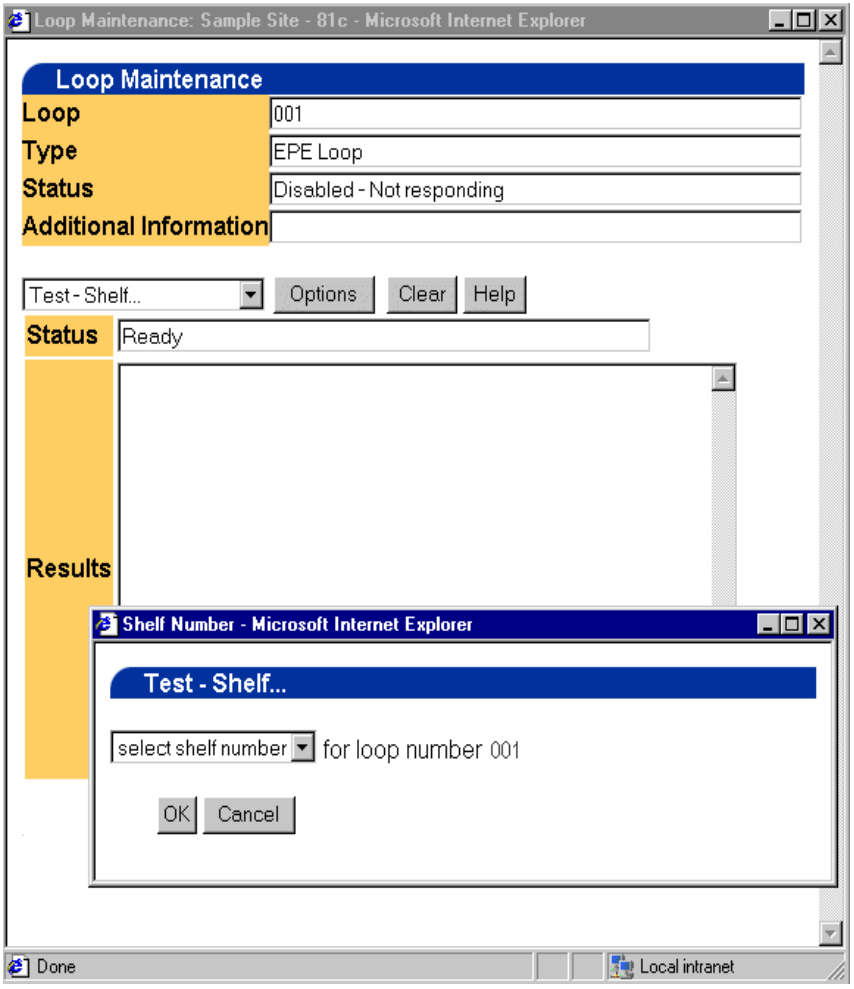


Some Loop Maintenance operations require that you select a shelf number prior to execution of the command. For these operations, the Go button becomes an Options button (Figure 367). To select a shelf number:

2 Click Options.

3 Select the shelf number from the drop-down list (Figure 367).

Figure 367 Loop Maintenance page with shelf number option dialog box



Note: The command that you selected from the select command drop-down list appears as the title in the select shelf number dialog box.

4 Click OK.

5 Click Go.

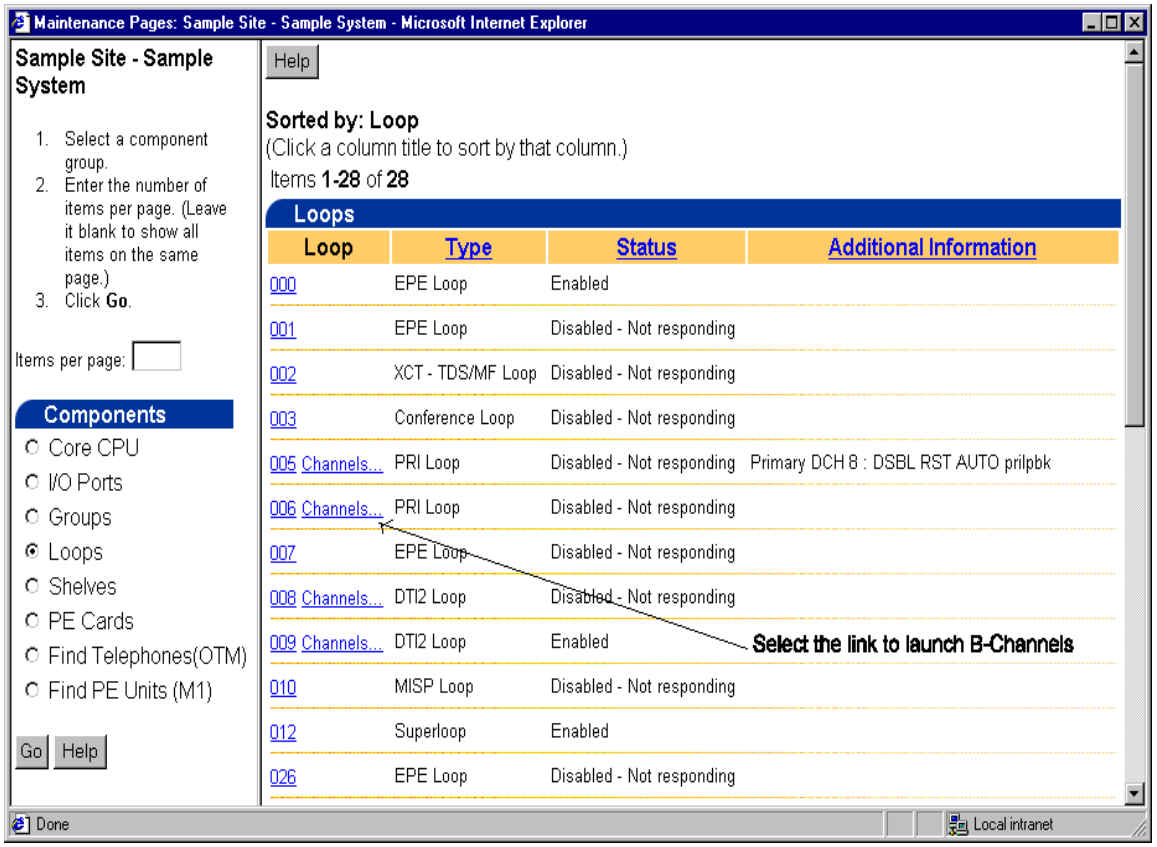
The test results are returned in the Results frame.

B-channels Maintenance page

To perform maintenance operations on B-channels:

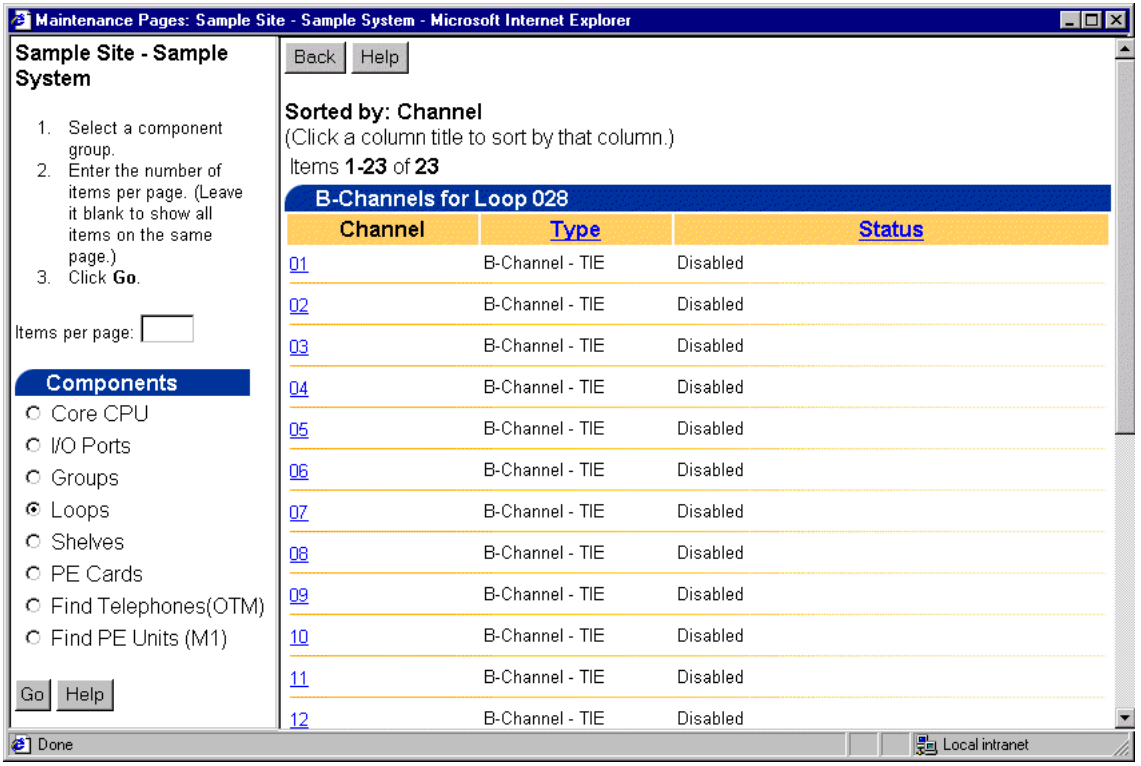
1 From the Loops summary page (Figure 368), select the Loop link for the Superloop on which you want to perform maintenance.

Figure 368 Loops summary page with PRI and DTI2 loops



The B-channels summary page for the selected loop opens (Figure 369).

Figure 369 B-Channels summary page

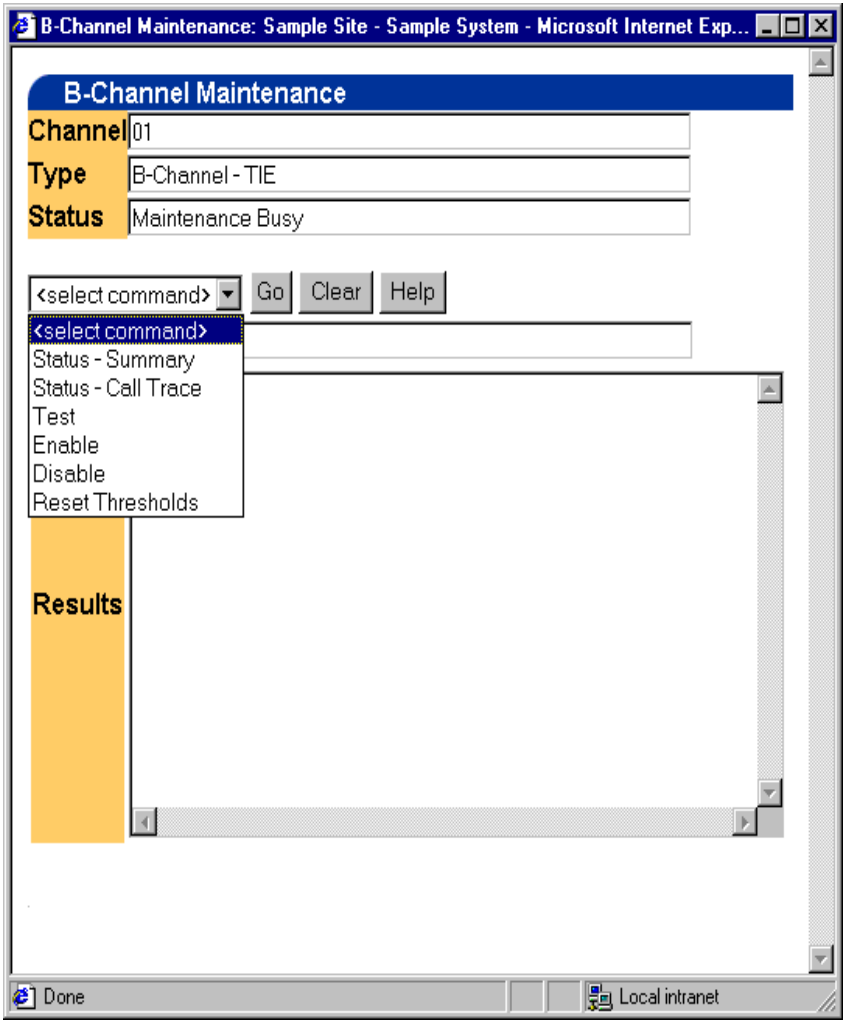


2 Click the Channel link that corresponds to the channel on which you want to perform maintenance operations.

The B-Channel Maintenance page for the selected channel opens (Figure 370).

Note: The available maintenance commands are dependent on the type of B-Channel selected.

Figure 370 B-Channel Maintenance page

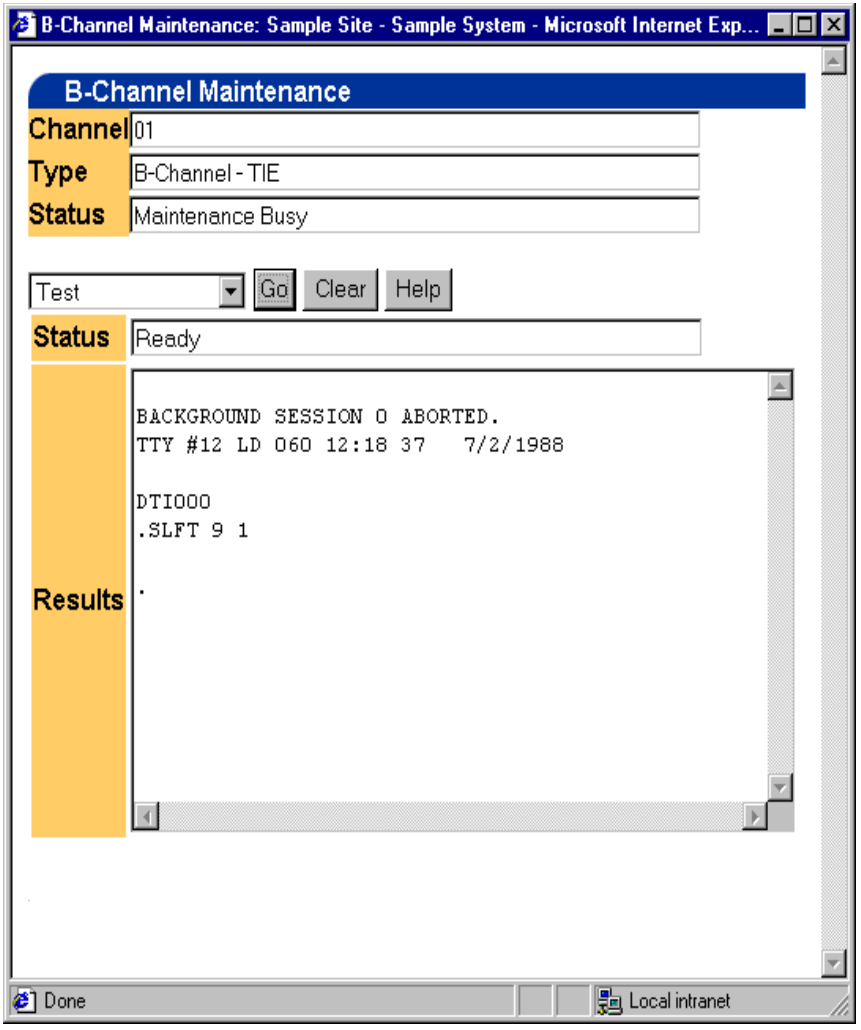


3 Select a command from the drop-down list.

4 Click Go.

The results of the command appear in the Results frame (Figure 371).

Figure 371 B-Channel Maintenance test results



PE Shelves page

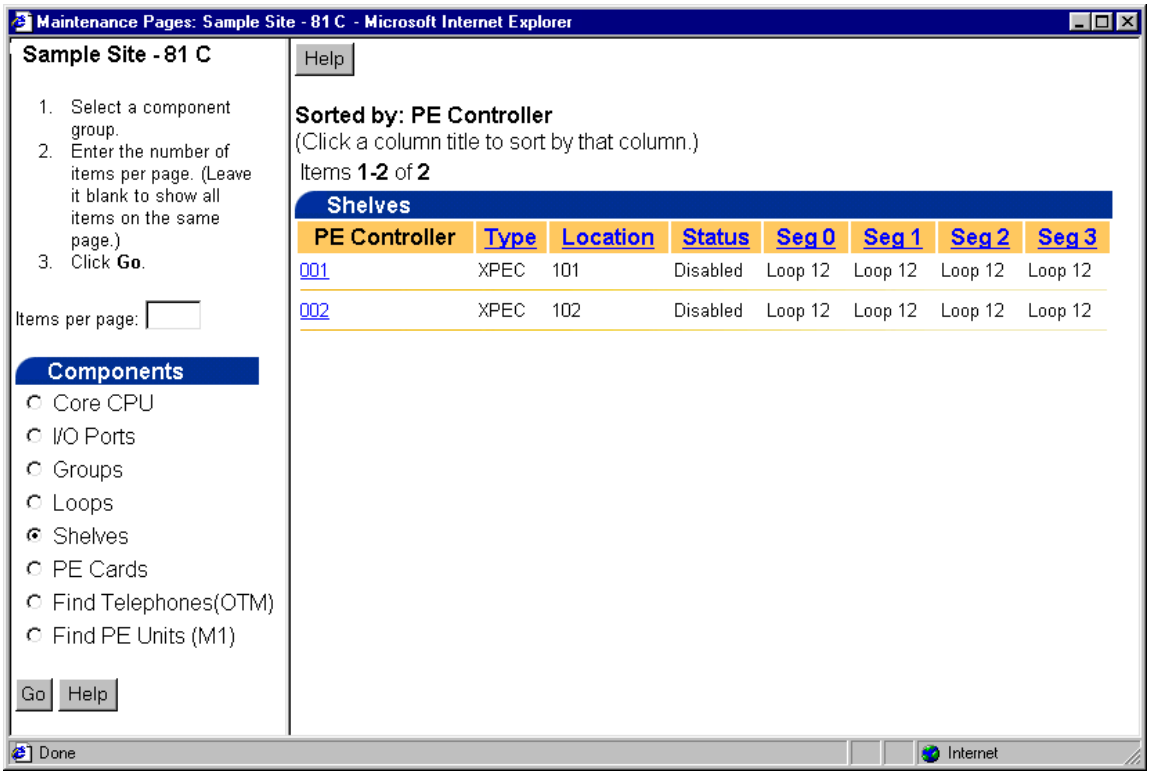
To open the PE Shelves page:

1 Click the Shelves radio button.

2 Click Go.

The PE Shelves summary page appears (Figure 372).

Figure 372 PE Shelves summary page



PE Cards page

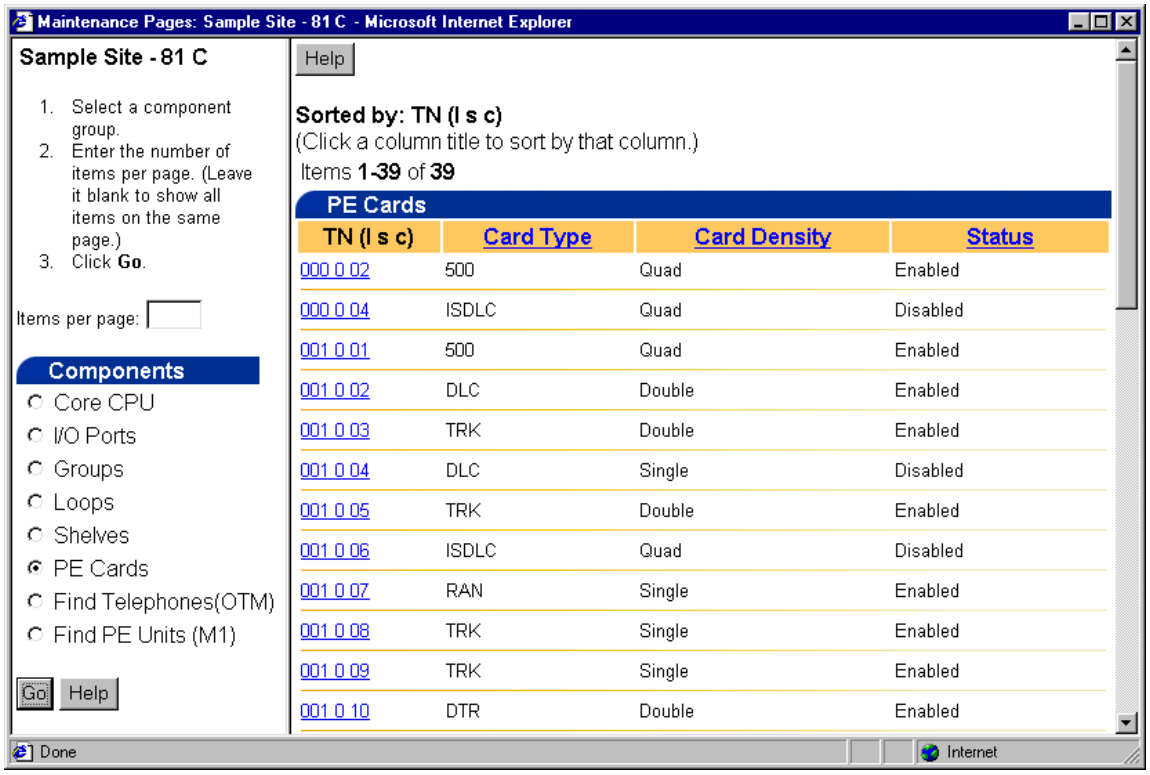
To open the PE Cards page:

1 Click the PE Cards radio button.

2 Click Go.

The PE Cards summary page appears (Figure 373).

Figure 373 PE Cards summary page

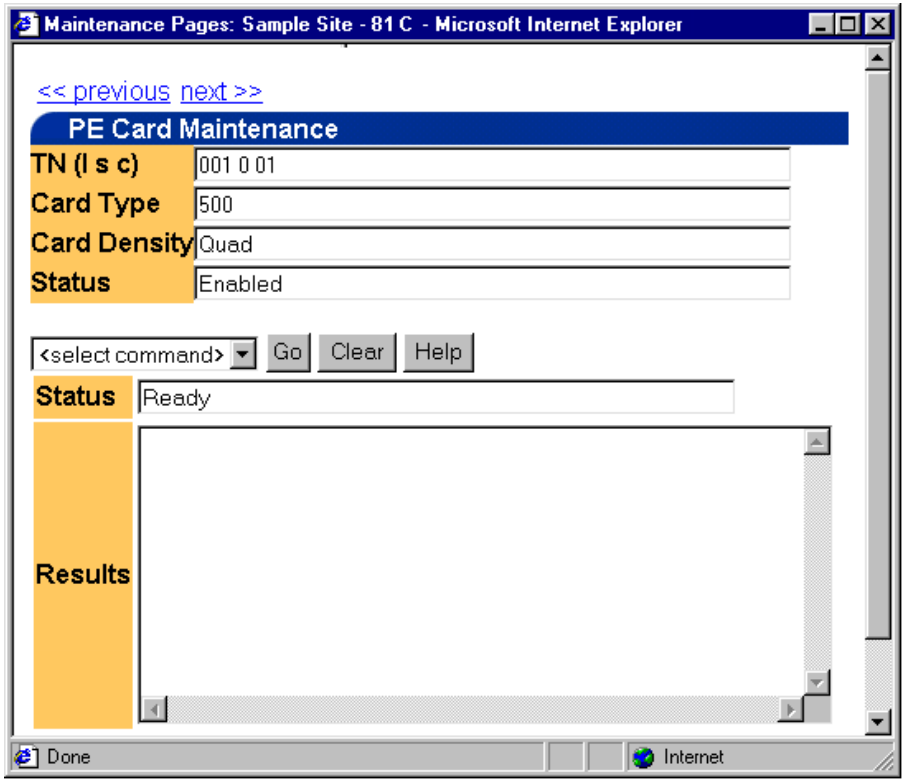


To perform maintenance commands on a PE card:

1 Click the TN link that corresponds to the PE card on which you want to perform maintenance commands.

The maintenance page for the selected PE card appears (Figure 352). This example shows the maintenance page for TN 001 0 01.

Figure 374 PE Card Maintenance page



2 Select a command from the drop-down list.

3 Click Go.

The results of the command are placed in the Results box. Once the command has been executed, the component state is updated.

Find Telephones and Find PE Units pages

Use the PE Units list to manage Directory Numbers (DNs), and Terminal Numbers (TNs). Before the list appears, a find option is provided since it is unlikely that you would want to view the entire list. The PE Units list can be retrieved from the Station database on the OTM Server, using Find Telephones (Figure 375). The PE Units list can also be retrieved directly from the Succession CSE 1000 or Meridian 1 system (Figure 376).

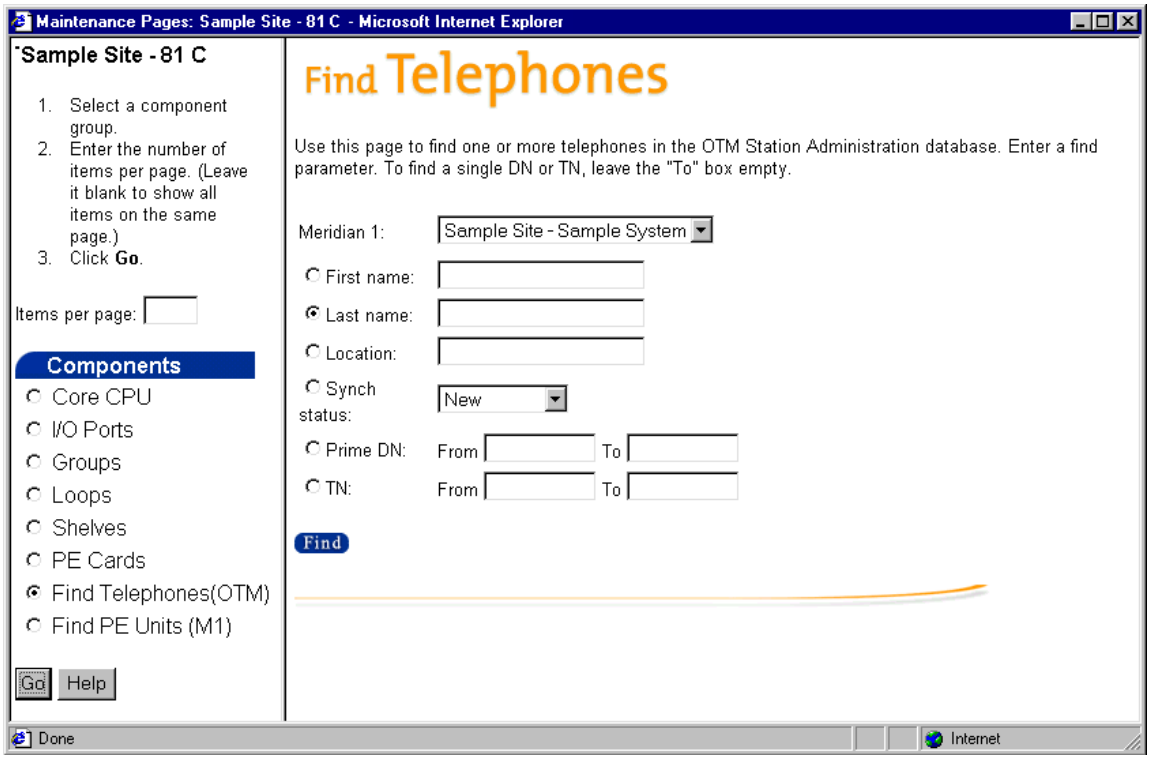
Find Telephones (OTM)

To open the Find Telephones (OTM) page:

1. Click the Find Telephones (OTM) radio button.
2. Click Go.

   The Find Telephones page appears (Figure 375).

Figure 375 Maintenance Pages Find Telephones (OTM) page



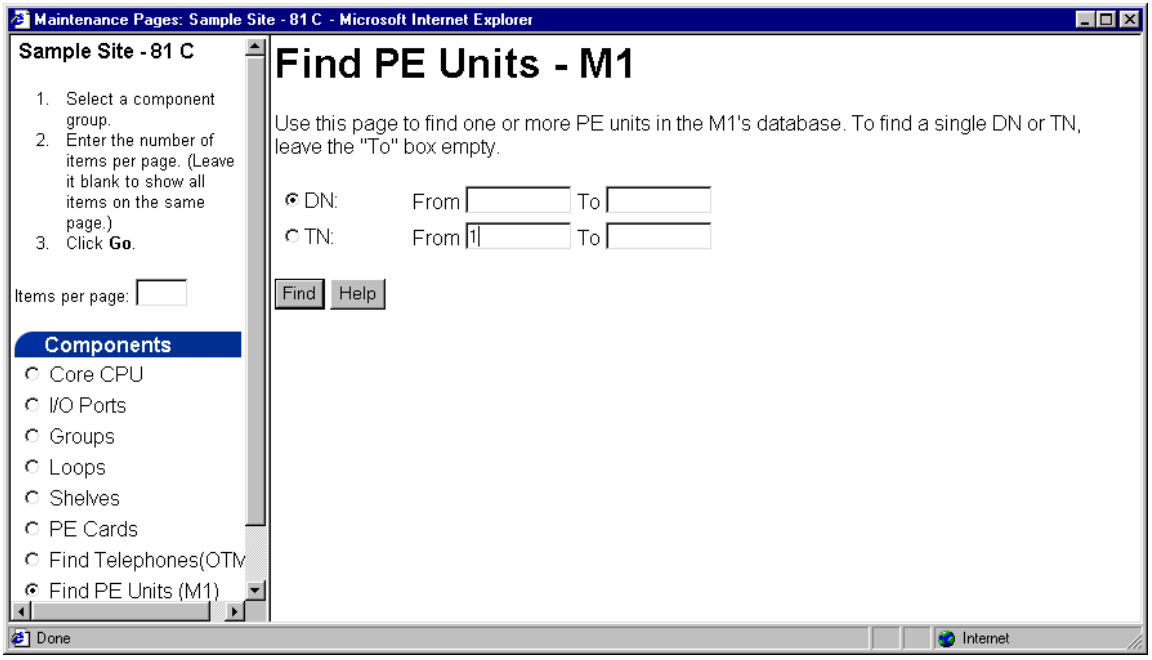
PE Units

To open the Find PE Units (M1) page:

1. Select the Find PE Units (M1) button.
2. Click Go.

The Find PE Units - M1 page appears (Figure 376).

Figure 376 Maintenance Pages Find PE Units (M1) page



Telephones/PE Units maintenance

In either the Find Telephones page or the Find PE Units - M1 page:

1 Enter a single DN or TN, or enter a range of DNs or TNs.

2 Click Find.

After you click Find, the results appear as shown in Figure 377 if you entered DN(s), or as shown in Figure 378 if you entered TN(s).

Figure 377 PE Units Find Results (by DN)

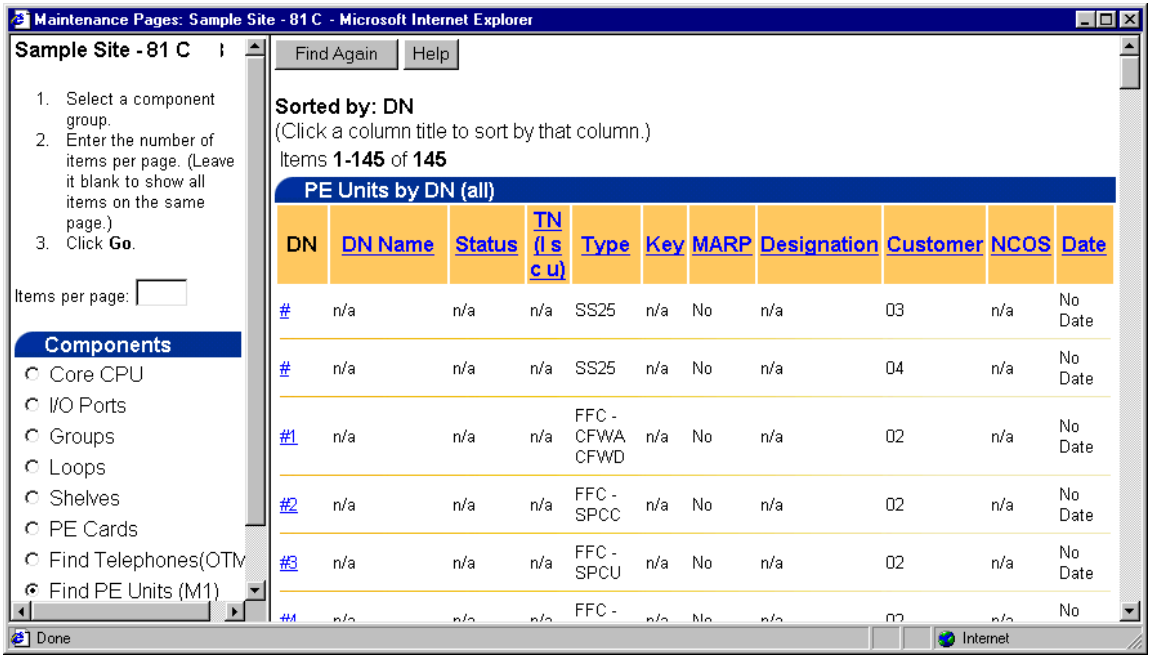
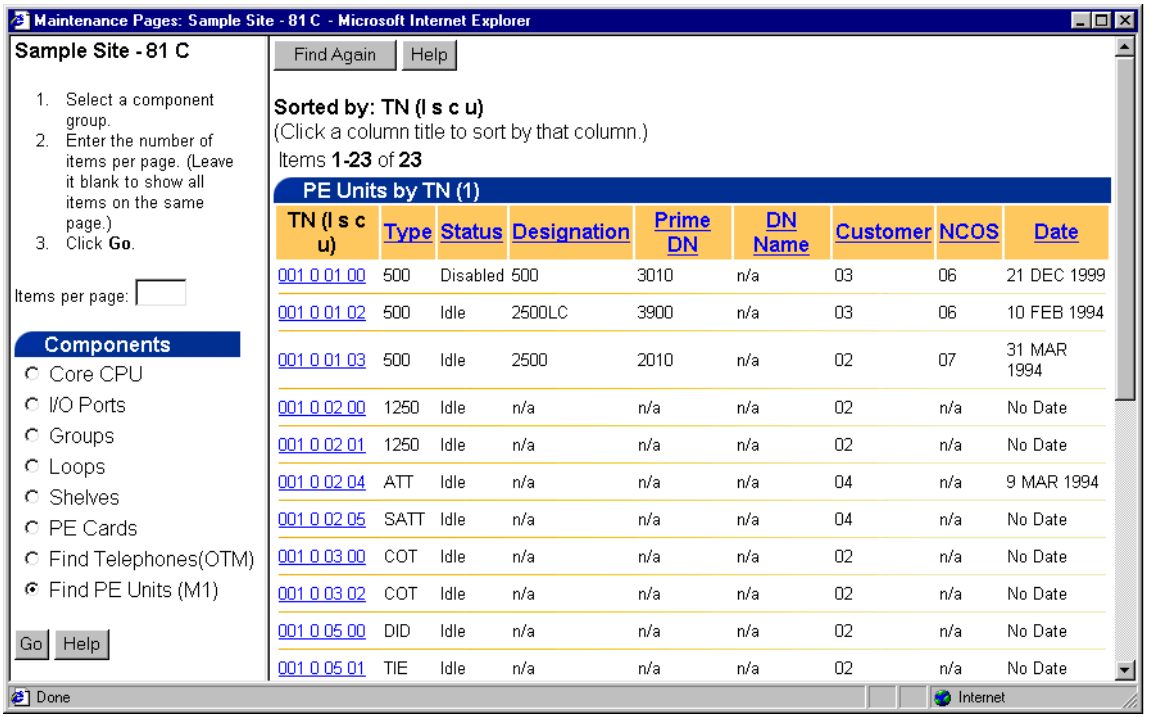
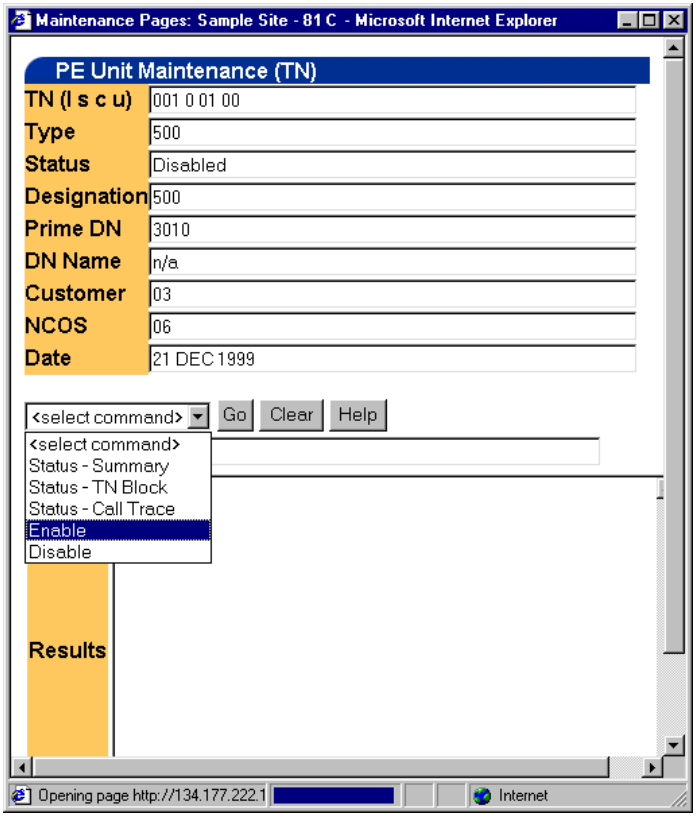


Figure 378 PE Units Find Results (by TN)



3 Click a DN or a TN. A new browser window appears (Figure 379). This example shows the maintenance page for TN 001 0 0 00.

Figure 379 Viewing PE Unit data



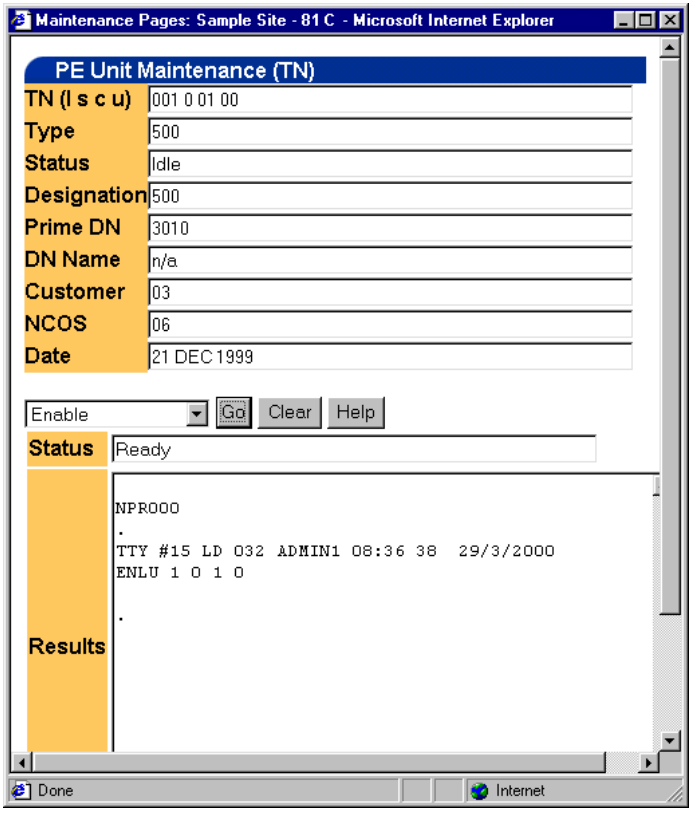
4 Select a command from the drop-down list, and then click Go.

The command status goes through the following sequence:

- Ready
- Logging In ...
- Retrieving Results ...
- Updating Status ...
- Logging Out ...
- Ready

In this example, the Enable command is selected. Figure 380 shows that the status of this unit has been updated from disabled in Figure 379 to idle in Figure 380.

Figure 380 PE unit data after applying enable command



5 Select another command, or close the browser window.

Windows-based maintenance

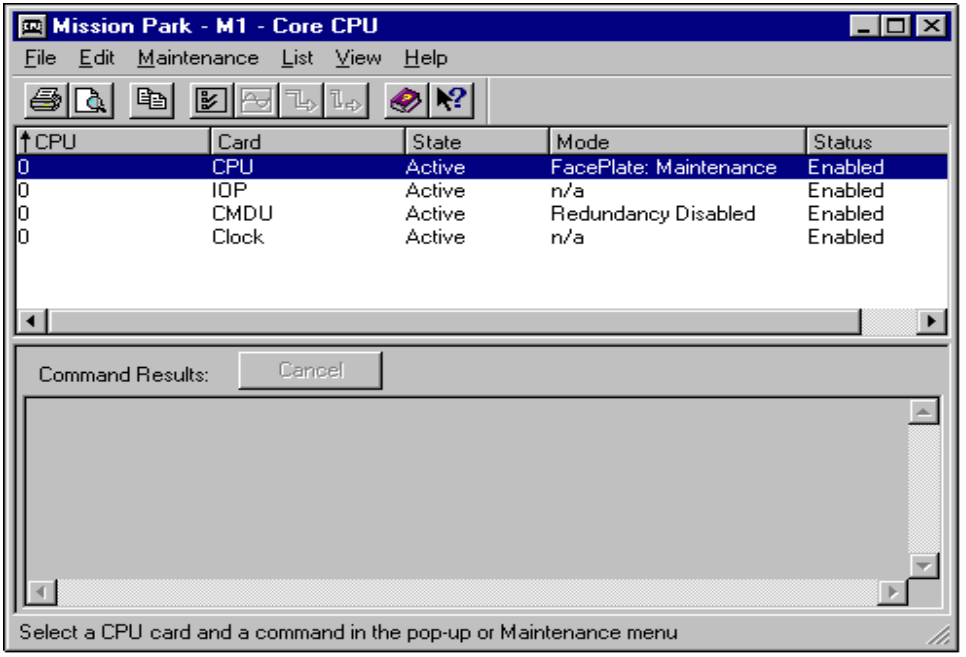
Core CPU window

The Core CPU window displays the status of cards in the CPU shelves on the selected Meridian 1 system or the status of the Call Server in a Succession CSE 1000 system.

Launching Core CPU

From the System window, under Core Equipment, double-click Core CPU icon. The Core CPU window (Figure 381).

Figure 381 CPU window



The command results area in the lower portion of the window displays the results of Maintenance menu commands.

Core CPU column descriptions

The Core CPU window provides columns of information about each card installed in the shelf. The Core CPU list is initially sorted by CPU number (there may be one or two CPU shelves, depending on the hardware type). Table 37 describes each column.

Table 37 Core CPU window column descriptions

Column	Description
CPU	Shelf number associated with the card.
Card	CPU card type, the following types are listed: • Core Processing Unit (CPU) cards • Core Multi-Disk Unit (CMDU) cards • Input/Output Processor (IOP) cards • Clock Controller (Clock) cards • Fiber cards (Option 11C only)
State	A card can be in an active or standby state.
Mode	Mode applies only to CPU and CMDU cards: CPU cards may be in split or shadowed mode. The faceplate may be in Normal or Maintenance mode. CMDU cards may be in Redundancy enabled or Redundancy disabled mode.
Status	Current status of the card. For a more detailed status report, use the Status command in the Maintenance menu.

Supported Core CPU commands

Table 38 lists the hardware and Core CPU commands supported. Use System Terminal for hardware or commands not supported by the Core CPU window.

Table 38 Supported Core CPU commands

Hardware	Supported	Commands supported
CP cards	Yes	All, except split and shadow CPU commands
I/O Processor (IOP) cards	Yes	All, except disable IOP and Ethernet commands **Note:** You will lose connection to M1.

Table 38 Supported Core CPU commands (continued)

Hardware	Supported	Commands supported
Core Multi-Disk Units (CMDU)	Yes	All
Clock Controller	Yes	All
Fiber Link (Option 11C)	Yes	All, including cabinet enable/disable commands
Fiber Link	Yes	All
System Utility (SUTL)	Yes	All

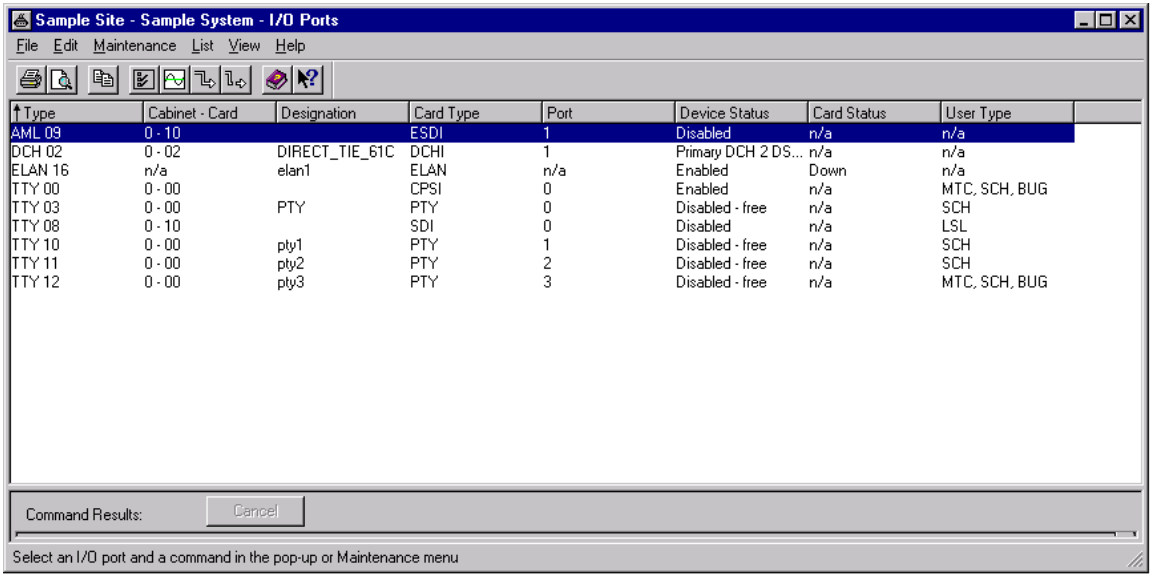
I/O Ports window

The I/O (Input/Output) Ports window displays the status of all I/O ports on the Meridian 1 or Succession CSE 1000 system.

Launching I/O Ports

From the System window, under Core Equipment, double-click the I/O Ports icon. The I/O Ports window appears (Figure 382).

Figure 382 I/O Ports window



The command results area in the lower portion of the window displays the results of Maintenance menu commands.

I/O Ports column definitions

The I/O Ports window provides columns of information about each port in the system. The I/O Ports list is initially sorted by port type and number. Table 39 describes each column.

Table 39 I/O Ports window column descriptions

Column name	Description
Type	Type and number of I/O port: • Teletype (TTY) • Printer (PRT) • Application Module Link (AML) • D-Channels • Intercept Computer Update Link (ICP) • Ethernet Local Area Network (ELAN) • Single Terminal Access (STA) • D-channel Digital Signaling Link (DDSL) • Low Speed Signaling Link (LSSL)
Device	Physical address of the card or port.
Designation	Port name.
Card Type	Card containing the I/O port: • Serial Data Interface Card (SDI) • Enhanced Serial Data Interface Card (ESDI) • D-channel Interface Card (DCHI) • Multi-purpose Serial Data Link Card (MSDL)
Port	Port number on the card.
Device Status	Current maintenance status of the port.

Table 39 I/O Ports window column descriptions (continued)

Column name	Description
Card Status	Current maintenance status of the card. Applies only to MSDL Cards.
User Type	Indicates current port usage. • ACD: Automatic Call Distribution printer • APL: Auxiliary Processor Link • ICP: Intercept Computer Update Link • LSL: Low-speed AUX link • HSL: High-speed AUX link • XSM: System monitor • BGD: Background terminal • CTY: Call Detail Recording (CDR) TTY for CDR records • PMS: Property Management System Interface (PMS) • BUG: BUG messages included on port • CSC: Automatic Set Relocation and Attendant Administration messages (CSC) included on port • FIL: Output filtered messages included on port • MCT: Malicious Call Trace messages included on port • MTC: AUD, BUG, and ERR messages included on port • NOO: No overlay allowed on port • SCH: Service Change or any database change included on port • TRF: Traffic reports included on port

Supported I/O Ports commands

Table 40 lists the supported I/O Ports hardware and commands. Use System Terminal for hardware or commands not supported by the I/O Ports window.

Table 40 Supported I/O Ports commands

Hardware	Supported	Commands supported
TTY port on SDI/MSDL card	Yes	All except test command
XSM (System Monitor) on SDI/MSDL card	Yes	All
PRT - Printer port on SDI/MSDL card	Yes	All except test command
PTY - Pseudo TTY port	Yes	All

Table 40 Supported I/O Ports commands (continued)

Hardware	Supported	Commands supported
AML - (Application Module Link) on an ESDI/MSDL card	Yes	All except message monitor commands
ACD High Speed Port on SDI/MSDL card	Yes	All except message monitor commands
ACD Low Speed Port on SDI card	Yes	All except message monitor commands
Auxiliary Processor Links on any SDI/ MSDL card	Yes	All except message monitor commands
Intercept Computer Update ports (ICP) on any SDI/MSDL card	Yes	All except ICP application commands
D-channel on an MSDL/DCHI card	Yes	All except message monitor commands
Single Terminal Access port	Yes	All
MSDL card	Yes	All except download version x of software
ACD Low Speed Link for Option 11C	Yes	All
ICCM ELAN for ICCM	Yes	All
DPNSS DDSL (D-channel)	Yes	All
APNSS LSSL (D-channel)	Yes	All

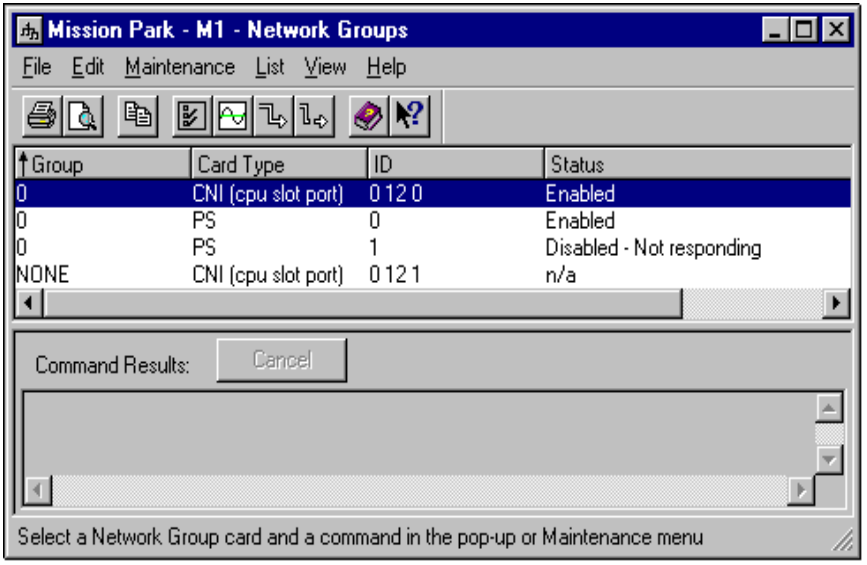
Network Groups window

The Network Groups window displays the status of all Network Group cards on the Meridian 1 system.

Launching Network Groups

From the System window, under Core Equipment, double-click the Network Groups icon. The Network Groups window appears (Figure 383).

Figure 383 Network Groups window



The command results area in the lower portion of the window displays the results of Maintenance menu commands.

Network Groups column definitions

The Network Groups window provides columns of information about each port in the system. The Network Groups list is initially sorted by Group number. Table 41 describes each column.

Table 41 Network Groups window column descriptions

Column name	Description
Group	Network group identification number.
Card Type	Each network group can include the following cards: • Core to Network Interface cards (2 cards) • Peripheral Signaling cards (2 cards) • InterGroup Switch cards (4 cards)
ID	Card identification number. ID for CNI cards include the CPU number, slot number, and the port number.
Status	Current status of the card. For a more detailed status report, use the Status command on the Maintenance menu.

Supported Network Groups commands

Table 42 lists the supported hardware and Network Groups commands. Use System Terminal for hardware or commands not supported by the Network Groups application.

Table 42 Supported Network Groups commands

Hardware	Supported	Commands supported
Core to Network Interface (CNI) card	Yes	All
Peripheral Signalling card	Yes	All
InterGroup Switch card	Yes	All
Fiber Junctor Interface (FIJI) card	Yes	All

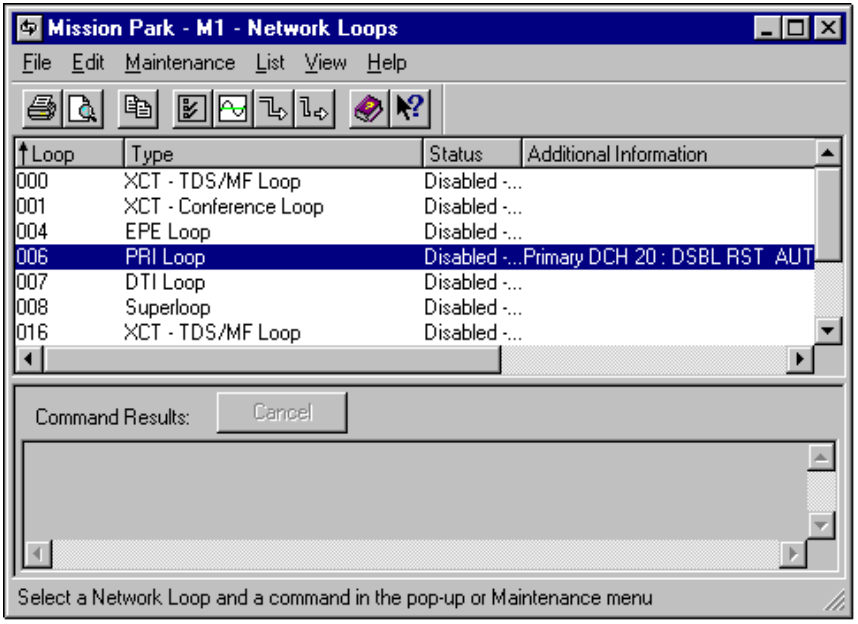
Network Loops window

The Network Loops window lists all the network loops on the Meridian 1 system.

Launching Network Loops

From the System window, under Core Equipment, double-click the Network Loops icon. The Network Loops window appears (Figure 383).

Figure 384 Network Loops window



The command results area in the lower portion of the window displays the results of Maintenance menu commands.

Network Loops column definitions

The Network Loops window provides columns of information about each loop in the system. The Network Loops list is initially sorted by Loop number. Table 43 describes each column.

Table 43 Network Loops window column descriptions

Column	Description
Loop	Loop number.[1]
Type	Type of Loop.
Status	Current status of the card. For a more detailed status report, use the Status command in the Maintenance menu.
Additional Information	Applies only to PRI/PRI2 and International RPE loops: • For PRI/PRI2 loops, displays the application status, link status, and designation for the Primary and Backup D-channels (DCH). • For 2.0 MB/s RPE loops, displays the RPE group number.

1 Loop is replaced by slot for Option 11C systems.

Supported Network Loop commands

Figure 44 lists the supported hardware and Network Loop commands. Use System Terminal for hardware or commands not supported by the Network Loops window.

Table 44 Supported Network Loops commands

Hardware	Supported	Commands supported
Enhanced PE (EPE) Network Loop card	Yes	All except test timeslot and LD45 XCON commands
Superloop cards	Yes	All except LD 45 XCON commands and enable/ disable background continuity tests
Digital Trunk Interface (DTI/DTI2) cards	Yes	All
Primary Rate Interface (PRI/PRI2) cards	Yes	All
Remote Peripheral Equipment (1.5 and 2.0 Mb/s) cards	Yes	All

Table 44 Supported Network Loops commands (continued)

Hardware	Supported	Commands supported
Meridian ISDN Signaling Processor (MISP) cards	Yes	All except application download commands and Meridian Packet Handler commands
DPNSS/DASS2 cards	Yes	All
APNSS cards	Yes	All
Conference cards	Yes	All
Tone and Digit Switch cards	Yes	All
Conf/TDS cards	Yes	All
Fiber Remote (FNET) card	Yes	All
Multifrequency Sender cards	Yes	All
Phantom loops	Yes	None. Phantom loops do appear in the list of loops, but there are no overlay commands for these loops.

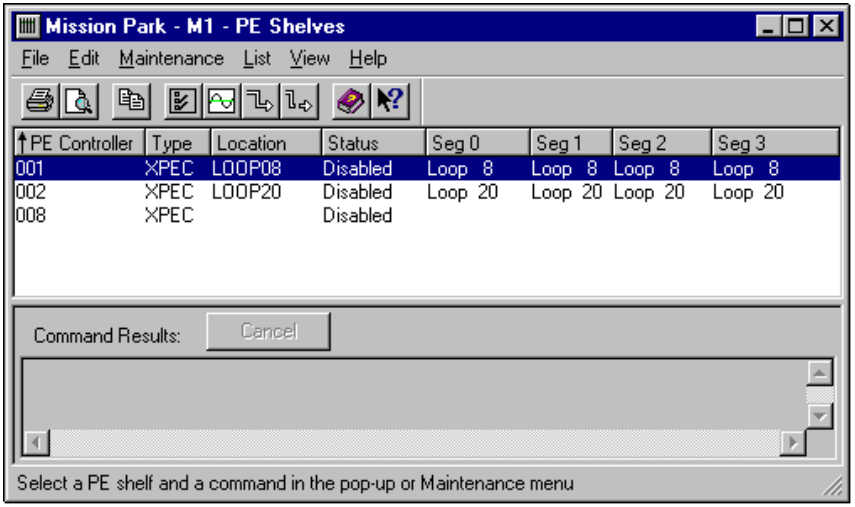
PE Shelves window

The PE Shelves window displays the status of the Peripheral Controller Cards for each PE Shelf on the Meridian 1.

Launching PE Shelves

From the System window, under Core Equipment, double-click the PE Shelves icon. The PE Shelves window appears (Figure 383).

Figure 385 PE Shelves window



The command results area in the lower portion of the window displays the results of Maintenance menu commands.

PE Shelves column definitions

The PE Shelves window provides columns of information about each shelf in the system. The PE Shelves list is initially sorted by Controller card number. Table 45 describes each column.

Table 45 PE Shelves window column descriptions

Column name	Description
PE Controller	Identification number associated with the PE Controller Card.
Type	Type of controller card.
Location	Location of the PE shelf containing the PE Controller Card.
Status	Current status of the PE Controller Card.
Seg 0 to Seg 3	Identifies the loop supported by each of the four PE shelf segments.

Supported PE Shelves commands

Table 46 lists the supported hardware and PE Shelves commands. Use System Terminal for hardware or commands not supported by the PE Shelves window.

Table 46 Supported PE Shelves commands

Hardware	Supported	Commands supported
Peripheral Controller (XPEC) cards	Yes	All
Fiber Remote (CARR)	Yes	All
Fiber Remote (FPEC)	Yes	All

PE Cards window

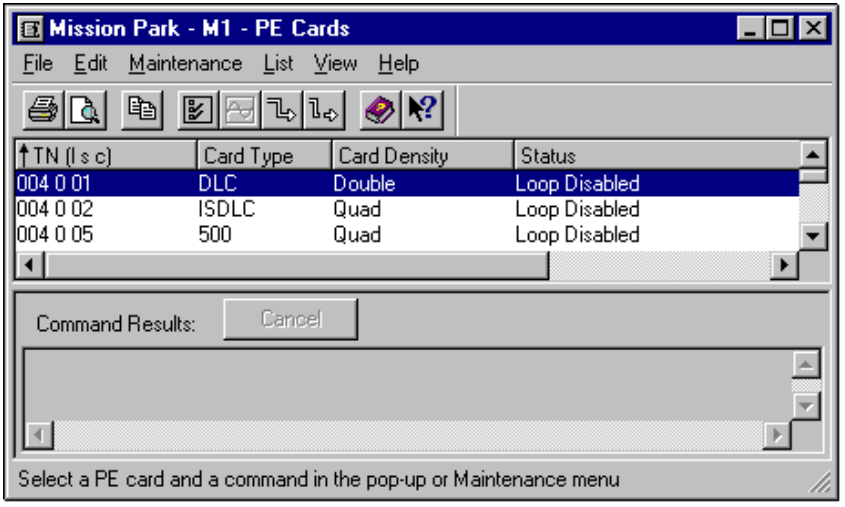
The PE Cards window displays the status of all Peripheral Equipment Cards for each PE Shelf on a Meridian 1 system or each Media Gateway on a Succession CSE 1000 system.

Note: You cannot configure the MGate card through OTM. You must manually configure the MGate card in LD 11.

Launching PE Cards

From the System window, under Core Equipment, double-click the PE Cards icon. The PE Cards window appears (Figure 383).

Figure 386 PE Cards window



The command results area in the lower portion of the window displays the results of Maintenance menu commands.

PE Cards column definitions

The PE Cards window provides columns of information about each card in the system. The PE Cards list is initially sorted by TN. Table 47 describes each column.

Table 47 PE Cards window column descriptions

Column name	Description
Terminal Number (loop shelf card)	Address of the card.
Note: TN is replaced with Slot for Option 11C. Tone Service in slot 0 is for DTR/XTD units 0–7, and DTR/XTD/MFC or MFR units 8–15. The individual units appear in the PE Units window.	
Card Type	The internal value and type of the various loops, as well as the name presented to the user. There are two types of line and trunks, one for EPE loops and one for Superloops. Superloops have a density of octal.

Table 47 PE Cards window column descriptions (continued)

Column name	Description
Card Density	Density of the card (this can differ from loop density): • Single • Double • Quad • Octal
Status	Current status of the PE Card. The status is a text string up to 10 characters. This is the same text as output by the overlays.

Supported PE Cards commands

Table 48 lists the supported hardware and PE Cards commands. Use System Terminal for hardware or commands not supported by the PE Cards window.

Table 48 Supported PE Cards commands

Hardware	Supported	Commands supported
IPE/EPE Line cards	Yes	All
ISDLC cards	Yes	All
IPE/EPE Trunk cards	Yes	All
BRI Line cards	Yes	All
BRI Signaling Processor (BRSC) cards	Yes	All
Digitone Receivers (DTR)	Yes	All
Multifrequency Receivers (DTR)	Yes	All
Tone Detector cards	Yes	All
Extended Tone Detector (XTD) cards	Yes	All
Multifrequency Signaling (MFC/MFE/MFVE/MFK5/MFK6) cards	Yes	All

Table 48 Supported PE Cards commands (continued)

Hardware	Supported	Commands supported
Mobility: • EIMC • MXC **Note:** These cards appear in the list of cards. However, you must use the Mobility application to access all maintenance commands for these cards.	 Yes Yes	 None None
ITG cards	Yes	All

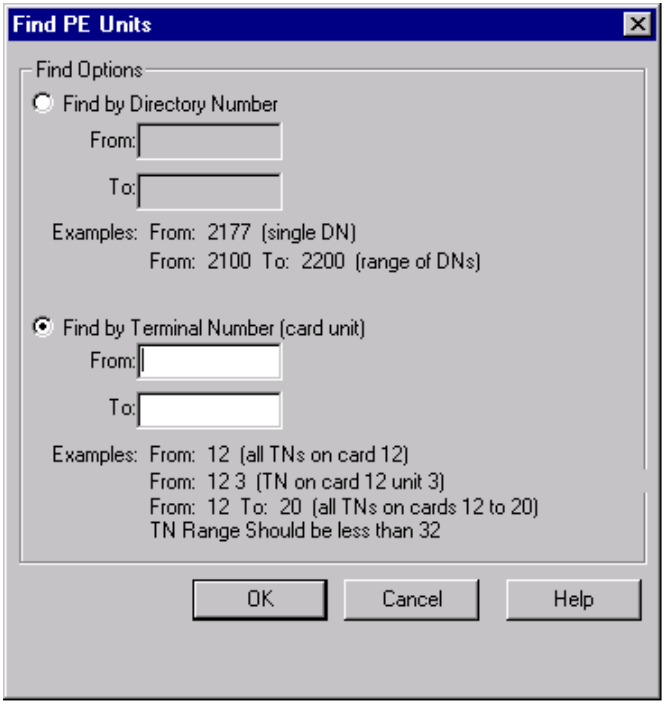
PE Units window

The PE Units window displays information for selected PE units and Directory Numbers on the Meridian 1 or Succession CSE 1000 system.

Launching PE Units

1 From the System window, under Core Equipment, double-click the PE Units icon. The Find PE Units dialog box (Figure 387) appears to allow you to select a range of DNs or TNs. This helps you avoid uploading thousands of items.

Figure 387 Find PE Units dialog box



You can view both TNs and DNs in the PE Units window:

- Viewing by TN is more useful than print TNB.
- Viewing by DN is more useful than print DNB.

2 Make a selection of DN or TN, select a range, and then click OK. The PE Units window appears as shown in Figure 383 or Figure 389 (depending on whether you selected TN or DN) in the Find dialog box.

Figure 388 PE Units window (by TN)

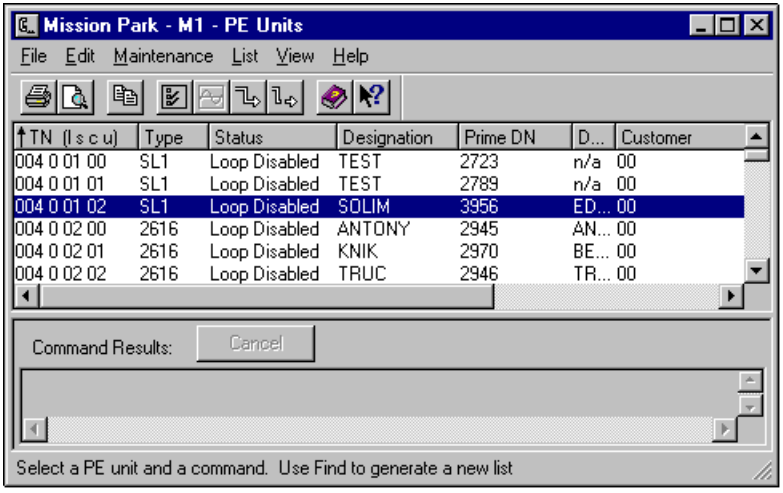
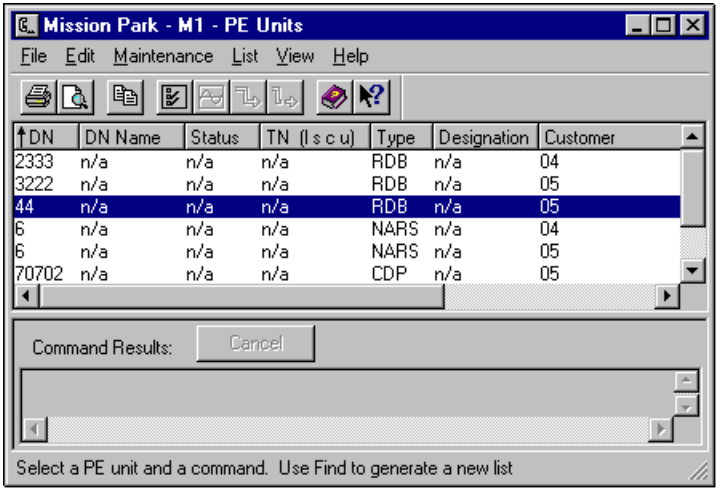


Figure 389 PE Units window (by DN)



The command results area in the lower portion of the window displays the results of Maintenance menu commands.

PE Units column definitions

The PE Units window provides columns of information about each DN and TN in the system. The PE Units window is initially sorted by DN or TN number (depending on what you specified in the Find PE Units dialog box). Table 49 describes each column.

Table 49 PE Units window column descriptions

Column name	Description
TN	Terminal number address associated with the card. This address includes the loop, shelf, card, and unit number for all systems except Option 11. For Option 11, this address includes card and unit.
DN	Directory number.
Type	Type of PE unit.
Status	Current status of the PE unit. For a more detailed status report, use the Status command on the Maintenance menu.
Designation	Additional information about the unit, such as location or cabling details, specified by the person who installed the unit.
Prime DN	Directory number (DN) associated with key 0 on the telephone.
DN Name	Name associated with the directory number.
Customer	Customer number associated with the PE unit.
Date	Last date data was updated for this unit.
NCOS	Network Class of Service group associated with the unit.
Key	Telephone key number associated with the directory number (DN).
MARP	Indicates whether this telephone is the Multiple Appearance Redirection Prime (MARP).

Supported PE Units commands

Table 50 lists the supported hardware and PE Units commands. Use System Terminal for hardware or commands not supported by the PE Units window.

Table 50 Supported PE Units commands

Hardware	Supported	Commands supported
500 - 500/2500 telephone	Yes	All
1250 - M1250 Console	Yes	All
2003 - 2003 telephone	Yes	All
2006 - M2006 telephone	Yes	All
I2004 - i2004 Internet telephone (ITG)	Yes	All
2008 - M2008 telephone	Yes	All
2009 - M2009 telephone	Yes	All
2016 - M2016 telephone	Yes	All
2018 - M2018 telephone	Yes	All
2112 - M2112 telephone	Yes	All
2216 - M2216 telephone (ACD)	Yes	All
2250 - M2250 Console	Yes	All
2317 - M2317 telephone	Yes	All
2616 - M2616 telephone	Yes	All
3000 - M3000 Touchphone	Yes	All
3901 - M3901 telephone	Yes	All
3902 - M3902 telephone	Yes	All
3903 - M3903 telephone	Yes	All
3904 - M3904 telephone	Yes	All
3905 - M3905 Call Center telephone	Yes	All
3903H - M3903 Virtual Office Host Telephone	Yes	All
3904H - M3904 Virtual Office Host Telephone	Yes	All
ADM - Add-on Data Module	Yes	All
Note: The manual test command is not supported for any trunk type. Option 11C Model TNs are not supported.		

Table 50 Supported PE Units commands (continued)

Hardware	Supported	Commands supported
AID - AIOD trunk	Yes	All
ATT - QCW3/4 Console	Yes	All
ATVN - Autovon trunk	Yes	All
AWR - Automatic Wake-Up RAN/Music trunk	Yes	All
CMOD - Class Modem	Yes	All
BRI - Basic Rate Interface	Yes	All
COT - Central Office Trunk	Yes	All
CSA - CCSA trunk	Yes	All
DIC - Dictation trunk	Yes	All
DCE - Digital Cordless Set	Yes	All
DID - DID trunk	Yes	All
DTD - Dial Tone Detector	Yes	All
DTR - Digitone Receiver	Yes	All
FEX - Foreign Exchange trunk	Yes	All
FGDT - Feature Group D Trunk	Yes	All
IDA - Integrated Digital Access	Yes	All
ISA - Integrated Services Access trunk (ISDN)	Yes	All
ITG - Integrated IP Telephony Gateway	Yes	All
MCU - Communications Unit	Yes	All
MDECT - Meridian Digitally Enhanced Cordless Telecommunications (DECT)	Yes	All
MDM - Modem/Data Module	Yes	All
MFC - Multifrequency Signaling	Yes	All
MFE - Multifrequency Signaling for Socotel sender/receiver	Yes	All
MFK5/MFK6 - Spanish KD3 MF Signaling	Yes	All
MFR - Multifrequency Receiver (FGD)	Yes	All
MFVE - Multifrequency versatile units	Yes	All
MUS - Music trunk	Yes	All
Note: The manual test command is not supported for any trunk type. Option 11C Model TNs are not supported.		

Table 50 Supported PE Units commands (continued)

Hardware	Supported	Commands supported
OOSS - Out of Service Terminal	Yes	All
PAG - Paging trunk	Yes	All
PWR - Power	Yes	All
R232 - Data Access unit	Yes	All
R422 - Data Access unit	Yes	All
RAC - Real Analog Channel	Yes	All
RAN - Recorded Announcement trunk	Yes	All
RCD - Recorder trunk	Yes	All
RDC - Real Digital Channel	Yes	All
RLM - Release Link Main trunk	Yes	All
Mobility • MPORTBL **Note:** This card appears in the list of cards. However, you can only access the maintenance commands using the Mobility application.	Yes	None
RLR - Release Link Remote trunk	Yes	All
SL1 sets	Yes	All
TCON - Tandem Connection for MPH	No	None
TDET - Tone Detector	Yes	All
TIE - TIE trunk	Yes	All
VAC - Virtual Analog Channel	Yes	All
VDC - Virtual Digital Channel	Yes	All
WAT - Wide Area Telephone Service trunk	Yes	All
XTD - Extended Dial Tone Detector and Digitone Receiver	Yes	All
DN types: ACDN, ADCP, CDN, CDP, CHDN, DISA, DSDN, FCC, LDN, MCDN, NARS, PARK, RDB, REFx, RLDN, RSA, SFP, SS25, T100, TSTx, VNS, IADN	Yes	These are DNs that have no associated TN. Typically, the only command is print DN block.
Note: The manual test command is not supported for any trunk type. Option 11C Model TNs are not supported.		

B- and D-channels window

The B- and D-channels window displays the channels on the selected digital trunk. It allows you to execute overlay commands for a selected channel by choosing commands from the Maintenance menu. The results appear in the Command Results area of the window. The Cancel button allows you to terminate a command in progress.

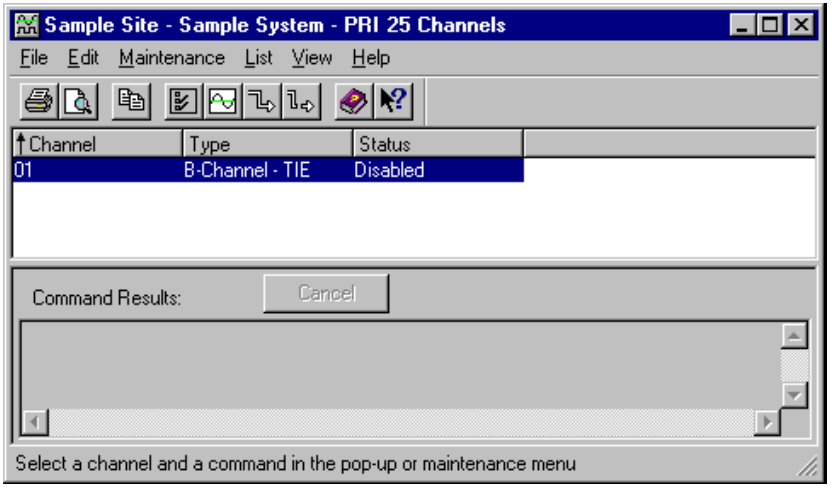
The following types of channels appear in the B- and D-channels window:

- B-channel on a PRI/PRI2/DTI/DTI2/DPNSS loop
- D-channel on DCHI Card
- D-channel on MSDL Card
- Real Analog Channel (RAC)
- Real Digital Channel (RDC)
- Virtual Analog Channel (VAC)
- Virtual Digital Channel (VDC)

Launching B- and D-channels

1. From the System window, under Core Equipment, double-click the Network Loops icon. Select a PRI/PRI2 loop.
2. From the Maintenance menu or the right mouse pop-up menu, select Channels. The B- and D-channels window appears (Figure 390).

Figure 390 Channels window



The command results area in the lower portion of the window displays the results of Maintenance menu commands.

B- and D-channels column definitions

The B- and D-channels window provides columns of information about each loop in the system. The B- and D-channels list is initially sorted by Channel number. Table 51 describes each column.

Table 51 B- and D-channels window column descriptions

Column name	Description
Channel	Number associated with the channel. PRI loops may have 0–23 channels; PRI2 loops may have 0–29 channels.
Type	Type of channel.
Status	Current status of the channel.

Supported B- and D-channel commands

Table 52 lists the supported hardware and commands. Use System Terminal for hardware or B- and D-channel commands not supported by the B- and D-channels window.

Table 52 Supported B- and D-channels commands

Hardware	Supported	Commands supported
The window contains the list of channels for the selected loop. You can also access D-channels from the I/O ports window.	Yes	All, except enable all channels on DTI cards and loopback test commands

Inventory Reporting

The OTM Inventory Reporting application allows you to generate system inventory files and download them to your PC. The inventory files list cards and sets installed in your system.

You must have Microsoft Excel 95 or later to use the Inventory Reporting application. You also need an Ethernet connection to your Meridian 1 or Succession CSE 1000 system.

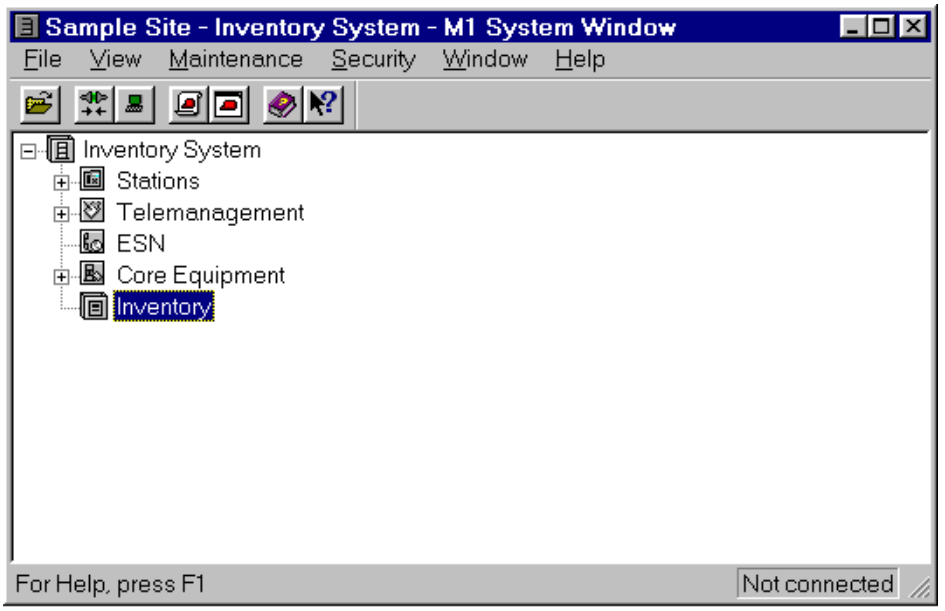
Inventory Reporting is based on LD 117. For additional overlay information, see the *Software Input/Output guide* (553-3001-311 and 553-3001-511).

Launch Inventory Reporting

1. In your OTM Navigator window, open a System Window for the Meridian 1 or Succession CSE 1000 system that you want to inventory (Figure 391 on page 797).
2. Connect to that system. (See "Working with the OTM System Window" on page 75 for procedures.)

Note: If you do not connect to a system before opening Inventory Reporting, some features are disabled.

Figure 391 Sample System Window

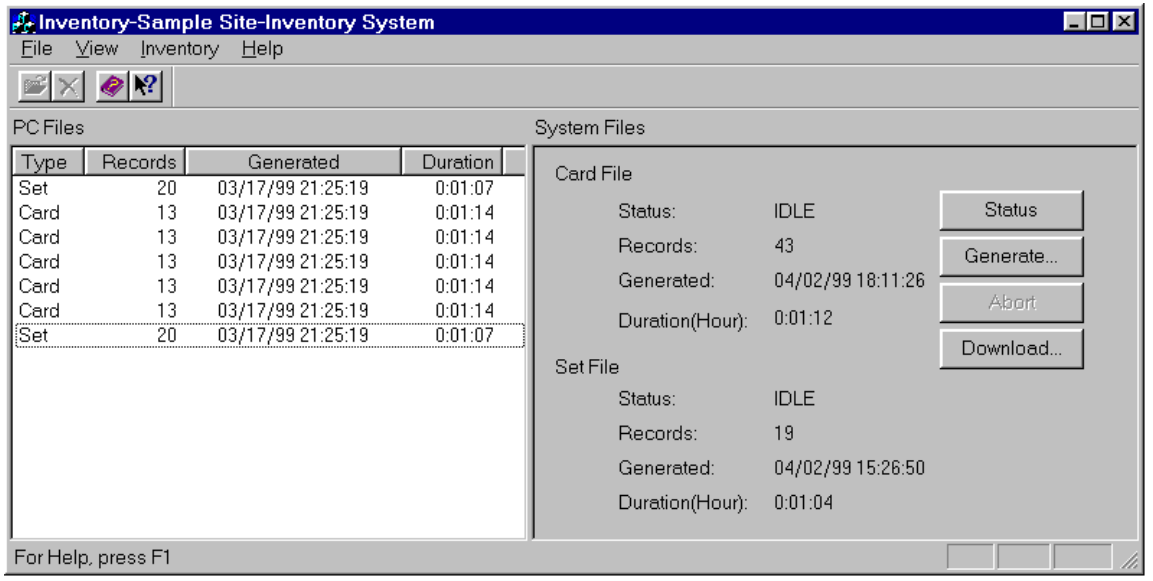


3 Once connected, double-click the System Window Inventory icon.

Note: If you have not connected to a system, a dialog box appears asking if you want to connect. Click Yes to connect to a system, or click No to proceed without connecting.

The Inventory window appears (Figure 392).

Figure 392 Inventory window



The main Inventory window contains the PC Files frame and the System Files frame. The PC Files frame lists inventory files downloaded from the Meridian 1 or Succession CSE 1000 system. The System Files frame provides status and statistics for the Meridian 1 or Succession CSE 1000 system.

Main window menus

Inventory Reporting's main window menus include the following commands:

- File
  - **Open:** Open the file selected in the list view of the PC File frame.
  - **Delete:** Delete the file selected in the list view of the PC File frame.
  - **Exit:** Exit the Inventory window.
- View
  - **Toolbar:** Toggle the Inventory toolbar.
  - **Status Bar:** Toggle the status bar.
  - **Automatic Status:** If selected, Inventory Reporting updates the inventory file status displayed on the System File frame every 10 seconds.
- Inventory

- **Abort...:** Abort any file generation now running on the system.
- **Download...:** Download one or more inventory files from the system.
- **Generate...:** Generate one or more inventory files.
- **Status:** Query the inventory status of the system.

- Help
  - **Help Topic:** Provide a list of Help topics.
  - **What's This?:** Change the cursor and display Help information about the next item you select.
  - **About Inventory...:** Provide Inventory Reporting application release information.

Inventory files

The PC Files frame lists all inventory files downloaded from the Meridian 1 or Succession CSE 1000 system. There are two types of inventory files available:

- Card Inventory files
- Set Inventory files

To open a file:

1. Select a file in the list.
2. Click File > Open.

   Inventory Reporting creates a temporary report file (*.CSV), which opens in Microsoft Excel.

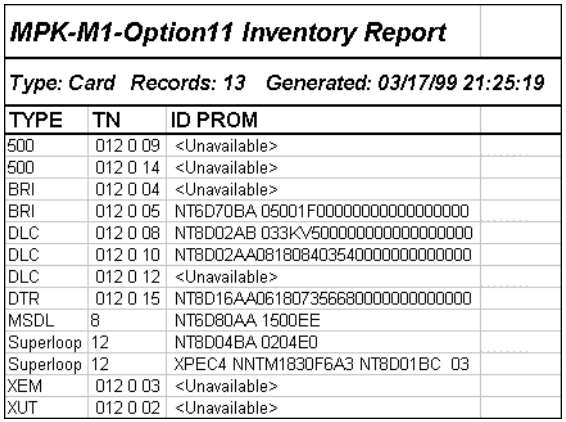
To delete a file from the list:

1. Select a file in the list.
2. Click File > Delete.

Card Inventory files

The Card Inventory file provides columns of information in Excel about each card configured in the system. Table 53 describes each column.

Figure 393 Sample Card Inventory file



MPK-M1-Option11 Inventory Report

Type: Card Records: 13 Generated: 03/17/99 21:25:19

TYPE	TN	ID PROM
500	012 0 09	<Unavailable>
500	012 0 14	<Unavailable>
BRI	012 0 04	<Unavailable>
BRI	012 0 05	NT6D70BA 05001F000000000000000000
DLC	012 0 08	NT8D02AB 033KV500000000000000000
DLC	012 0 10	NT8D02AA0818084035400000000000000
DLC	012 0 12	<Unavailable>
DTR	012 0 15	NT8D16AA06180735668000000000000
MSDL	8	NT6D80AA 1500EE
Superloop	12	NT8D04BA 0204E0
Superloop	12	XPEC4 NNTM1830F6A3 NT8D01BC 03
XEM	012 0 03	<Unavailable>
XUT	012 0 02	<Unavailable>

Table 53 Card Inventory file column descriptions

Column name	Description
TYPE	Card type.
TN	Terminal number address associated with the card.
ID PROM	32 byte ASCII string whose characters (in order) represent: • Product Engineering Code (PEC) • Color (numeric representation) • Release • One blank character • Product Serialization ID • One blank character • Other (free field)

The following card types are included in the Card Inventory file:

- All IPE and common equipment cards
- All Meridian 1 or Succession CSE 1000 cards that have a Hardware ID (also known as ID PROM)

The following card types are not included in the Card Inventory file:

- Cards manufactured without an ID PROM

- TTY or PC cards
- Power Supply
- Any non-Nortel Networks (third-party) cards, including those designed to simulate included cards

Set Inventory files

The Set Inventory file provides columns of information in Excel about each set configured in the system. Table 54 describes each column.

Figure 394 Sample Set Inventory file

MPK-M1-Option11 Inventory Report

Type: Set Records: 20 Generated: 03/17/99 21:25:19

TYPE	TN	ID PROM	DESIGNATOR	PRIMARY DN
2016	012 0 08 06	<Unavailable>	2016	2032
2016	012 0 08 22	<Unavailable>	MCA	2332
2216	012 0 08 03	<Unavailable>	AGNT1	2951
2216	012 0 08 08	<Unavailable>	NAGNT1	3951
2216	012 0 08 09	<Unavailable>	NACD	4950
2216	012 0 08 10	<Unavailable>	NAGNT1	4951
2616	012 0 08 00	<Unavailable>	2616	2020
2616	012 0 08 02	M2616 NT2K16WK 35 01 C31632	2616	20210
2616	012 0 08 04	M2616 NT2K16WM 35 01 C310C8	2616	2022
2616	012 0 08 11	M2616 NT2K16WN 35 01 33A45D	2616	3021
2616	012 0 08 12	<Unavailable>	2616	4021
2616	012 0 08 16	<Unavailable>	MCA	2320
2616	012 0 10 00	<Unavailable>	DJL	0
3901	012 0 08 15	<Unavailable>	TAUR	0
3905	012 0 08 14	<Unavailable>	TAUR2	0
AWR	012 0 02 06	<Unavailable>	AGNT1	0
R232	012 0 12 00	<Unavailable>	R232	2301
R232	012 0 12 01	<Unavailable>	R232	2302
R232	012 0 12 04	<Unavailable>	R232	2303
R232	012 0 12 05	<Unavailable>	R232	2304

Table 54 Set Inventory file column descriptions

Column name	Description
TYPE	Set type.
TN	Terminal number address associated with the set.

Table 54 Set Inventory file column descriptions (continued)

Column name	Description
ID Prom	32 byte ASCII string whose characters (in order) represent: • Product Engineering Code (PEC) • Color (numeric representation) • Release • One blank character • Product Serialization ID • One blank character • Other (free field)
DESignator	6-character ASCII string used by Station Administration and LD 11.
Primary DN	Primary directory number.

The following sets are included in the Set Inventory file:

M2006	M2008
M2016	M2616
M2216	M390X
M3110	M3310
M3820	IP telephones

The following sets (and data units) are not included in the Set Inventory file:

- Data units on: M2006, M2008, M2016, M2616, M2216, M390X, M3110, M3310, M3820
- SL-1 sets and data units
- 500/2500 sets and data units
- Any other digital sets or data units
- Any non-Nortel Networks (third-party) sets, including those designed to simulate included sets

Generate an inventory file

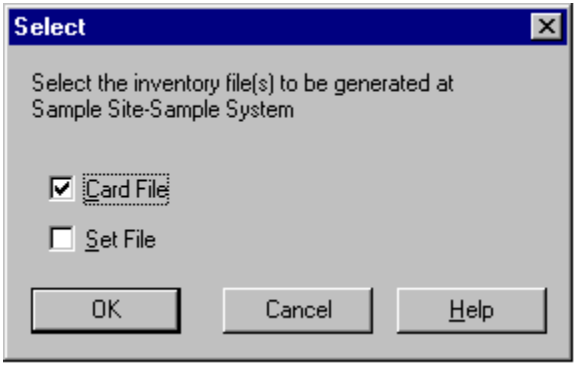
You will System Administrator privileges to generate an inventory file.

To generate an inventory file:

1 In the Inventory window, select Inventory > Generate...

The Select file to generate dialog box appears (Figure 395).

Figure 395 Select file to generate



2 Check Card File to generate the Card Inventory file.

3 Check Set File to generate the Set Inventory file.

Note: If both boxes are checked, both files will be generated.

4 Click OK to begin generating the file(s).

Download an inventory file

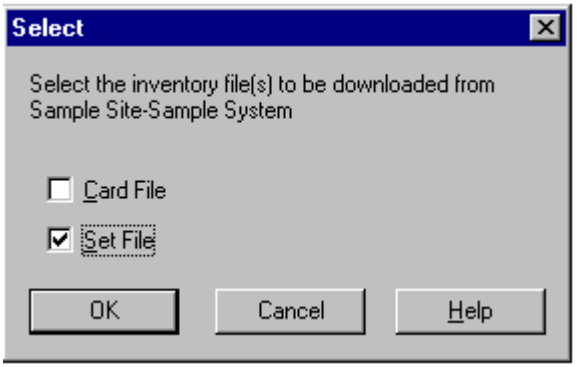
You need System Administrator privileges to download an inventory file.

To download an inventory file:

1 In the Inventory window, select Inventory > Download...

The Select file to download dialog box appears (Figure 396).

Figure 396 Select file to download



2 Check Card File to download the Card Inventory file.

3 Check Set File to download the Set Inventory file.

Note: If both boxes are checked, both files are downloaded.

4 Click OK to begin downloading the file(s).

Check file generation status

To check file status:

1 In the Inventory window, select Inventory > Status.

The System Files frame information is updated. Set and Card Inventory status consists of a state value and a substate value. See Table 55 and Table 56 for their interpretations.

Table 55 Valid state values

State value	Meaning
IDLE	There is no activity on the switch involving the inventory files.
BUSY	An inventory file is in use.

Table 56 Valid substate values

Substate value	Meaning
NONE	There is no activity on the switch involving the inventory files.
GENERATING	An inventory file is being generated by the switch software.
DOWNLOADING	An inventory file is being downloaded from the switch to the PC.

Abort file generation

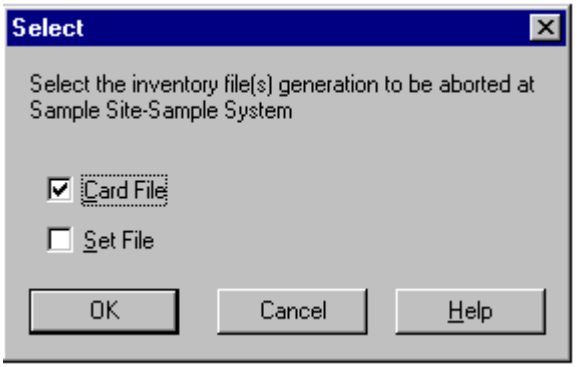
You need System Administrator privileges to abort generation of an inventory file.

To abort inventory file generation:

1 In the Inventory window, select Inventory > Abort.

The Select file to abort dialog box appears (Figure 397).

Figure 397 Select file to abort



2 Check Card File to abort generation of the Card Inventory file.

3 Check Set File to abort generation of the Set Inventory file.

Note: If both boxes are checked, both files are aborted.

4 Click OK to abort generation of the file(s).

Chapter 7
Traffic Analysis

This chapter provides basic information on setting up and running Traffic Analysis. To ensure optimum operation of this application, read the material in this chapter before attempting to run Traffic Analysis.

Overview

Traffic Analysis performs the following functions:

- Collects traffic data from a specific Meridian 1 or Succession CSE 1000 system
- Maintains a database of collected traffic data
- Defines report and graph parameters
- Generates reports to extract significant information from raw traffic data, such as trunk usage, peak periods, process loads, and junctor and loop traffic

About this chapter

This chapter is intended to be an introduction to the Traffic Analysis application, as well as an overview of its major functions. It discusses how you can best use it to manage traffic data and generate meaningful reports.

This chapter does not discuss each Traffic Analysis function and command in detail. It only discusses the major functions and how they are accessed. For detailed information on each Traffic Analysis function and command, use online Help. You can use Help to obtain information for topics either directly or via its index and word-search functions. You can obtain context-sensitive Help on any topic by simply pressing <F1> during the Traffic Analysis session, or by clicking Help in the dialog box or window in which it appears.

Traffic Analysis system sizing guidelines

System sizing for Traffic Analysis must consider several factors to ensure adequate capacity and throughput to retrieve, store, and report on traffic data. The major factors are as follows:

1. Does the system have enough free disk space to store and maintain the traffic data?
2. Is there sufficient communications bandwidth to perform traffic data collection from all systems in time?
3. Does the system have sufficient resources to provide reports on time?

Traffic Database capacity

The size of the Traffic Database varies depending on the Meridian 1 or Succession CSE 1000 system. The Traffic Database will also grow rapidly depending on how much data is kept for reporting purposes. Since the active database should normally be archived monthly (thus retaining the previous month's traffic data for reporting, as well as updating statistics on the current month), you should expect to store about two months of data in the Traffic Database. Older data should be routinely archived and moved to external storage. Since, however, it is normally stored transiently on disk as well, you should reserve capacity for the archive operation.

The actual size of the database depends on your specific configuration parameters, such as the number of loops, trunks, consoles, and so on.

Use the following example formula to estimate the size of the Traffic Database (including a one-month archive). This example formula assumes that traffic data collection is scheduled for each hour in the day (that is, you are not excluding any time for maintenance on the Meridian 1 or Succession CSE 1000 system), and that you have 31 days of archived data and 61 days of active data:

> 24 hours x (61 days + 31 days of archive) = 2208 Traffic Database samples

Thus, you should allow for 2500 samples (this allows for temporary files used during reporting). Use the following calculation to determine the total bytes required for one (1) Traffic Database sample. Once you have calculated the total bytes for 1 sample, you must then multiply it by the total number of samples:

> 1 Traffic Database sample =
>
> [(Network Loops x 29) + (Junctor Groups x 17) +
>
> ((C/S Links + A/M Links) x 240) + (D-Channels x 115) +
>
> (Multi-Purpose ISDN Signaling Processors x 59) +
>
> (Customers x 424) + (Route Lists x 299) +
>
> (Individual Attendants x 39) + (Network Classes of Service x 35) +
>
> (Incoming Trunk Groups x 35) + etc.]

Communications throughput

The amount of time that it takes a system to collect traffic data depends on the number of systems to collect, the Meridian 1 or Succession CSE 1000 system configuration, the communication line speed, and the number of communication ports available on the Optivity Telephony Manager (OTM) system.

Traffic data is produced hourly by the Meridian 1 and Succession CSE 1000 systems. This data is either collected hourly by Traffic Analysis from the Meridian 1 or Succession CSE 1000 system, or daily from an optional data buffer device, which is connected to the Meridian 1 or Succession CSE 1000 system and

stores the hourly data. Once retrieved, the data is compressed by a 4:1 ratio for reporting. After having calculated the size of the database sample, you can calculate the time required to transfer the data. These calculations allow for dialing, connection, logon, traffic data requests, logout, and disconnect:

— No buffer device—hourly:

Seconds to Collect Sample = [Setup + (Compression Ratio x Size of Traffic Sample) ÷ Modem Speed]

— With a buffer device—daily:

Seconds to Collect Sample = [Setup + (Hours per Day x Compression Ratio x Size of Traffic Sample) ÷ Modem Speed]

Note: For both cases, allow 40 seconds for setup, and allow 85% throughput on modem speed for buffer protocol.

The goal is to ensure that the time required to collect data from all systems, using all available communications paths, is less than the interval between collection cycles. Note that modem speeds are typically rated by baud rate, which roughly translates to bits per second. As a rule of thumb, use 10 bits per byte in calculating modem speed. A 2400 baud modem delivers about 240 bytes per second.

Sample calculation

The following is an example for Traffic Database sizing and a communication throughput estimate:

Switch Option 61 + 2400 baud modem (no buffer device)

7 Network Loops	x 29	= 203
1 Junctor	x 17	= 17
1 Link	x 240	= 240
0 D-Channels	x 115	= 0
0 MISPs	x 59	= 0
1 Customer	x 424	= 424
9 Route Lists	x 299	= 2691

1 Ind. Attendant	x 39	= 39
0 NCOS's	x 35	= 0
2 In. Trunk Groups	x 35	= 70
		3684 bytes total
Disk Requirements	= 2500 x 3,684	
	= 9,210,000 bytes (assumes two months on-line)	

Hourly:

Data Collection Duration	= 40 + (4 x 3684) ÷ (240 x 0.85)
	= 112 seconds = 1:52 minutes each hour

Daily:

Data Collection Duration	= 40 + (24 x 4 x 3684) ÷ (240 x 0.85)
	= 1774 seconds = 29:34 minutes each day

System resources

The resources required to produce reports are provided by the Windows environment and are affected by activities on the system. System loads use CPU, memory, disk storage, and bandwidth. A typical application such as a word processor or electronic mail may generate little CPU load, but can put large demands on memory.

In any Windows environment, memory (RAM) can be extended through the use of virtual memory. Virtual memory allows the PC to use disk space as if it were RAM. Both RAM and virtual memory must be available in sufficient quantity for all concurrent system activities. A shortage of memory either prevents an application from running or slows the overall system.

CPU loading depends on the frequency and number of reports. While the system is designed to concurrently generate multiple reports (only for multiple systems), the system runs at maximum throughput when generating one report at a time.

The Windows Print Manager ensures that data from separate reports are not mixed up on the printer. To perform this function, the Print Manager temporarily stores reports on disk (the Print Manager has a backlog limit of 99 print jobs). Therefore, the CPU speed, available virtual memory, and printer speed dictate the time required to produce the reports and the practical system limits to traffic data throughput.

Getting started

This section contains information used for running and setting up Traffic Analysis for initial use.

Before using Traffic Analysis, you must install and configure it as part of the Optivity Telephony Manager (OTM) system. Refer to "Configuring Sites, Systems, and User accounts" on page 89 for complete details on configuring Traffic Analysis and assigning it to a site and system.

System access

To access Traffic Analysis from the OTM Navigator, click the desired site and system, and then click Traffic Analysis in the Telemanagement menu. The main Traffic Analysis window appears.

After you have assigned Traffic Analysis to a site and system, you can use it to collect traffic data, generate reports and graphs, and maintain its databases.

Before you can begin collecting traffic data and report on it, you must enter the parameters for the data collection and report generation processes. The following section provides a complete example of how to accomplish these tasks, as well as instructions for scheduling and starting data collection from the Meridian 1 or Succession CSE 1000 system.

Warning: When a Limited Access Password (LAPW) is defined to collect traffic data from LD 02, configure the password to have access to all customers by setting the CUST prompt to ALL. For more information about Limited Access to overlays, see *Software Features Guide* (553-3001-306).

Traffic Analysis example

The following example is provided to assist you in setting up Traffic Analysis.

Note: The instructions in this example assume that you have successfully installed the OTM software and completed the OTM configuration tasks described in Chapter 2, "Common services."

This example illustrates how to accomplish the following tasks:

- Run OTM and open a site and system.
- Run Traffic Analysis.
- Set up the Meridian 1 or Succession CSE 1000 system for traffic collection.
- Collect traffic data from the Meridian 1 or Succession CSE 1000 system.
- Print a D-Channel Report that contains data for incoming and outgoing calls.

Run OTM and open site/system

Before you run Traffic Analysis, you must first run the OTM Navigator and open this site and system. You can then select Traffic Analysis from the Telemanagement menu in this system's window.

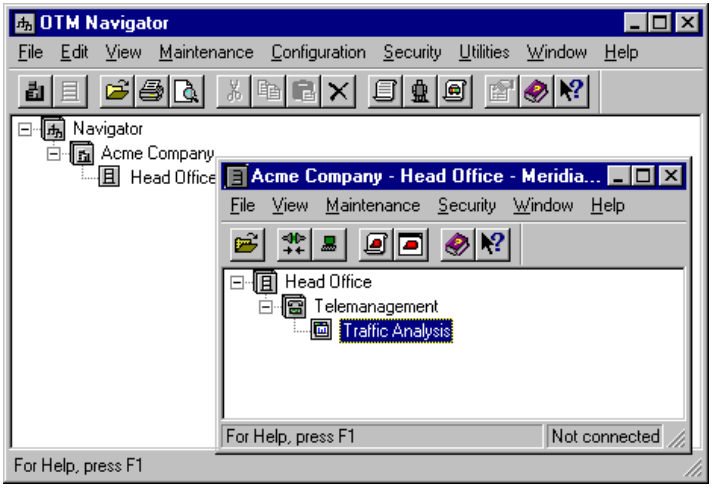
Note: This system must already have been created using the System Configuration function. Refer to Chapter 2, "Common services," for more details on the System Configuration function.

Perform the following steps to open the site and system.

1. Run the OTM Navigator by clicking the OTM Navigator icon. At the Login dialog box that appears, enter your user ID and password, and then click OK to continue.
2. To open the site and system for this example (for example, site name is Acme Company and system name is Head Office), click Acme Company in the OTM Navigator window, and then double-click Head Office from this site.

This accesses the system window for the Head Office (Figure 398).

Figure 398 OTM Navigator system window—Acme Company Head Office

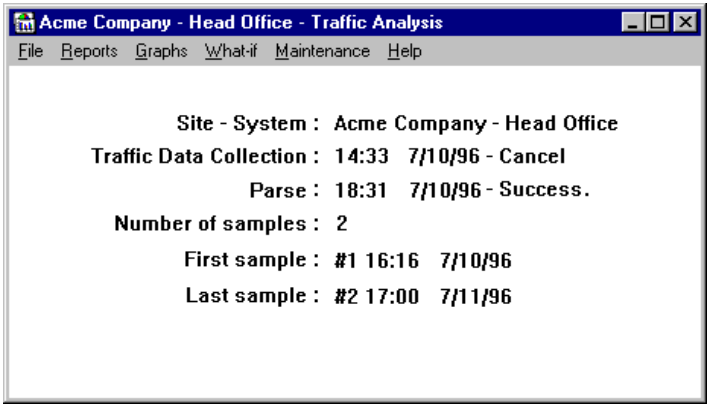


Run Traffic Analysis

Perform the following steps to run Traffic Analysis.

1. From the system window, click the Telemanagement menu item. This displays the OTM applications that have been assigned to the system Head Office under Telemanagement (for example, Telecom Billing System, Call Tracking, and Traffic Analysis).
2. To run Traffic Analysis, double-click Traffic Analysis from this menu. The Traffic Analysis main window appears (Figure 399).

Figure 399 Traffic Analysis main window



Assign Traffic Analysis to system (if not already assigned)

If Traffic Analysis has not been assigned to this system, it does not appear in the Telemanagement menu. To assign Traffic Analysis to this system, perform the following steps.

1. Click Properties from the File drop-down menu to access the System Properties dialog box.
2. From the System Properties dialog box, first enter a communications profile for Traffic Analysis by clicking the Communications tab. In the Communications Profile field, enter a profile for Traffic Analysis.
3. Click the Applications tab to assign Traffic Analysis to this system. From the Communications Profile drop-down list box, select the communications

profile that you just entered in the Communications tab. Click Traffic Analysis in the Applications list box to highlight it and turn on the Enable check box. Notice that the flag Yes appears in the Enabled field next to Traffic Analysis in this list box.

4 Click OK to assign Traffic Analysis to this system. The Traffic Analysis icon appears under Telemanagement for the system Head Office.

Set up the Meridian 1 or Succession CSE 1000 system for traffic data collection

Follow these steps to set up the Meridian 1 or Succession CSE 1000 system for traffic data collection. You only need to perform this step once when you initially set up Traffic Analysis.

1 Click Traffic Data Collection from the Maintenance drop-down menu of the Traffic Analysis main window.

2 Turn on the Set up PBX for Traffic check box. This enables the Meridian 1 or Succession CSE 1000 system to collect and transmit data.

Collect traffic data from the Meridian 1 or Succession CSE 1000 system

Follow these steps to collect traffic data from the Meridian 1 or Succession CSE 1000 system.

1 Click Traffic Data Collection from the Maintenance drop-down menu.

2 Turn on the Schedule Traffic Collection check box.

3 From this dialog box, click OK to start the traffic data collection. This schedules the load of traffic data from the Meridian 1 or Succession CSE 1000 system to a temporary data file TRAFFIC.DMP for parsing and report processing.

Once the system collects the initial traffic data, it then parses it into files with the names TF*nnnn*.DAT (where *nnnn* identifies the type of report that will be generated).

Print traffic report for incoming and outgoing calls

Follow these steps to print a report for incoming and outgoing calls.

1. Before requesting a printed report, you must select your printer as the output device. From the Traffic Analysis window, click File, and then click Specify Output Device from its drop-down menu. In the resulting dialog box, click Printer, and then click OK.
2. Click Print Setup from the File drop-down menu to select the printer for this report. Click OK to save this information and return to the Traffic Analysis main window.
3. To print the report, click System Reports from the Reports drop-down menu. The System Reports dialog box appears.
4. Click the Report down arrow to open the list of available system reports. To select the D-Channel Report, click D-Channel.
5. Click the Profile down arrow to view a list of available profiles for the D-Channel report. Select DCHANL.PRO - D-Channel Report. This is the default report profile used to select data for the D-Channel Report.
6. Click Edit next to the Profile list box to access the Profile Editor for the DCHANL.PRO report profile. A dialog box appears listing the profile's description, options, and parameters. You can enter information here to tailor the report.
7. In the Options list, click to select only the following items:

   Incoming
   Outgoing

   De-select any other highlighted items in the list.
8. To save this default profile to a new profile name, click Save As from the File drop-down menu. In the Save As dialog box, type: DCHANL1.PRO for the file name.
9. Click Close from the File drop-down menu to exit the Profile Editor and return to the System Reports dialog box.
10. Click the Filters down arrow to view a list of available filters for the report. Click None. This clears the Filters box so that the report includes all collected traffic data.
11. Click OK to print this report. A report status box indicates printing progress.

Help

As with the other OTM applications, Traffic Analysis contains an extensive Help facility, which provides you with details on all of its functions and commands. At any time during your Traffic Analysis session, you can press <F1> or click Help to access information on a specific topic. You can also click Help Topics from the Help drop-down menu of the Traffic Analysis main window, and search for Help using the Windows Help search functions.

To obtain Help for a topic, press <F1> or click Help from the currently selected dialog box or window. This accesses the Windows Help function and displays context-sensitive Help information on the current topic.

Once you have accessed Help, use it to scroll through the other Help topics, search for a specific topic, and print Help information.

User reference

This section contains a general overview of the main Traffic Analysis functions as they are accessed from its main window. It briefly describes their main function and purpose. For complete details on each of these functions and their operation, refer to the Traffic Analysis online Help function.

File menu

This menu contains functions used to select an output device, set up a printer, and exit from Traffic Analysis.

To access these functions, click File from the main window, and then select from the following menu items:

- Select Output Device
- Print Setup
- Close

Reports and graphs

The Traffic Analysis reports and graphs provide the details for the traffic data collected from the Meridian 1 or Succession CSE 1000 system. These can be printed to an output device, to the screen for review, or to a disk file. Traffic Analysis provides a set of profiles and filters to allow you to tailor the output of these reports and graphs to suit your needs. Once you have collected the traffic data from the Meridian 1 or Succession CSE 1000 system, use the commands in the Reports and Graphs menus (following sections) to generate the required reports and graphs.

Reports menu

The Reports menu contains functions and commands to print reports based on the collected traffic data.

The following are the reports available from Traffic Analysis:

- System Reports
  - Network Loops
  - Service Loops
  - Dial Tone Delay
  - Processor Load
  - Selected Terminals
  - Junctor Group
  - Command and Status Links and Application Module Links
  - D-Channel
  - Multi-Purpose ISDN Signaling Processor Traffic
  - Multi-Purpose ISDN Signaling Processor DCH Management
  - Multi-Purpose ISDN Signaling Processor Messages
  - ISDN Generic Functional Protocol
  - General Microcellular Operational Measurements
  - UWIN Operational Measurements
- Customer Reports
  - Networks
  - Trunks

  - — Customer Console Measurements
  - — Individual Console Measurements
  - — Feature Key Usage
  - — Radio Paging
  - — Parallel Radio Paging
  - — Serial Radio Paging
  - — Call Park
  - — Messaging and Auxiliary Processor Links
  - — Output Message Traffic
  - — Input Message Traffic
  - — Message Attendant Queue
  - — Telephone Set Status
  - — Telephone Messaging
  - — Network Attendant Service
  - — Semi-Permanent Connection Links Establishment
  - — Music Broadcast
  - — RAN Broadcast
- Customer Network Reports
  - — Route Lists
  - — Off Hook Queuing
  - — Call Back Queuing
  - — Remote Virtual Queuing
  - — Network Class-of-Service
  - — Incoming Trunk Group
- System Threshold Reports
  - — Dial Tone Speed
  - — Loop Traffic
  - — Junctor Traffic
  - — Super Loop Traffic
- Customer Threshold Reports
  - — Incoming Matching Loss
  - — Outgoing Matching Loss
  - — Average Speed of Answer

  - Percent Last Trunk Busy
  - Off-Hook Queue Overflow Threshold
- Customer Summary Reports
  - Traffic System Summary
  - Trunks Summary
  - Customer Console Summary
  - Individual Console Summary

Graphs menu

Similar to the Reports menu, the Graphs menu contains functions and commands to print graphs based on the collected traffic data.

The following are the graphs available from Traffic Analysis:

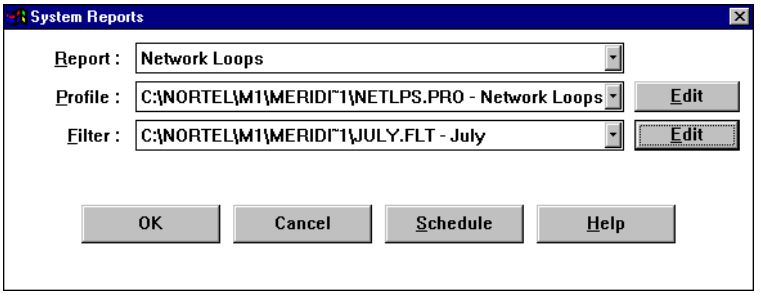
- System Graphs
  - Network Loops
  - Processor Load
- Customer Graphs
  - Trunks
  - Customer Console Measurement
  - Messaging and Auxiliary Processor Links
- Customer Network Graphs
  - Route Lists
  - Off Hook Queuing
- System Threshold Graphs
  - Loop Traffic
  - Super Loop Traffic
- Customer Threshold Graphs
  - Percent Last Trunk Busy

Generating reports and graphs

To generate a report or graph, select the report or graph type from the Reports menu or the Graphs menu. When the Report or Graph dialog box appears, enter its optional profile and filter information, and then click OK to print it.

Figure 400 is a sample dialog box in which you can enter reporting criteria and generate the report. The corresponding Graphs dialog box operates similarly.

Figure 400 System Reports dialog box



Click the drop-down button to display a list of the reports or graphs in that category. Each entry in the list has one or more associated profiles and filters. After you click to select a report (or graph), use the same process to select the appropriate profile and filter. Edit buttons next to the Profile and Filter boxes let you review and modify the selected profile and filter.

Profiles

Profiles define the kind of information to include in a report or graph. Each report or graph requires at least one profile. Traffic Analysis includes several default profiles for commonly used reports and graphs. You can define a new profile by editing one of the default profiles and saving your work under a new profile name. Profile file names use the .PRO extension.

Filters

Filters define the range of traffic data to be included on a report or graph, such as data for a specific month. Filter file names use the .FLT extension.

Exporting Reports

The Export function allows you to export traffic data from its reports to disk files in specific formats. This function is invoked when a report is generated to the screen.

After you have completed your work with profiles and filters, click one of the following buttons to proceed:

- OK to produce the report or graph
- Schedule to specify the time at which the report or graph is to be produced
- Help to obtain help for this function
- Cancel to cancel the request and return to the main window

When you have printed or scheduled the output, the system returns to the Traffic Analysis window.

"What-if" menu

In addition to generating reports and graphs, you can use Traffic Analysis to ask "What if?" questions on data output from the Meridian 1 or Succession CSE 1000 system. This is accomplished by defining scenarios and viewing hypothetical results. These "What if" scenarios provide different results based on new situations that you input into the system.

To define a scenario, select it from the list of available scenarios. Next, select a profile to define its contents and a filter to set a range for its data. This process is similar to producing a report or graph.

You can define the following "What if" scenarios:

- Processor Load
- Trunk
- Attendant Console

To access this function, open the What-if menu in the Traffic Analysis window.

Processor Load scenario

The Processor Load scenario provides information on rated capacity for your Meridian 1 or Succession CSE 1000 system. It lists overall and itemized information on the busy hour and the number of attempts at the busy hour rate over the rated capacity. It allows you to adjust the call attempts or the CPU type, and view the resulting change in busy hour CPU loading time.

Note: In the filter for this scenario, enter a range with a minimum of 24 hours to make the scenario data valid.

Trunk scenario

The Trunk scenario allows you to determine the offered traffic, monthly cost, and probability of blocking a trunk or a set of trunk groups. Use this scenario to change the offered traffic or the probability of trunk blocking, and view the results for the trunks.

Attendant Console scenario

The Attendant Console scenario provides information on console response and service levels. Use this scenario to change response times and service levels, and to view the results.

Maintenance menu

Traffic Analysis provides maintenance functions that are used to manually collect traffic data; manage the Traffic Database; edit report profiles and filters; and edit text files.

Traffic Database

The Traffic Database function is used to archive a range of traffic data, as well as to merge, delete, and reindex traffic data files.

Traffic Data Collection

The Traffic Data Collection function is used to initiate data collection from the current Meridian 1 or Succession CSE 1000 system. Use this function to set up the Meridian 1 or Succession CSE 1000 system for traffic collection, and to schedule traffic data collection. For a complete list of script files used for traffic data collection, refer to Appendix B, "Script file summary," on page B-1.

Profile Editor

Every report or graph requires a profile that defines the data to be included in a report or graph. OTM provides default profiles for common reports and graphs. Use the Profile Editor to view and edit the options and parameters in a profile. You can also use profiles to store and manage sets of configuration and customization information.

Filter Editor

Filters define the range of traffic data to be included in a report or graph. The Filter Editor allows you to create or edit report filters.

Text File Editor

In certain cases, you may periodically need to view or edit a text file used by Traffic Analysis. For example, you may edit the traffic data file collected from the Meridian 1 or Succession CSE 1000 system to correct any errors before the system processes the file. Use the Text File Editor command to edit any text files for Traffic Analysis.

Chapter 8
ESN Analysis and Reporting Tool

Overview

Electronic Switched Network (ESN) is the Meridian 1 and Succession CSE 1000 system's private network application. The ESN Analysis and Reporting Tool (ESN ART) is an OTM application designed to assist you in configuring, analyzing, and managing large and complex ESN databases.

ESN ART allows you to retrieve the ESN configuration from a Meridian 1 or Succession CSE 1000 system, and convert the overlay-based data into a PC database. Use the Windows user interface to easily view, modify, and print the data. The PC-based data can then be transmitted back to the Meridian 1 or Succession CSE 1000 system.

About this chapter

This chapter is intended to provide you with an introduction to the OTM ESN ART application, as well as an overview of its major functions.

Help

This chapter does not discuss each ESN ART function and command in detail. It only discusses the major functions and how they are accessed. For detailed information on each ESN ART function, use the online Help function. You can use the Help function to obtain Help for topics either directly or via its index and word-search functions. While running ESN ART, you can obtain context-sensitive Help on any topic you require by simply clicking Help from a specific dialog box or window.

To obtain Help for a topic, click Help from the currently selected dialog box or window. This accesses the Windows Help function and displays context-sensitive Help information on the current topic.

Once you have accessed Help, use it to scroll through the other ESN ART Help topics, search for a specific topic, or print the Help information.

To view a list of Help topics for ESN ART, click Contents from the Help drop-down menu. Choose from one of the items in this list to load the Help file and display its information.

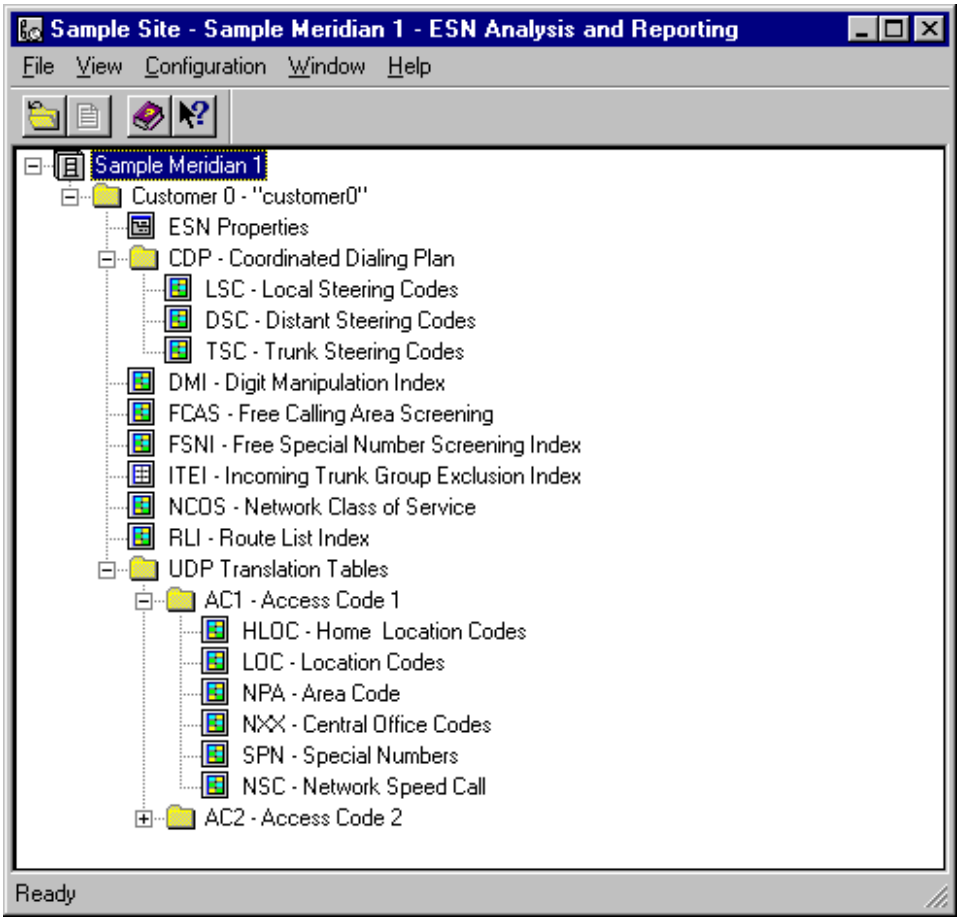
ESN ART allows you to manage the ESN data quickly and easily in the following ways:

- ESN data retrieval—You can retrieve ESN data blocks from the Meridian 1 or Succession CSE 1000 overlays, and ESN ART converts and stores the data in a PC database. You can then view and print the data.
- ESN data installation—You can clone the PC-based ESN data from an existing switch to install a new ESN configuration on a similar switch.
- ESN data modification—You can add, change, or delete the retrieved or cloned ESN data using the ESN object managers (windows that simplify ESN data definition). You can then transfer the modified ESN data from OTM on the PC to the Meridian 1 or Succession CSE 1000 system.
- ESN data reporting—You can create reports ranging from basic data to data analysis reports. You can send these reports to the screen, to a printer, or to a file.
- Export ESN data—You can export Report data to a file. Various file formats are supported (for example, Excel or comma-separated values [CSV] format).
- ESN global change data—You can make global changes to these six ESN reference objects: DMI, FCI, FSNI, ITEI, RLI, and ROUT.

Note: ESN data refers to ESN data blocks in LD 86 (except Network Attendant Service), LD 87, and LD 90.

From the System window, double-click the ESN icon to launch the ESN ART application. The ESN ART window uses the standard OTM tree control and displays a folder for each Meridian 1 or Succession CSE 1000 customer (as defined in the OTM System Window properties or retrieved from the Meridian 1 or Succession CSE 1000 system) (Figure 401).

Figure 401 ESN ART window



Each customer folder expands to show a list of ESN object manager icons. Each icon represents a specific type of ESN data or object, such as Digit Manipulation Indexes (DMI). To display or hide the ESN application list, double-click the customer folder icon, or single-click the plus sign [+] or minus sign [-].

Using ESN ART

To edit the ESN data for a customer, double-click that customer's folder. If ESN data has been defined for that customer, a list of ESN object manager icons appears in the tree under the customer. An object manager is a window that contains a list of instances of the particular ESN object (for example, a list of DMI numbers and their attributes). Double-click a particular ESN object manager icon to view and manage the associated ESN data.

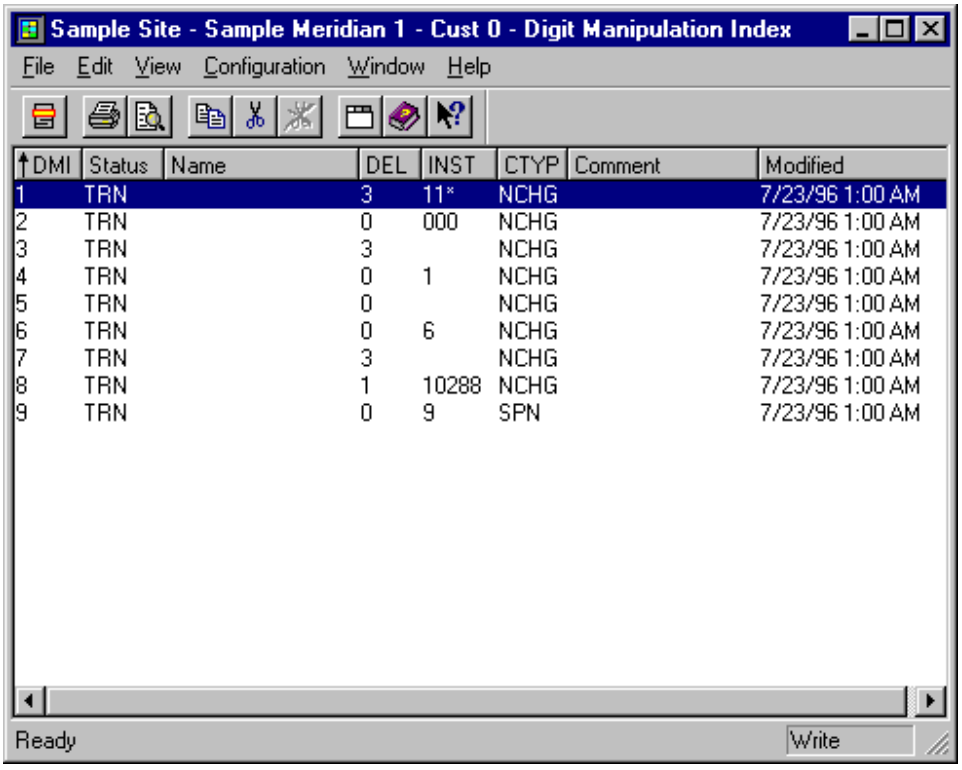
If a customer does not have any ESN data defined on the OTM PC, then the customer folder expands to show the ESN Setup Wizard. This wizard helps you to create the ESN data for the customer. See "ESN Setup Wizard" on page 849.

Working with ESN object managers

The ESN data is made up of many types of objects, such as Route List Indexes (RLI), Digit Manipulation Indexes (DMI), and Location Codes. In a typical ESN installation, most types of objects have many instances (for example, there are several instances of DMI numbers for the DMI object).

ESN ART uses object managers to assist you in viewing and managing all ESN objects. For example, double-click the DMI icon to open the DMI object manager. The DMI object manager provides a list of each DMI number defined for the customer and the values of the various DMI attributes (Figure 402).

Figure 402 ESN object manager window (DMI in this example)



Each object manager is a separate window (using the standard OTM list control) containing the list of instances of the ESN object. The number and content of the columns varies for each object manager. Typically, there is one column for each property of the object. Most properties correspond to an overlay prompt.

In the example, the DMI list manager shows you the list of all DMI numbers and their attributes. To edit the attributes of a particular DMI number, double-click that line in the list. The property sheet (Figure 403) for that DMI number appears. This is the dialog box that you use to change the values of the DMI feature prompts.

Using object manager features

You can perform the following actions in an object manager:

- Double-click an object to view and modify the object's properties.

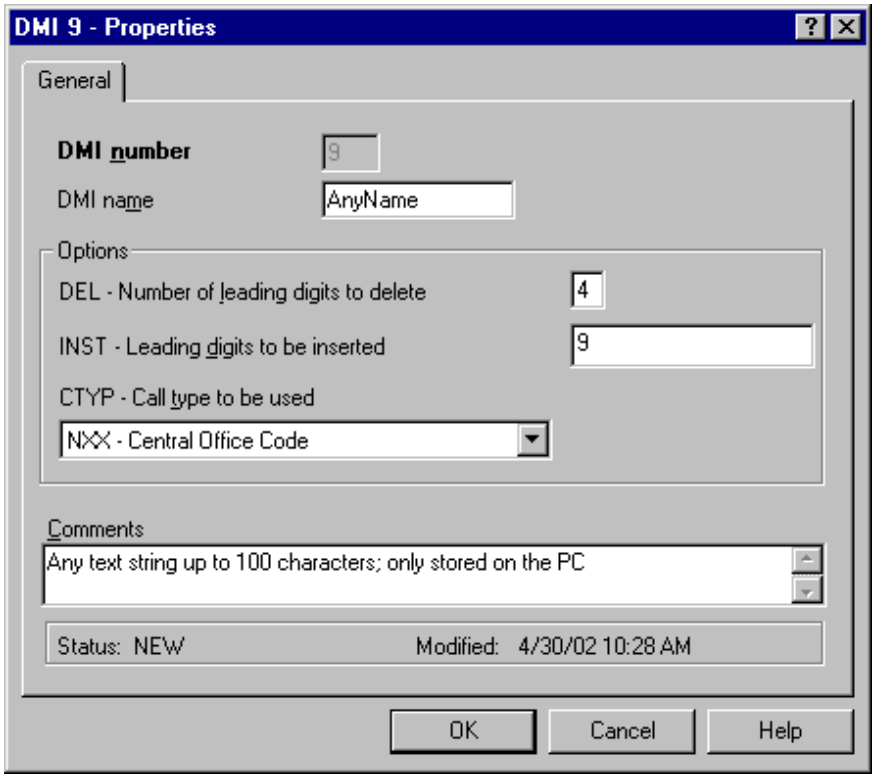
- Add, change, delete, and undelete the selected objects using the EDIT pull-down or pop-up menus.
- Change the status of selected objects to NEW, TRN, OUT, or CHG using the EDIT pull-down or pop-up menus. Use this function only if the status between the Meridian 1 or Succession CSE 1000 system and the PC is "out-of-sync."
- Click a column title to sort the column. Click again to reverse the order of the sort; an arrow icon in the column title indicates ascending (up arrow) or descending (down arrow) sort.
- Resize the window and columns.
- Use a horizontal scroll bar to see all the columns (if required).
- Select all or some rows, and then perform the following operations:
  - Copy the text of each selected row to the clipboard.
  - Delete the selected objects.
- Print all objects using the basic report for the object manager.

Each object manager in ESN ART works as described above. Some object manager windows have more than one list displayed in the window, and some property sheets have more than one tab, but the principal is always the same.

Working with Property Sheets

Each instance of an ESN object in the object manager's list has an associated property sheet. The property sheet is a dialog box that allows you to modify the ESN data for the object (Figure 403).

Figure 403 ESN Property sheet (DMI in this example)



The property sheet contains all attributes of an object. Each attribute typically corresponds to a prompt in an ESN overlay. (If the associated X11 package is not equipped, its controls are disabled in the property sheet.)

Note: The Name and Comments fields are exceptions to this convention. Any information that you enter into these fields is optional, for your reference only, and is saved only in the PC database. This data cannot be transmitted to the Meridian 1 or Succession CSE 1000 system.

Some ESN property sheets have more than one tab. Click a tab to edit the ESN data in that tab.

Property sheet controls

The attributes of an object are represented as Windows controls, such as edit boxes and drop-down list boxes. For example, the Yes/No type of prompts are represented as check boxes. The names of prompts appear next to the controls. Property sheets share the following controls:

- The appearance of the property sheet for adding a new object is different from the appearance when changing an object. The title bar is different and the object ID (for example, DMI number) is disabled when you are changing an object.

Note: You must delete an object and re-add it to change the object ID.

- Edit boxes are used for Object IDs and names; multi-line edit boxes are used for the Comments field and some repeating data, such as lists of allowed dialed digits. Mandatory edit boxes have bold label text. Optional edit boxes typically have a default value. Edit boxes have a tool tip pop-up which describes the allowed values (for example, “Enter a value between 1 and 32”).
- Check boxes represent the Yes/No type of prompts, where checked means Yes.
- Drop-down list boxes present a list of choices. These correspond to prompts with multiple responses. You can type the first letter to make a selection. The text in drop-down list boxes includes the actual prompt response followed by a short description. For example:
  - NPA: Area Code
  - NXX: Central Office Code
- Each control has an associated Help description. Click a control, and then press <F1> for help on the selected control. This displays the description on the associated prompt in the I/O guide Help.
- Most ESN objects also have a Last Modified date field and a Synchronization Status field. These fields appear as read-only text in the property sheet. The Status field can have the following values in OTM:
  - NEW: added on the PC but not on the Meridian 1 or Succession CSE 1000 system. Deleting a new object removes it from the list because this change does not need to be synchronized to the Meridian 1 or Succession CSE 1000 system. Changing a New object only changes the

Modified timestamp (that is, it is still New until synchronized with the Meridian 1 or Succession CSE 1000 system). See "Synchronizing the OTM ESN database and the Meridian 1 or Succession CSE 1000 system" on page 838.

— TRN: The object has been synchronized with the Meridian 1 or Succession CSE 1000 system. The object has been successfully transmitted to or retrieved from the Meridian 1 or Succession CSE 1000 system.

— CHG: The object has been changed on the PC but not on the Meridian 1 or Succession CSE 1000 system.

— OUT: The object has been deleted on the PC but not on the Meridian 1 or Succession CSE 1000 system. The object remains on the PC until successfully removed from the Meridian 1 or Succession CSE 1000 system.

Note: The initial state of all objects after being cloned from another customer is New.

Example

In the DMI example, you may want to change the Call type (CTYP prompt). The following example explains editing the CTYP prompt for a particular DMI:

1. In the DMI list, double-click the DMI instance that you want to change (this opens the property sheet for that DMI).
2. Move to the CTYP list box, and select a new value from the list of appropriate values.
3. Click OK. The data is stored in the OTM database ready for transmission to the Meridian 1 or Succession CSE 1000 system. (You can click Cancel to close the property sheet without changing the ESN data.)
4. Later, when you synchronize the data between OTM and the Meridian 1 or Succession CSE 1000 system, this change is made in the Meridian 1 or

Succession CSE 1000 system's ESN data. See "Synchronizing the OTM ESN database and the Meridian 1 or Succession CSE 1000 system" on page 838.

Note: This document does not cover the details of each object type because each object manager and property sheet is designed to be fully documented in the online Help. You can also request What's This? Help for any field or button while using ESN ART.

Shortcuts

To open a property sheet for an object, you can double-click the object in the list in the object manager window. Alternately, right-click the object to open the pop-up menu, and select Properties to open the property sheet for that object.

The right mouse button opens a pop-up menu that allows you to add, delete, and undelete an object, open the object's property sheet, and get Help on the object.

Defining ESN Properties

Some ESN data is defined once per customer. The ESN Properties property sheet allows you to configure this data in a property sheet (no object manager is needed, since there is only one instance of these values for the customer.) To open the ESN Properties property sheet, select ESN Properties from the tree.

The following tabs make up the ESN Properties property sheet:

- General Tab: The General tab contains data from ESN Features sections in LD 86.
- Limits Tab: The Limits tab contains data from ESN options in LD 86.
- TOD Schedules Tab: The TOD Schedules tab contains Time of Day Schedules and Extended TOD schedules from LD 86.
- Network Control Tab: The Network Control tab contains data from ESN Network Control section in LD 87.
- NCOS Map Tab: The NCOS Map tab contains data from Network Class of Service mapping from LD 87.

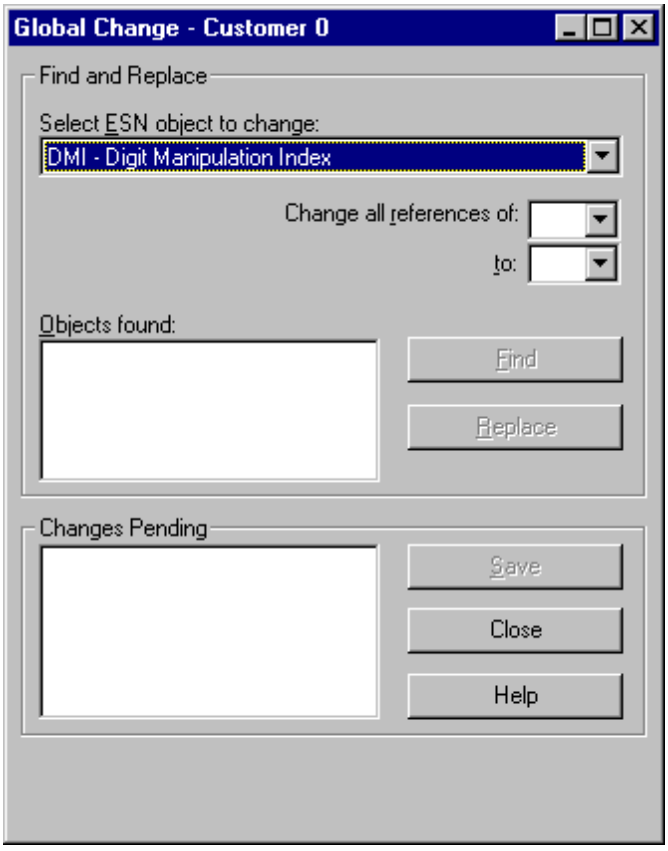
ESN global change

Global change allows you to change all references to an ESN object. For example, use global change to find all places where DMI 3 is used, and optionally change it to DMI 11.

Example: Changing references to a DMI

1. Select Global Change in the Configuration menu.
2. Select DMI in the first list box.
3. Enter the DMI number to be changed and its new number.
4. Click Find. This generates a list of ESN objects using the DMI number. DMIs occur in RLEs, HLOCs, LSCs, NPAs, NXXs, and SPNs.
5. Click Replace. This performs the change in memory and adds the change to the Changes Pending list box. The DMI itself is not changed.
6. Repeat the Find and Replace as desired.
7. Click Save to save the changes. The Save cannot be undone. Click Cancel to close the window without saving the changes.

Figure 404 ESN Global Change window



Synchronizing the OTM ESN database and the Meridian 1 or Succession CSE 1000 system

When you have finished defining the ESN data for a customer, you are ready to transmit the data to the Meridian 1 or Succession CSE 1000 system. Alternately, you may be ready to retrieve data from a Meridian 1 or Succession CSE 1000 system to bring your OTM PC up to date. This is called *synchronizing* the data—guaranteeing that the ESN data in OTM and on the Meridian 1 or Succession CSE 1000 system are “in sync.”

Use the Synchronize menu to select Transmit To Meridian 1 or Retrieve From Meridian 1. You have the option of scheduled or immediate transmission or retrieval. You also have the option to view the last transmit or retrieve.

Note: To synchronize data, the TTY port on the Meridian 1 must be configured with a user type of SCH.

Preparing the ESN ART Environment for Synchronization

Follow these guidelines to assure seamless synchronization:

- The customer data, system software release, and software package information stored in the OTM System Property Sheet must be correct. You can define this data manually in the System Property sheet under the System Data tab, or by using the Update System Data item in the System window.

Note: Update System Data retrieves the list of customers from the Meridian 1 or Succession CSE 1000 system. This does not include the User ID and password for the customer. Before retrieving or transmitting data, ensure that the correct User ID and password are defined in the OTM System Properties.

- When copying an ESN database, if the X11 release and packages are different between OTM and the Meridian 1 or Succession CSE 1000 system, the ESN data may be impacted as follows:
  - Data is lost if the package is not enabled on the destination.
  - Default data is used if the package is not enabled on the source.
- ESN ART does not retrieve LD 16 route data. Transmission errors occur if you enter invalid route numbers.
- Nortel Networks recommends that you validate ESN data before you transmit it to the Meridian 1 or Succession CSE 1000 system.

Validating ESN data

Whenever you transmit ESN data to the Meridian 1 or Succession CSE 1000 system, the ESN ART software automatically examines the data to ensure it is valid. However, it is a good practice to validate the data before transmitting. From the Configuration menu, select Validate ESN Data. The results of the validation process appear in a log file and also appear in Windows Word Pad.

Retrieval and transmission

After you have completed the ESN ART environment for synchronization, you can retrieve ESN data from the Meridian 1 or Succession CSE 1000 system, or transmit ESN data to the Meridian 1 or Succession CSE 1000 system.

Synchronization — Retrieval

Follow these steps to retrieve data from the Meridian 1 or Succession CSE 1000 system:

1. Launch the ESN application from the site and system that you want.
2. From the ESN main window, select the customer from whom you want to retrieve the data.
3. Select File > Synchronize > Retrieve > Now (or Schedule) from the File menu.

Note: If you select Now, your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

The Synchronization application is launched and begins the retrieval process. When the retrieval is done, the Synchronization application disconnects from the Meridian 1 or Succession CSE 1000 system and parses the downloaded ESN data. Select Update DB to store the parsed ESN data into the PC database.

Note: Selection Update DB deletes all existing ESN data for the selected customer before saving the new parsed data.

All of the new data objects have the status TRN after the database has been updated, indicating the data on the PC database and the Meridian 1 or Succession CSE 1000 system is synchronized. The data can now be modified using the list managers and property sheets, and then transmitted back to the Meridian 1 or Succession CSE 1000 system.

Synchronization - Transmit

Follow these steps to transmit data on the PC database to the Meridian 1 or Succession CSE 1000 system:

1. Launch the ESN application from the site and system that you want.
2. From the ESN main window, select the customer from whom you want to retrieve the data.
3. Select Synchronize > Transmit > Now (or Schedule) from the File menu.

Note: If you select Now, your request is sent to the scheduler queue, which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they are executed first.

The Synchronization application is launched and begins the transmit process. It begins by loading ESN data for the selected customer and validates all the ESN data objects (on the PC side). The Synchronization application only transmit ESN data objects that have the status OUT, NEW, or CHG. However, not all data objects are transmitted and updated in the same manner. Based on the status and the data objects, they are transmitted to the Meridian 1 or Succession CSE 1000 system differently. Other data objects that have the TRN status are not transmitted to the Meridian 1 or Succession CSE 1000 system. They remain unchanged on the PC database.

ESN data block

The ESN data block is transmitted in a different order when it has the status OUT or NEW. If the ESN data block has the OUT status, it is deleted from the Meridian 1 or Succession CSE 1000 system last because the system does not allow deletion of the ESN data block when there are data remaining in the ESN overlays (LD 86, LD 87, LD 90). This also means that the Synchronization

application must successfully delete (from the Meridian 1 or Succession CSE 1000 system) all ESN data for the selected customer to be able to successfully delete the ESN data block. However, if an error occurs while attempting to delete all the ESN data, the Synchronization application does not attempt to delete the ESN data block from the Meridian 1 or Succession CSE 1000 system.

If the ESN data block has the NEW status, it is transmitted twice. The first time, the NEW response (to an REQ prompt) is used to add the new ESN data block. However, the Meridian 1 or Succession CSE 1000 system does not ask for the NMAP and the ETOD prompts when a NEW response is used, but does so for a CHG response. Therefore, the ESN data block is transmitted a second time using the CHG response to transmit all of the NMAP and ETOD.

CHG status

Based on the prompt groups, the transmit behaves differently for the status CHG. For the simple prompt groups, when their data objects have the status CHG, they are transmitted to the Meridian 1 or Succession CSE 1000 system using the CHG response, which is straightforward. For the special (more complex) prompt groups, they are first deleted from the Meridian 1 or Succession CSE 1000 system using the OUT response, and then added (includes the new changes) back to the system using the NEW response. These special prompt groups include FCI, FSNI, LOC, NPA, NXX, and SPN.

When these data objects are transmitted to the Meridian 1 or Succession CSE 1000 system, they are first deleted from the system, and if the deletion was successful, their status is immediately changed from OUT to NEW. Then they are added back to the Meridian 1 or Succession CSE 1000 system. If that is also successful, their status is immediately changed from NEW to TRN. This way, if the PC loses connection to the Meridian 1 or Succession CSE 1000 system, or if there is a system failure between the delete and the add, then the next transmit adds these prompt groups (with the NEW status) back to the Meridian 1 or Succession CSE 1000 system.

Status updates and transmission errors

During transmission of the ESN data objects to the Meridian 1 or Succession CSE 1000 system, the Synchronization application updates the status of each prompt group accordingly. The table below lists synchronization status updates for before and after a successful transmission:

Table 57 Synchronization status updates

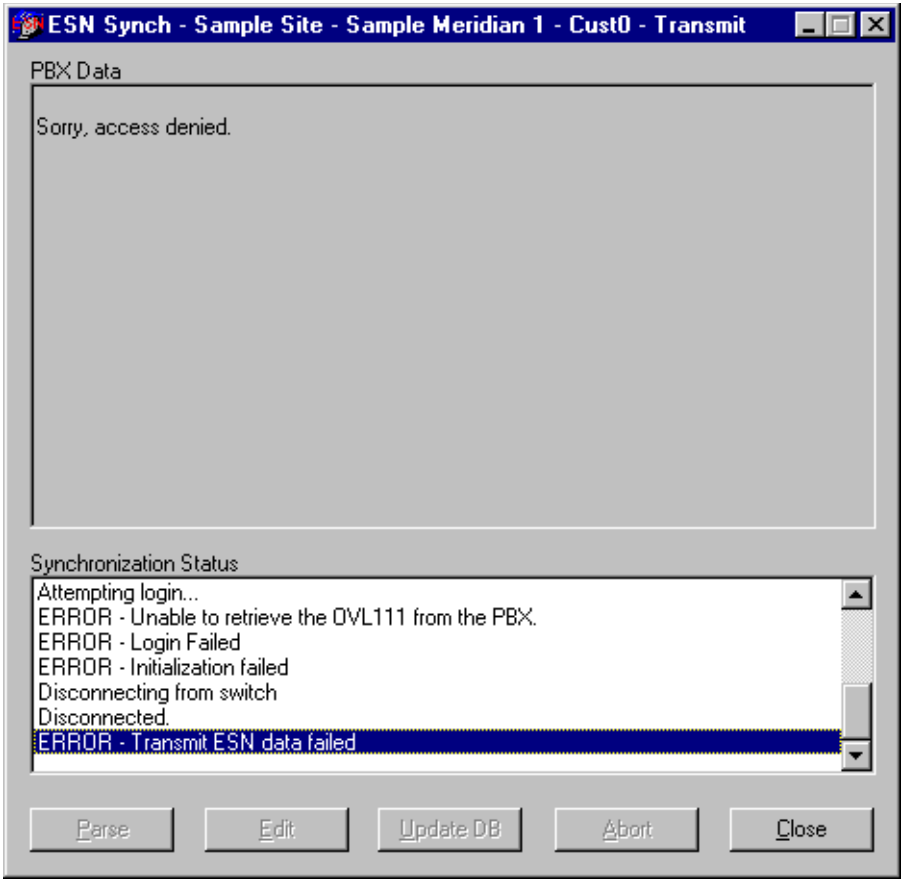
Synchronization status before transmission	ESN data	Synchronization status update on OTM PC after transmission
OUT	All	Remove from database
NEW	All	TRN
CHG	All (except special prompt groups)	TRN
*1. CHG (OUT)	Special prompt groups only	NEW
*2. CHG (NEW)	Special prompt groups only	TRN
* The items indicated by this symbol actually have one status CHG, but they are transmitted in two steps: deleted from Meridian 1 using the OUT response, and added back to the Meridian 1 using the NEW response. For each step completed successfully, the sync status is changed and updated to the PC database.		

If the Synchronization application detects errors during transmission of ESN data, it does not update the status for that data. The status remains unchanged as prior to transmission, and the errors are logged in a file.

Console window

Once synchronization starts, the ESN synchronization console window displays the interactions between the OTM PC and the Meridian 1 or Succession CSE 1000 overlays (LD 86, LD 87, and LD 90).

Figure 405 Synchronization console window



The top part of the console window—the Meridian 1 Data section—allows you to view the interactions between the PC and the Meridian 1 or Succession CSE 1000 system. For example, when retrieving ESN data from the Meridian 1 or Succession CSE 1000 system, the printout from the ESN overlays appears in this window.

Synchronization log files

The bottom part of the console window, the Synchronization Status section, lists the errors found during transmission, retrieval, or parse operations. When retrieving the data from the switch, the interactions include many print sequences. This process has the potential to pick up transmission errors or TIMxxx (time messages) generated by the Meridian 1 or Succession CSE 1000 system. All transmission or retrieval information is saved on the OTM PC in the following synchronization files (*XX* represents the customer number):

Nortel\Common Data\[sitename]\[systemname]\
ESN\ESNRetrieve*XX*.dld

Nortel\Common Data\[sitename]\[systemname]\
ESN\ESNTransmit*XX*.log

Note: To edit synchronization log files containing a .dld extension, you must have Microsoft Word 97 installed on the OTM PC.

If you encounter retrieval or transmission problems, you can view the retrieve or transmit log file to find the basis for the errors.

Login log file

The login information in the Console window can help you determine the reasons for login failures. This information is saved in the following login file:

Nortel\Common Data\[sitename]\[systemname]\ESN\SyncLogin.log

Exiting ESN ART or OTM while synchronizing

If you exit the ESN ART application while synchronizing data, the synchronization console stays open to allow synchronization to finish.

If you exit OTM while synchronizing data, a confirmation window lets you know that synchronization is still in progress. You are given the option to abort the synchronization or to allow synchronization to finish. To protect data integrity, Nortel Networks strongly recommends that you allow synchronization to finish normally.

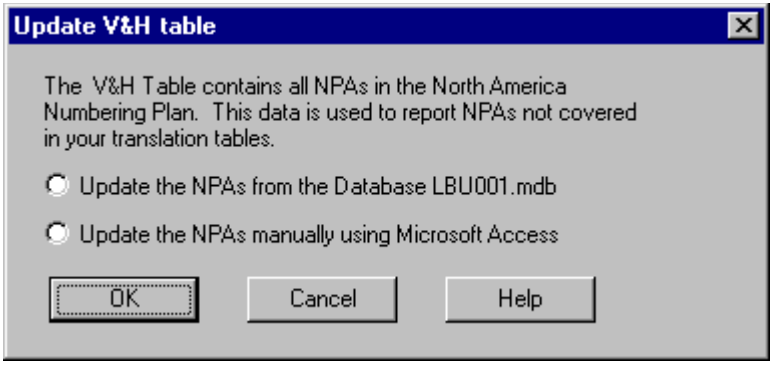
Updating the V&H table

The V&H table contains all North American NPAs and the associated state or province. This information is used by the analysis report, which checks for NPAs not covered in the NPA object manager.

Select Update V&H table from the File menu to open the following dialog box, which allows you to:

- Import new NPAs from the Call Accounting rate table disk
- Manually update the NPAs via Microsoft Access

Figure 406 Update V&H table dialog box



Importing NPAs

When you select the “Update the NPAs from file Database LBU001.mdb” option from the Update V&H table dialog box, the standard File Open dialog box appears. Select the LBU001.mdb file (usually on a floppy disk). ESN ART then reads the NPAs and updates the appropriate datafile. This operation takes approximately one minute. You can click Cancel to close the dialog box without updating the datafile. A backup of the datafile is made in case of a PC crash during the operation. If this occurs, you can try the update again, or rename the old database file (called vhDB.mdb) in the ESN Program folder.

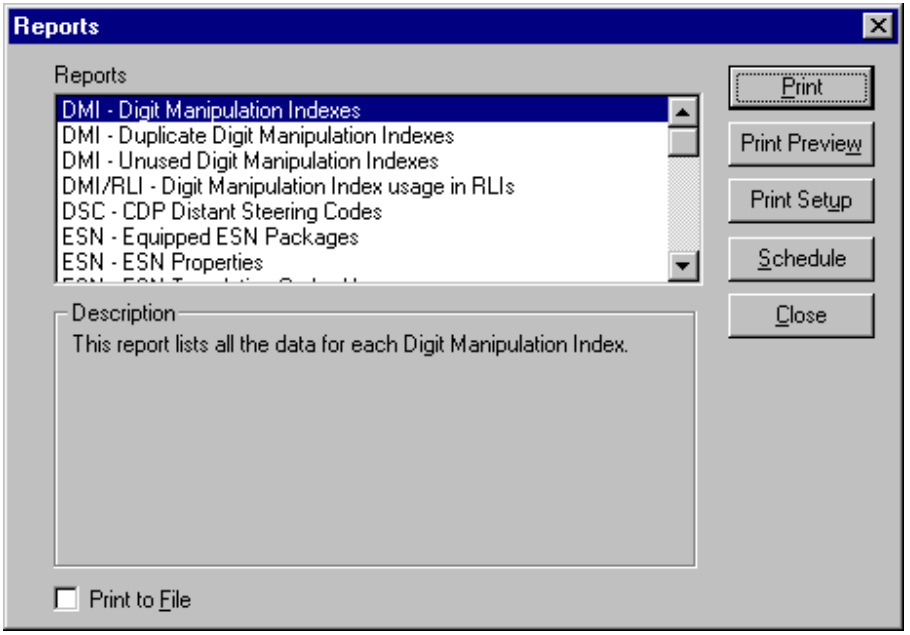
Manually updating NPAs

When you select the “Update the NPAs manually using Microsoft Access” option from the Update V&H table dialog box, ESN ART simply opens the database file using Microsoft Access. You can then add, change, or delete NPAs as desired and save the file. This operation fails if the PC does not have Access.

Printing ESN reports

ESN ART includes many predefined reports to help you in your work. In the File menu, select Reports. The Reports window allows you to select one or more reports, configure print settings, and schedule the report(s) for a particular time. You can print more than one Basic report at a time.

Figure 407 Reports window



The following predefined reports are available:

- Basic Reports
  - — DMI - Digit Manipulation Indexes

- DSC - CDP Distant Steering Codes
- ESN - ESN Properties
- ESN - Equipped Packages
- FCAS - Free Calling Area Screening Indexes
- FSNI - Free Special Number Screening Indexes
- HNPA/HLOC- Translation Tables Summary
- ITEI - Incoming Trunk Exclusion Indexes
- LOC - Location Codes
- LSC - CDP Local Steering Codes
- NCOS - Network Class of Service
- NPA - Numbering plan Area Codes
- NSCL - Network Speed Call
- NXX - Central Office Translations
- RLI - Route List Indexes
- SPN - Special Number Translations
- TSC - Trunk Steering Codes

• Analysis Reports
- DMI - Duplicate Digit Manipulation Indexes
- DMI - Unused Digit Manipulation Indexes
- DMI/RLI - Digit Manipulation Index usage in RLIs
- ESN - Translation Codes Usage
- NPA - Area Codes not covered in translation tables
- NPA - Area Codes with no associated SDRR codes
- NPA - Invalid Area Codes in FCAS and Translation Tables
- RLI - Route List Index usage in NPAs, NXXs, SPNs
- RLI - Route List Index TOD Schedules

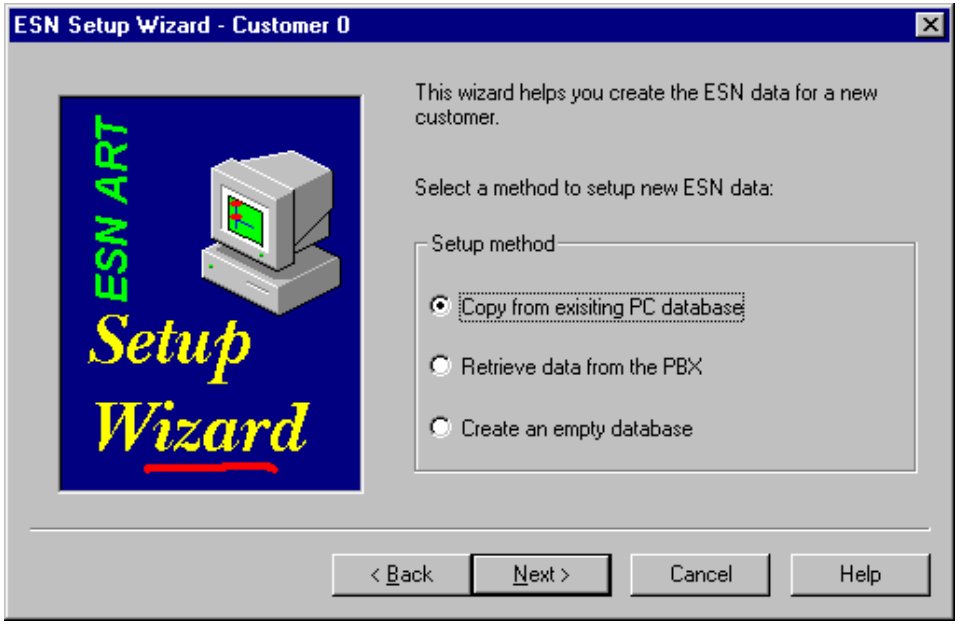
• Grouping Reports
- OVL86 - ESN Basic reports on LD 86
- OVL87 - ESN Basic reports on LD 87
- OVL90 - ESN Basic reports on LD 90
- Special - All ESN specialized analysis reports

ESN Setup Wizard

The ESN Setup Wizard helps you to set up the ESN database for a Meridian 1 or Succession CSE 1000 customer. In the Wizard's first page, you select one of the following methods for creating a database:

- Copy from an existing ESN ART PC database.
- Retrieve data from the Meridian 1 or Succession CSE 1000 system.
- Create an empty database.

Figure 408 ESN Setup Wizard



Click Next to move to the second page. The second page depends on your choice in the first page, as follows:

- Copy from an existing ESN ART PC database: This option displays a tree with all sites, system, and customers with a PC-based ESN database. Select the customer with the data that you want to copy, and then click Finish. This creates the ESN database for the customer. All ESN objects are given a status of New. You can then modify the data, such as changing the Home Area Code, and then transmit the data to the Meridian 1 or Succession CSE 1000 system using the Transmit Now or Scheduled option in the File Menu.

Note: When copying an ESN database, if the X11 release and packages are different between OTM and the Meridian 1 or Succession CSE 1000 system, the ESN data may be impacted as follows:

- Data is lost if the package is not enabled on the destination.
- Default data is used if the package is not enabled on the source.

- Retrieve data from the Meridian 1: This option retrieves the ESN data from the Meridian 1 or Succession CSE 1000 system. This is the same as using the Retrieve Now or Schedule option in the File menu.
- Create empty database: This option creates an empty database. Before the database is created, you must fill in the mandatory fields (such as the Home Area Code) in the ESN Properties.

The ESN Setup Wizard is designed to be documented fully in the online Help. If you have any questions while using the Wizard, click Help. You can also request What's This? Help for any field or button.

ESN ART software dependencies

Table 58 shows all object managers in the ESN window tree. Some items appear only if the associated software package is equipped on the Meridian 1 or Succession CSE 1000 system. The system must have the multi-customer package for the customer folders to appear.

Table 58 X11 packages required for the ESN ART object managers

ESN object manager	Software package
Customer x - Customer Name	cust
ESN Features and Network Control	bars/nars
CDP - Coordinated Dialing Plan	cdp
• LSC - Local Steering Codes	cdp
• DSC - Distant Steering Codes	cdp
• TSC - Trunk Steering Codes	cdp
DMI - Digit Manipulation Index	bars/nars
FCAS - Free Calling Area Screening Index	bars/nars
FNSI - Free Special Number Screening Index	fnp
ITEI - Incoming Trunk Group Exclusion Index	bars/nars
NCOS - Network Class of Service	ncos
RLI - Route List Index	bars/nars
Translation Tables	bars/nars
• HNPA/HLOC - Home NPA and Location Codes	bars/nars
• LOC - Location Codes	bars/nars
• NPA - Area Codes	bars/nars
• NXX - Central Office Codes	bars/nars
• SPN - Special Numbers	bars/nars
• NSCL - Network Speed Call	nars

Appendix A
Using Optivity Telephony Manager Web Desktop Services

OTM Web Desktop Services allows you to view and modify the configuration of your telephone via a web browser.

The Web display includes a graphical view of the telephone, and shows the configured features. Help text is available for the features configured on your telephone.

User Login page

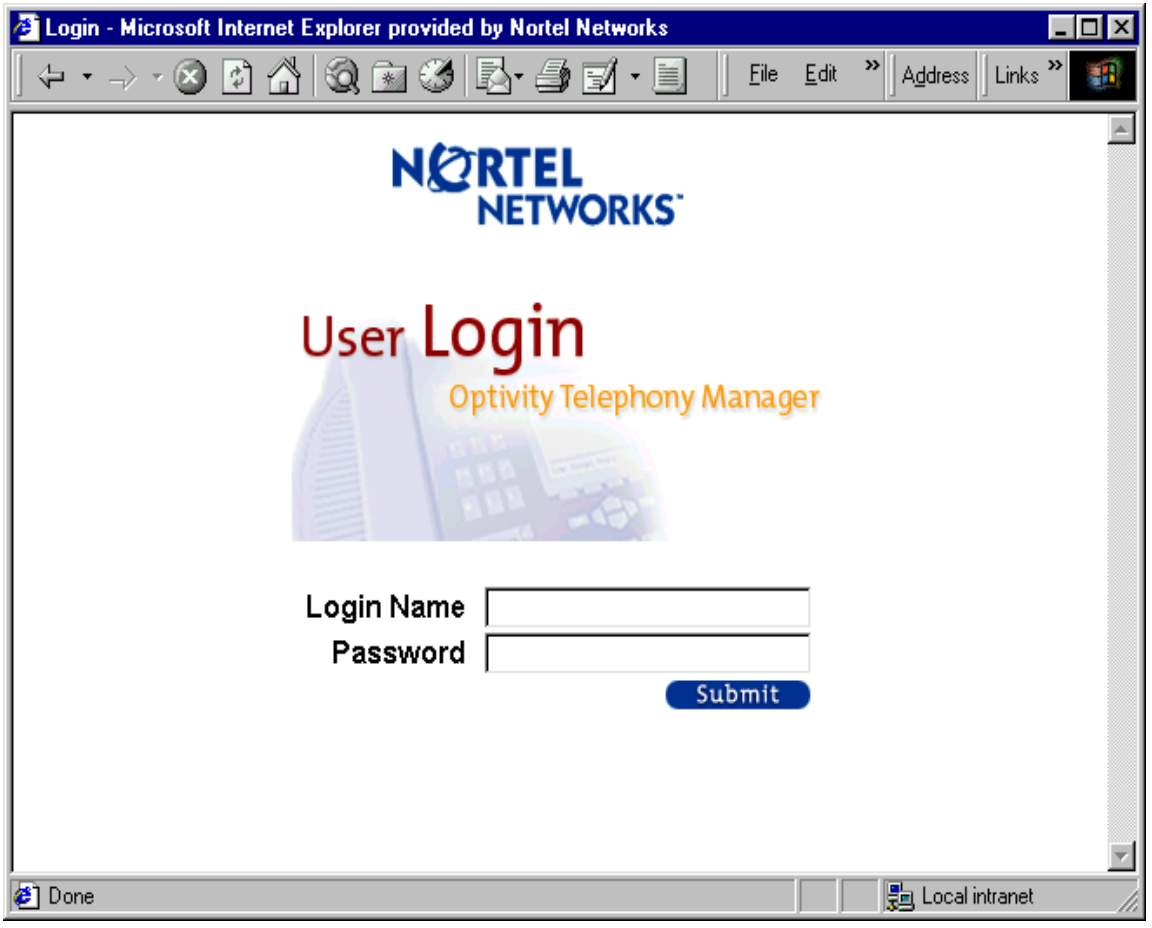
Login security ensures protection against unauthorized entry and enforces access privileges for logged in users.

To log in to Desktop Services:

1. Start your web browser.
2. Enter the URL provided by your network administrator.

   The OTM User Login page opens (Figure A-1).

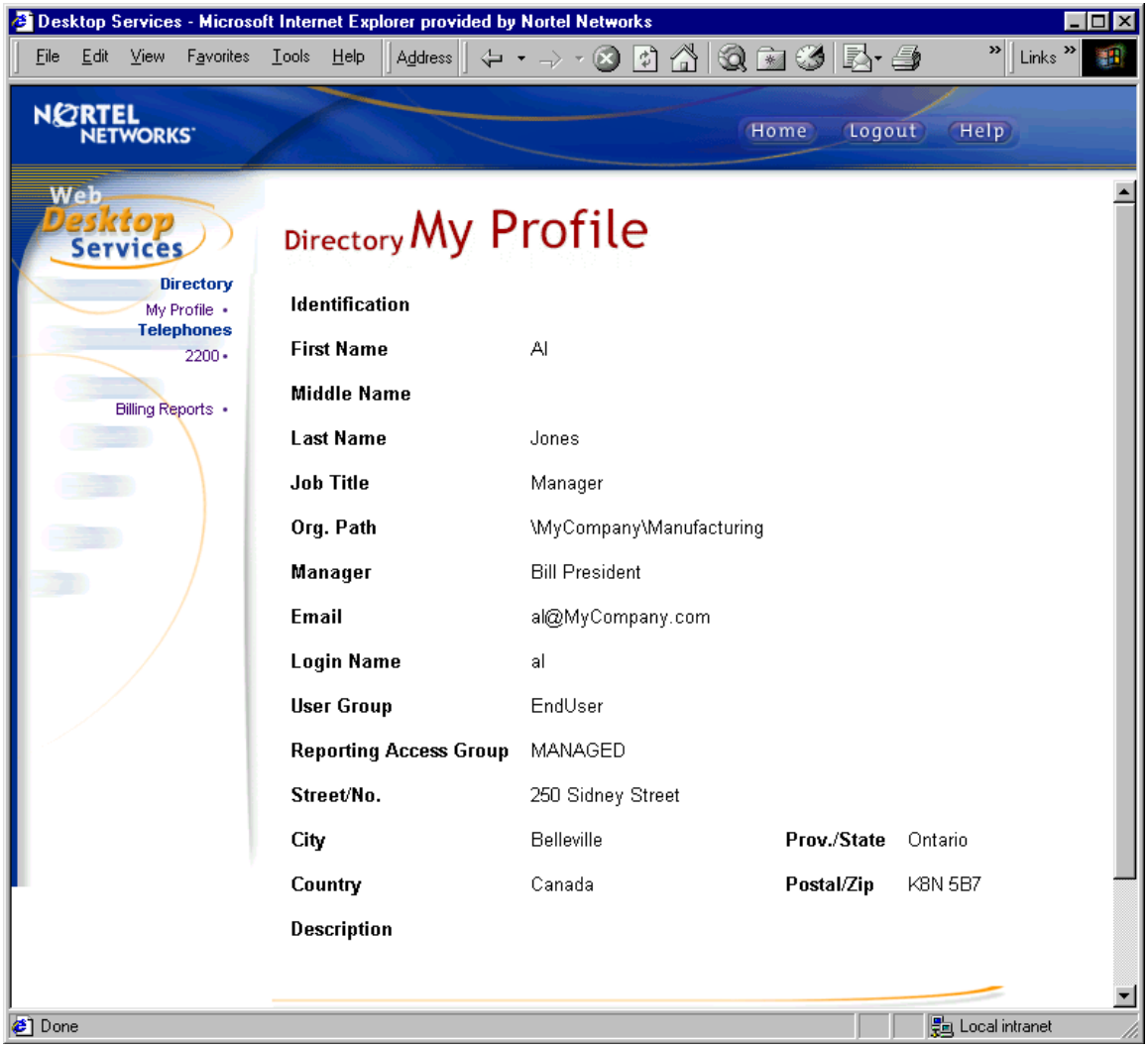
Figure A-1 User Login page



3 Enter the User Login name and Password provided to you by your network administrator

Your personal Web Desktop Services main page, titled “My Profile,” opens. Figure A-2 shows an example of the main page for Al Jones.

Figure A-2 My Profile page



Web Desktop Services main page layout

Your Web Desktop Services main page includes the following common elements:

- **Information Banner** (top): Contains the Nortel Networks logo, plus Help, Logout, and Home buttons. The Help button takes you to general help on how to use the web pages. The Home button takes you to your "My Profile" page. The logout button takes you to the login page.
- **Navigation Bar** (left side): Lists hypertext links to various Desktop Service pages. When you click an item in the Navigation bar, the related page appears in the Content Frame of your web browser.

Note: In the rare situations where you have telephones on different Meridian 1 and Succession CSE 1000 systems managed by the OTM Server, the Navigation Tree expands to include the systems as the main nodes. You then select the My Profile or Telephone(s) in the desired system.

- **Content Frame**: Contains the page based on your selection in the Navigation bar. There are three types of pages:
  - My Profile page: Contains general information about you (name, department, address, and so forth). The information displayed is determined by your network administrator.
  - Telephone pages: Contains telephone configuration data. You may have more that one telephone. The information displayed is determined by your network administrator.
  - Other Links: Contains additional links that may be provided by your network administrator.

A line is placed at the bottom of each content page to visually indicate the end of the page. If vertical or horizontal scrolling is required, the entire page is scrolled.

My Profile page

Once you log in, the main page, My Profile, opens. This page contains general information about you. The system retrieves this information from the OTM Directory. Click the Home button in the Banner, or click My Profile in the Navigation Bar to return to this page.

The information that appears is fixed and cannot be changed. If there is no information for a field, it is left blank.

The following information is presented on the My Profile page:

- Employee first, middle, and last name
- Identification (employee ID)
- Job Title
- Org Path (this is extracted from the Organization Path in the OTM directory)
- Manager
- E-mail address
- Login Name
- User Group
- Web Reporting Role
- Address fields
- Description

Telephone pages

Once you have logged in, you are presented with a list of telephones in the Navigation Bar. The telephones are identified by prime DN. To get this list, the Web Server scans all the employee databases, one per Meridian 1 or Succession CSE 1000 system, on the Server.

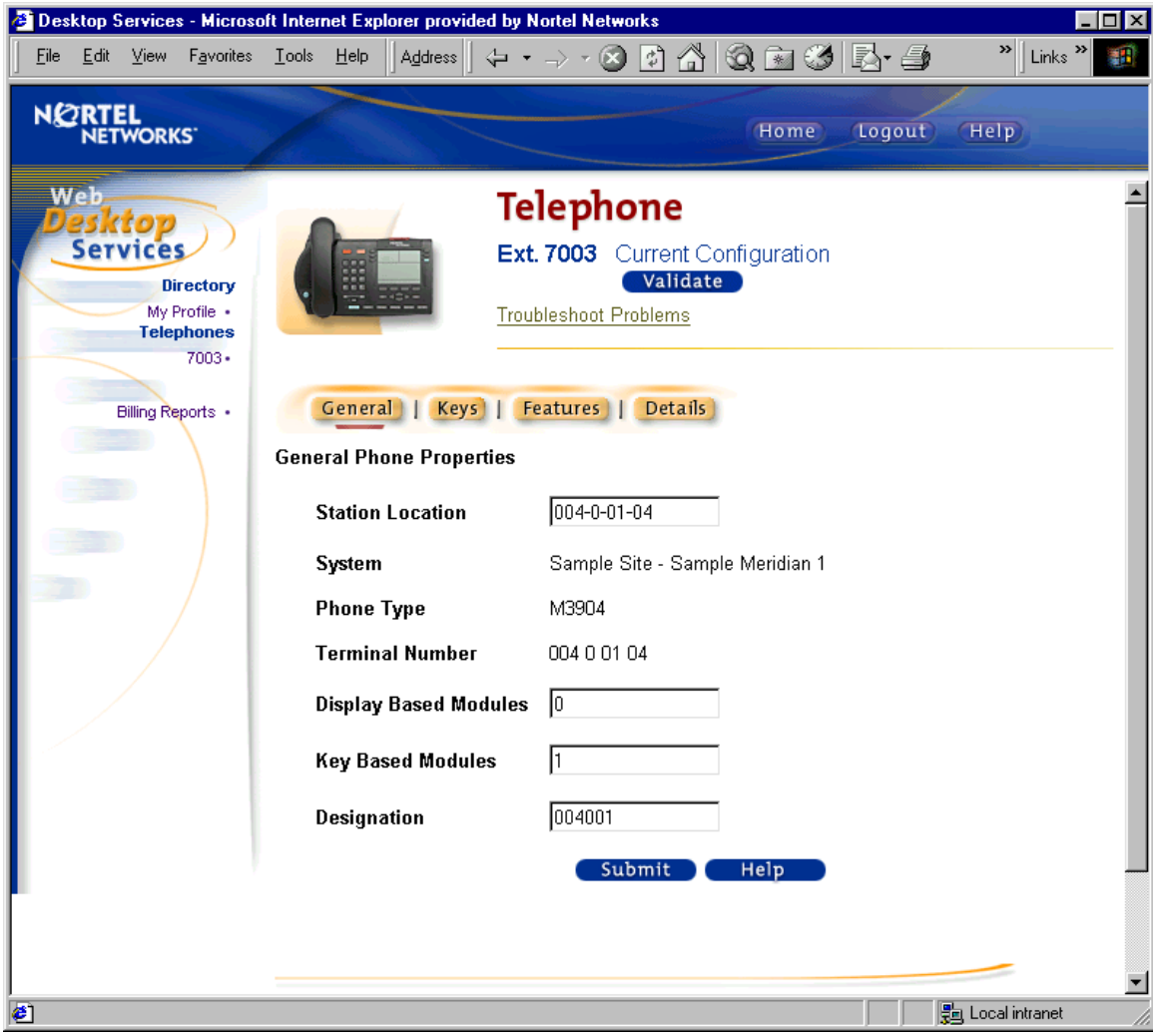
If you have telephones on different systems, served by different OTM servers, then you must log in to the different servers to access these telephones. Your network administrator provides you with a URL, User Login name, and Password for each of these OTM servers.

To open the Telephone pages:

➔ Click a Telephone DN in the Navigation Bar.

The Telephone pages open in the Content Frame with the General page displayed (Figure A-3).

Figure A-3 Telephone—General page



The Telephone pages have a small graphic in the top left corner. This graphic is detailed enough for you to recognize the type of telephone. The prime DN, or extension number, of the telephone also appears at the top of the page.

The Troubleshoot Problems link provides access to the troubleshooting page. See page A-15 for more information.

You have up to four Telephone pages, accessed by links below the small telephone graphic. The capabilities provided by these web pages depends on your telephone type.

Telephone—General page

The General Page provides general information about the telephone. The following information appears on the General page:

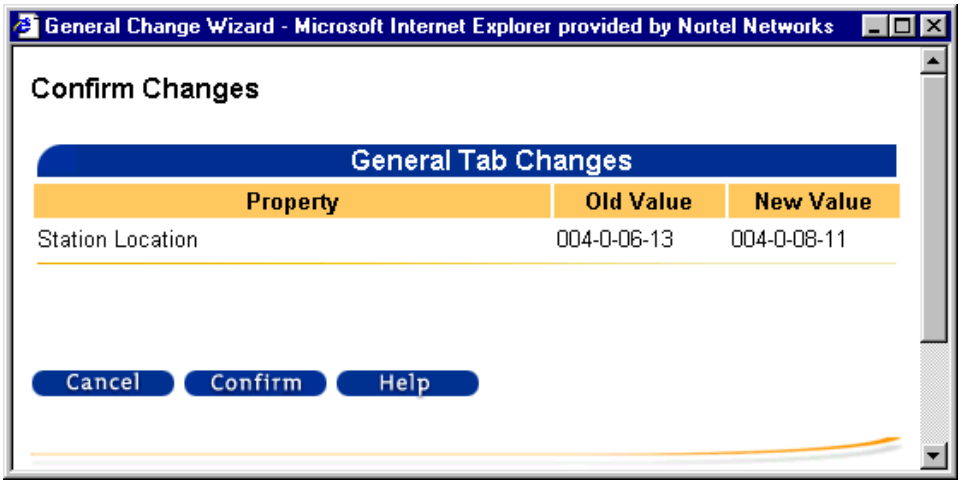
- **Station Location**: A text field similar in purpose to the System field. You may want to use this to provide more user-friendly names.
- **System**: Identifies the site, system, and customer number, if applicable, where the phone is connected. This information is retrieved from OTM common services and displayed in the format “Site - System - Customer x.”
- **Phone type** (M2616, M3904, and so on)
- **Terminal Number** (TN): Address of the telephone
- **Key Based Modules** (for applicable telephone types)
- **Designation**: A unique 1–8 character telephone identifier. This data is stored in station data and the overlays. This field is often used to identify the location of the phone within the building (for example, cable pair), and is the response to the prompt DES in LD 10 and LD 11.

If allowed by the network administrator, you may change the following fields:

- Station Location
- Key Based Modules
- Designation

If you change one or more of these fields and click Submit, the Confirm Changes dialog box opens (Figure A-4).

Figure A-4 Confirm changes to General Tab



Verify the information and click Confirm. If there are no errors, a change confirmation page opens. See "Change confirmation pages" on page A-38 for more information.

The Troubleshoot Problems link provides access to the troubleshooting page. See page A-15 for more information.

Current configuration/Pending changes

When the information for your telephone has been changed, but the changes have not been synchronized with the Meridian 1 or Succession CSE 1000 system, a Show Current configuration/Pending changes drop-down box allows you to select which configuration is shown.

When there are pending changes, and you have been assigned the "Allow M1 Synchronization" option in your access profile, the drop-down box is presented along with Schedule and Restore buttons. If your access profile allows you to make changes to the General, Keys, or Features pages, the Validate button is also presented (Figure A-5).

Figure A-5 Configuration indication with synchronization allowed

Validate button

The Validate button is not available when you are viewing the current configuration of your telephone. When your telephone has been marked for deletion in the OTM database, the Telephone pages show the deleted configuration. The Validate button is not available when you are viewing the deleted configuration. Click Validate to validate the changes that have been made to the configuration. The validation process determines whether there are any errors that can cause problems during synchronization with the Meridian 1 or Succession CSE 1000 system. When you click Validate, if there are no errors, the page shown in Figure A-6 opens. If there are errors, the Station Validation Results indicate the errors that are present in your telephone configuration (Figure A-7).

Figure A-6 Station Validation Results with no errors

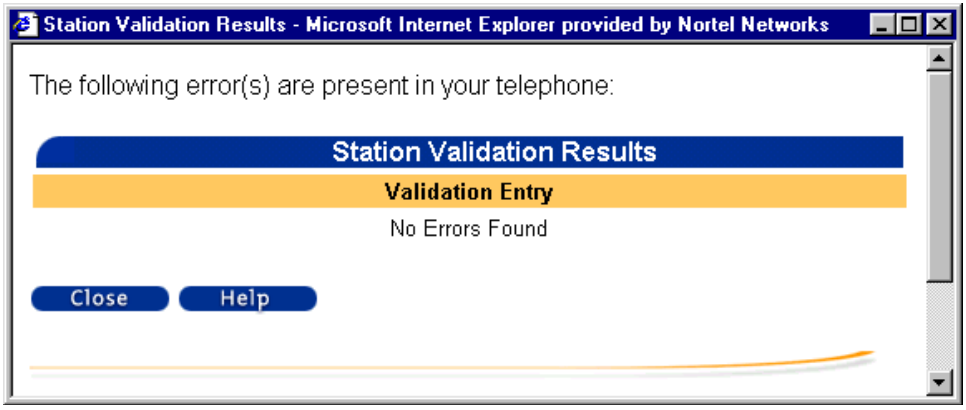
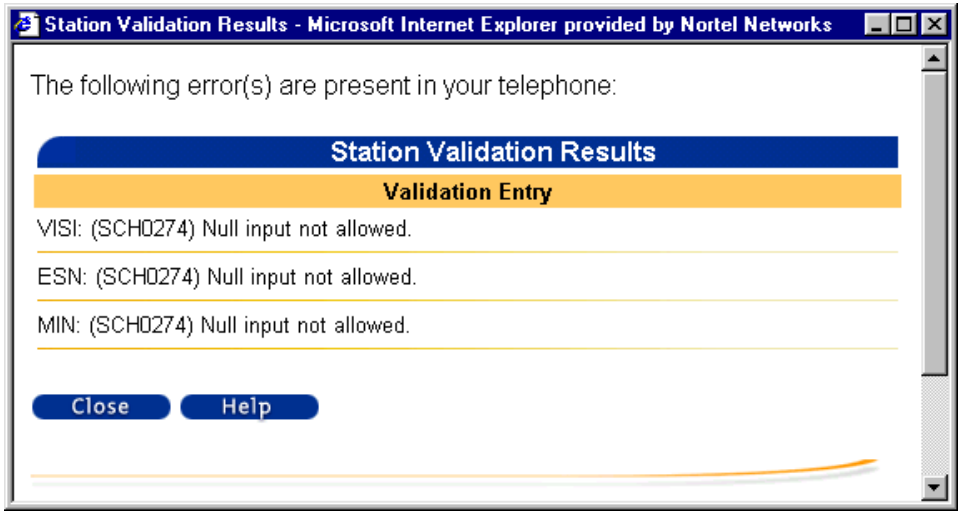


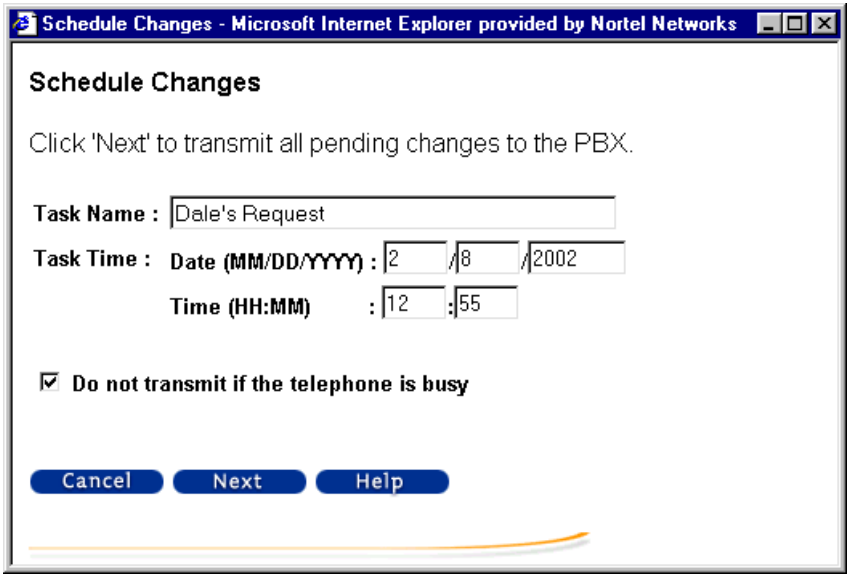
Figure A-7 Station Validation Results with errors



Schedule button

You click Schedule to schedule synchronization with the Meridian 1 or Succession CSE 1000 system. When you click Schedule, the Schedule Changes dialog box opens (Figure A-8).

Figure A-8 Schedule Changes dialog box



To schedule a sync task:

1 Enter a Task Name in the Task Name text box.

There is no limit on the number of characters in the name.

2 Use the Task Time text boxes to set the start time for the task.

Note: The boxes are pre-filled with a time value that is 2 minutes ahead of the current time.

Note: If the Task Time passes before you click Next, the task is accepted and run immediately after you click Next.

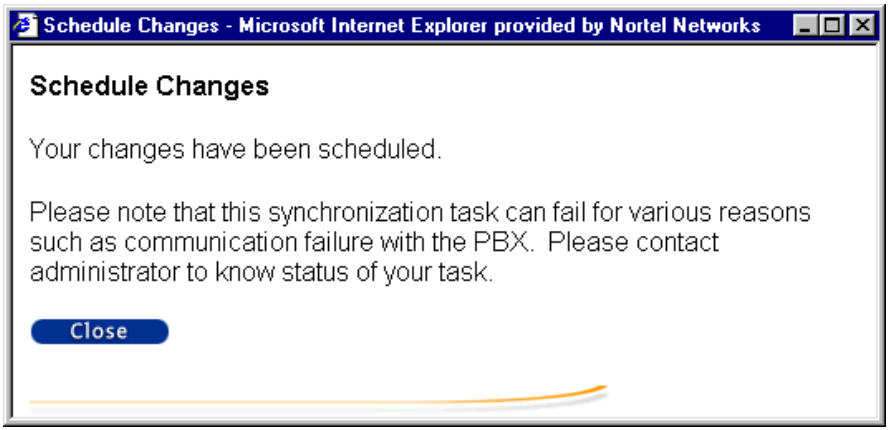
3 Click the "Do not transmit if the telephone is busy" check box to have the sync task check the status of the telephone before making changes to the telephone configuration.

Note: If the telephone is busy, the changes are not made and the event is logged in the appropriate transmit log. The transmit is not automatically rescheduled. It is up to you to reschedule the transmit.

4 Click Next.

The Schedule Changes confirmation dialog box opens (Figure A-9).

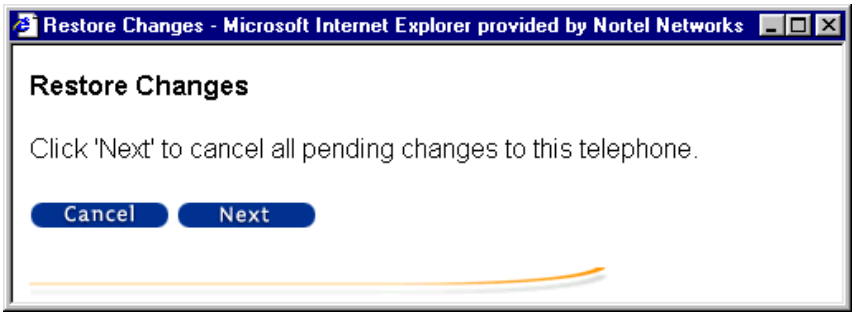
Figure A-9 Schedule Changes confirmation



Restore button

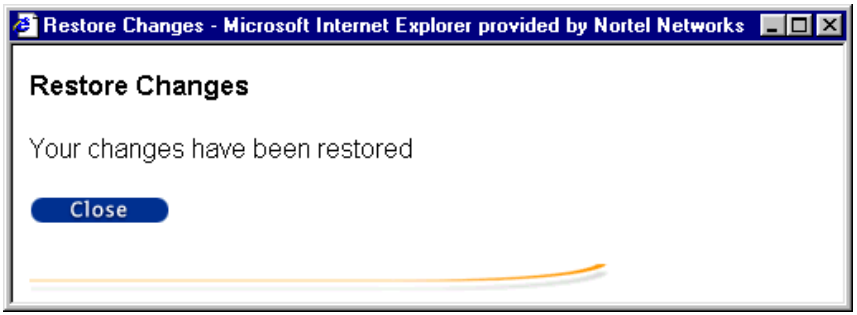
When you click Restore, the Restore Changes dialog box opens (Figure A-10).

Figure A-10 Restore Changes dialog box



If you click Cancel, the dialog box closes. If you click Next, the Restore Changes confirmation dialog box opens (Figure A-11).

Figure A-11 Restore Changes confirmation



When there are pending changes, and you do not have the “Allow M1 Synchronization” option, the drop-down box along with the Validate and Restore buttons appear (Figure A-12). You are not allowed to schedule synchronization. Your network administrator reviews your changes and schedules synchronization for you.

Figure A-12 Configuration indication with M1 synchronization not allowed

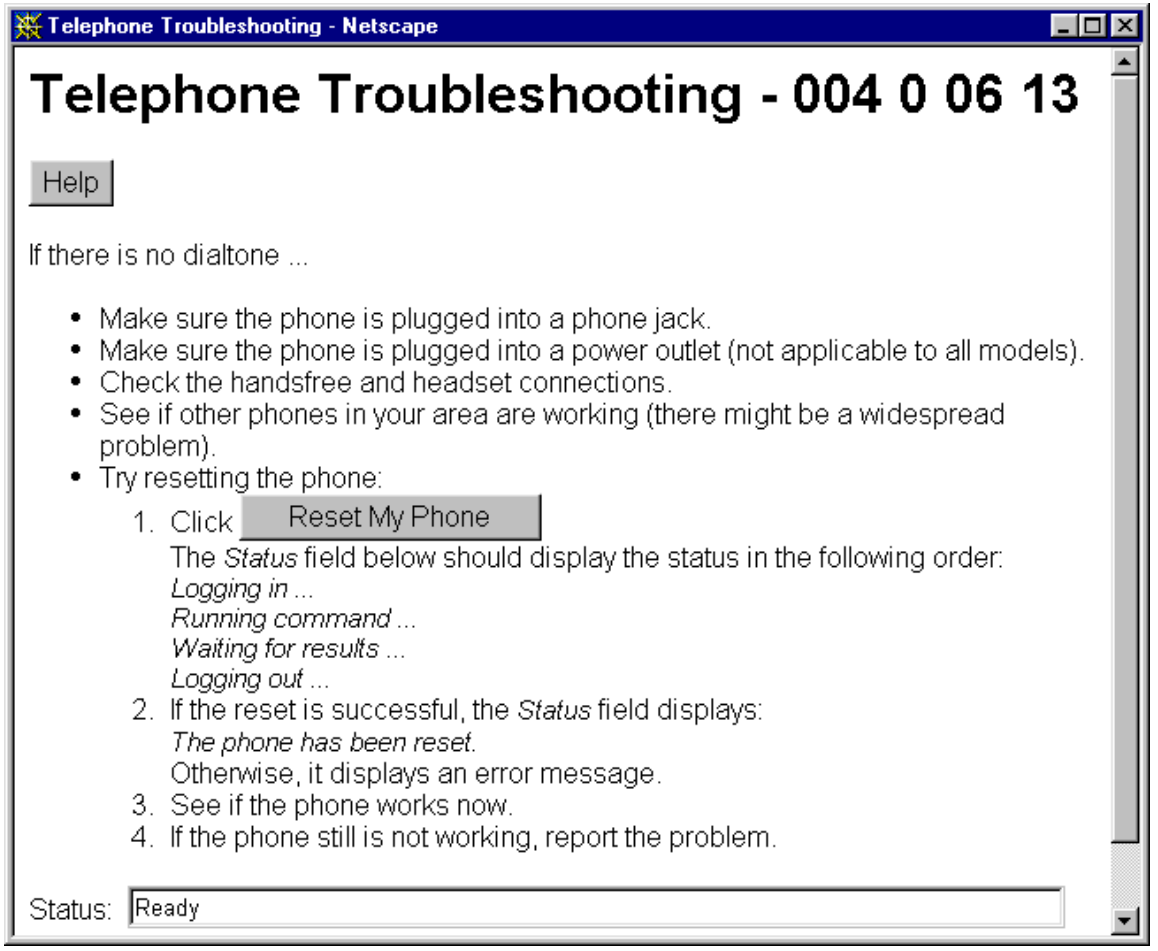
When the telephone and the Meridian 1 or Succession CSE 1000 system are synchronized, “Current Configuration” appears at the top of the page, and the drop-down box no longer appears (Figure A-13).

Figure A-13 Configuration indication when there are no pending changes

Telephone Troubleshooting page

You can access the Telephone Troubleshooting page from the Telephone pages via a link. The Telephone Troubleshooting page is shown in Figure A-14. The Reset My Phone button performs an enable and status command on this telephone via a Maintenance Windows API.

Figure A-14 Telephone Troubleshooting page



Telephone—Keys page

The Telephone Keys page displays a graphical layout of the function keys assigned to the telephone. The layout varies for different telephone types.

All current feature key assignments are always visible. The key labels on the graphic match the labels in Station Administration. For M3900 series telephones these labels match the soft labels on the set, and the text is shortened to seven characters. When the page first appears, key 0 is selected. You can select other keys by clicking on a key. Figure A-15 shows an example of the Telephone Keys page for an M3904 telephone.

M3903 and M3904 telephones have two layers of feature keys. Use the Shift key on the telephone graphic to toggle between the first and second layer. If you have either a key-based expansion module or a display-based expansion module installed on your telephone, the keys for the expansion module can be accessed by clicking the Next link, located below the graphic representing the second layer of feature keys.

You may have up to two key-based expansion modules. Use the Next link below the graphic representing the first expansion module to access the keys for the second module.

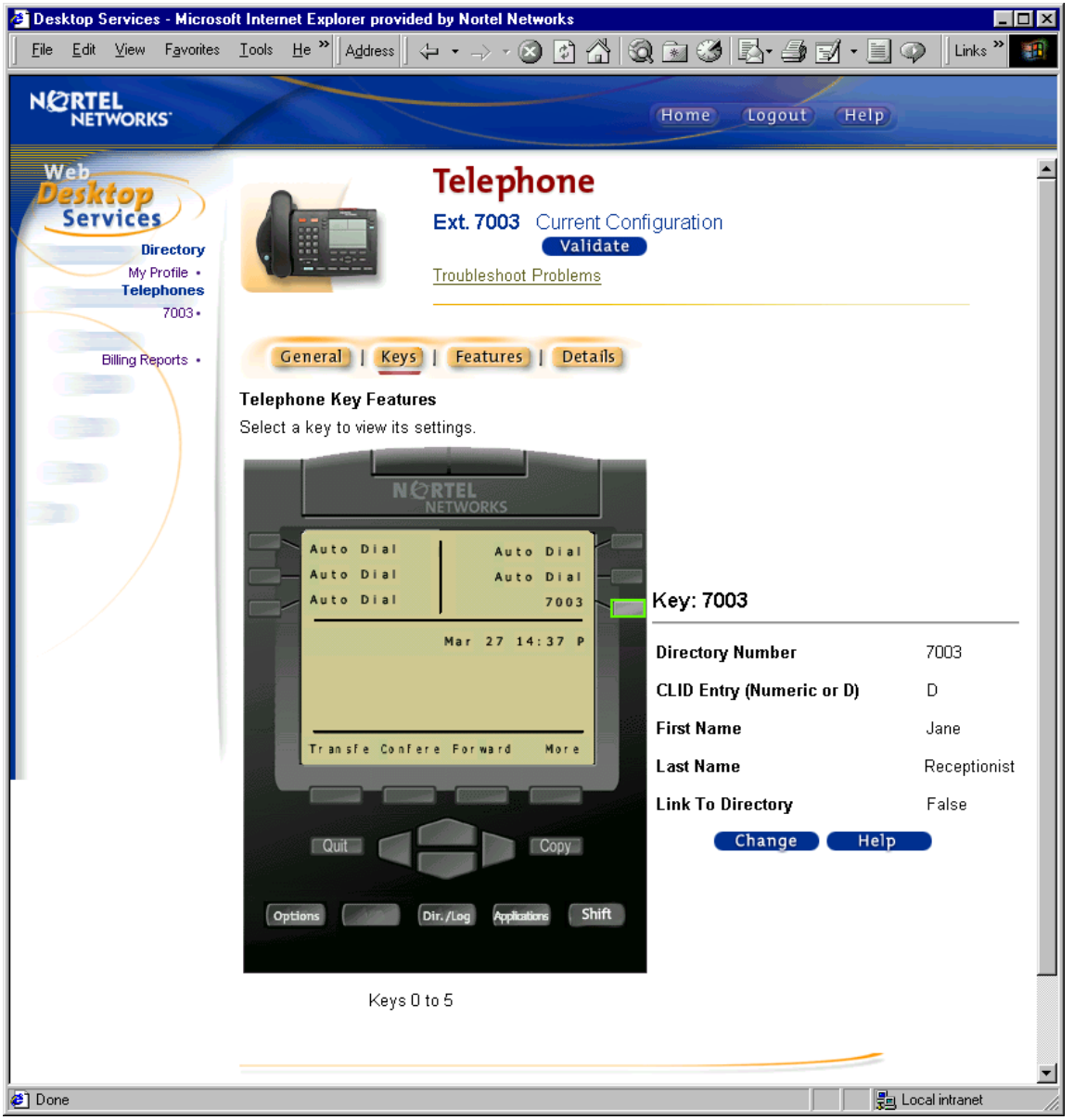
The display-based expansion module has three layers of eight keys that are accessed by pressing the page key on the module. In OTM, the three layers of keys are represented by three separate pages. Use the Next and Previous links below the graphic representing the expansion module (Figure A-17 on page A-19) to move between the layers.

When a key is selected, the following occurs:

- The key is highlighted. The method used to highlight depends on the phone type.
- The name of the key and its configurable parameters, if any, appear beside the telephone graphic.

A Help button takes you to Help on how to use the selected key.

Figure A-15 Telephone Keys page—first layer



If the telephone has one or two key-based modules, or a display-based module, a graphic indicates which set of keys appears. Next and Previous links allow you to "scroll" the graphic from one set of keys to another.

Figure A-16 shows the user interface for the keys on an M3904 telephone equipped with a display-based expansion module. Click the Next link to view the features assigned to the first layer of keys on the module (Figure A-17 on page A-19).

Figure A-16 Telephone Keys page—second layer with an expansion module link

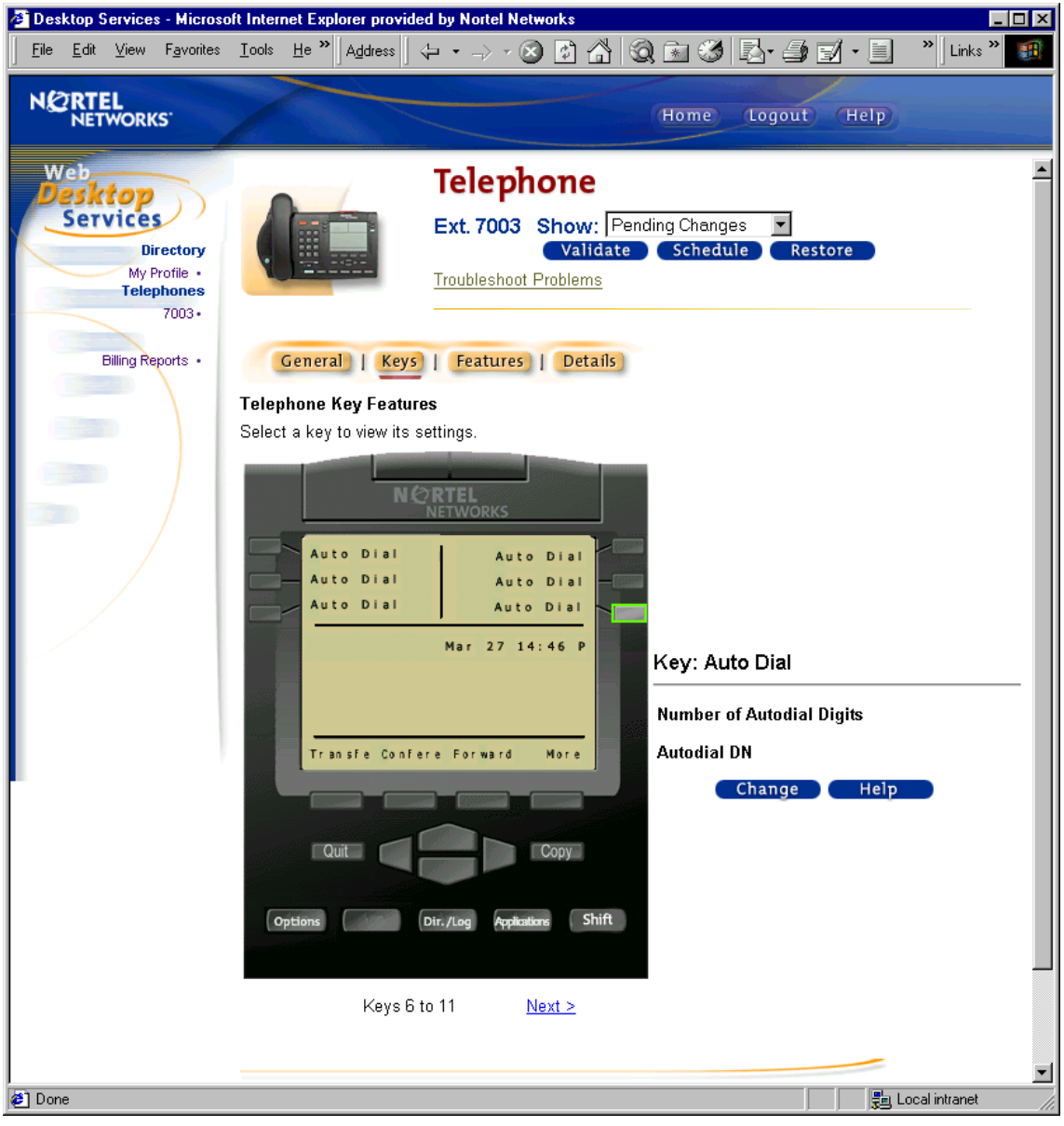
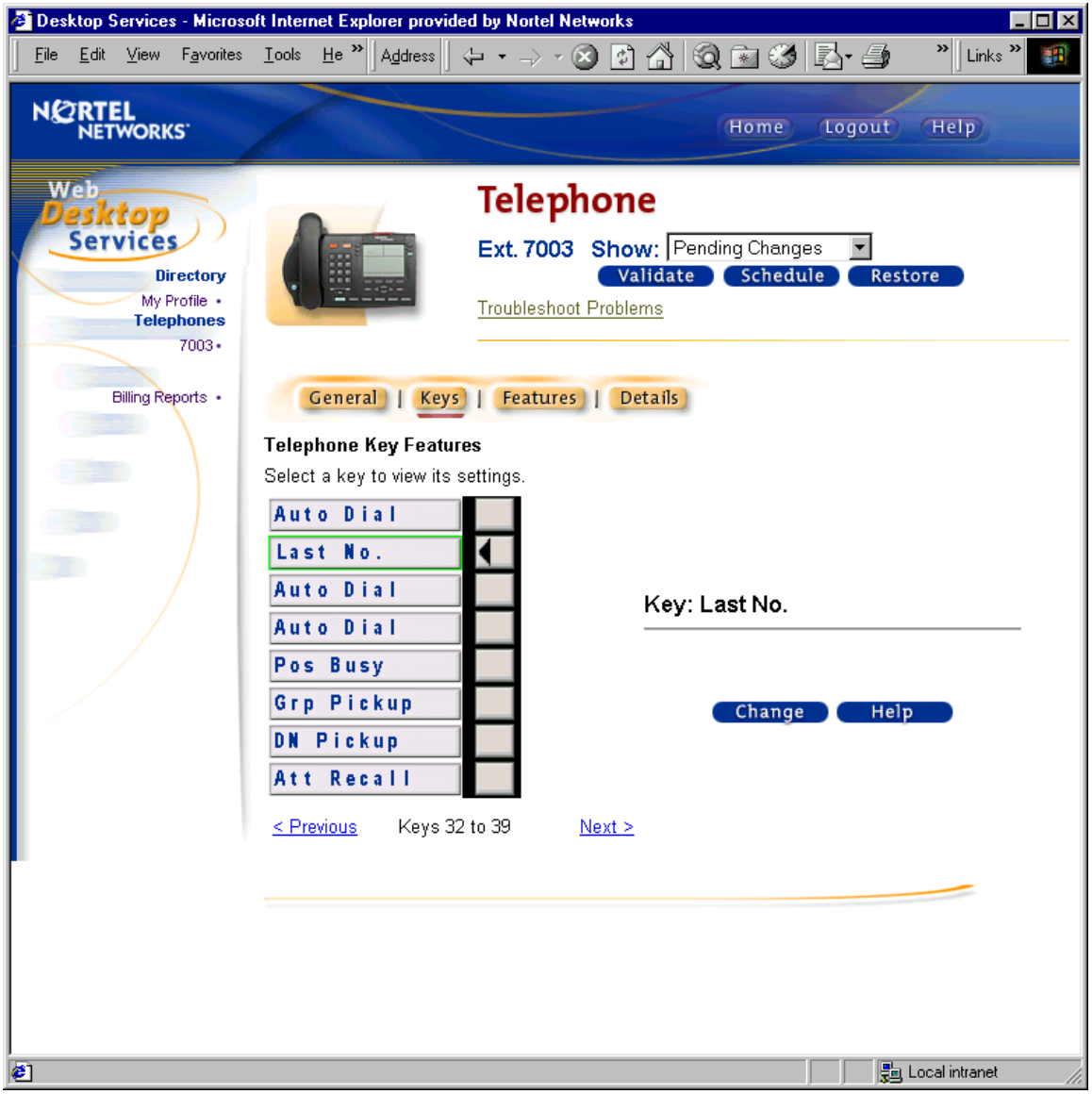


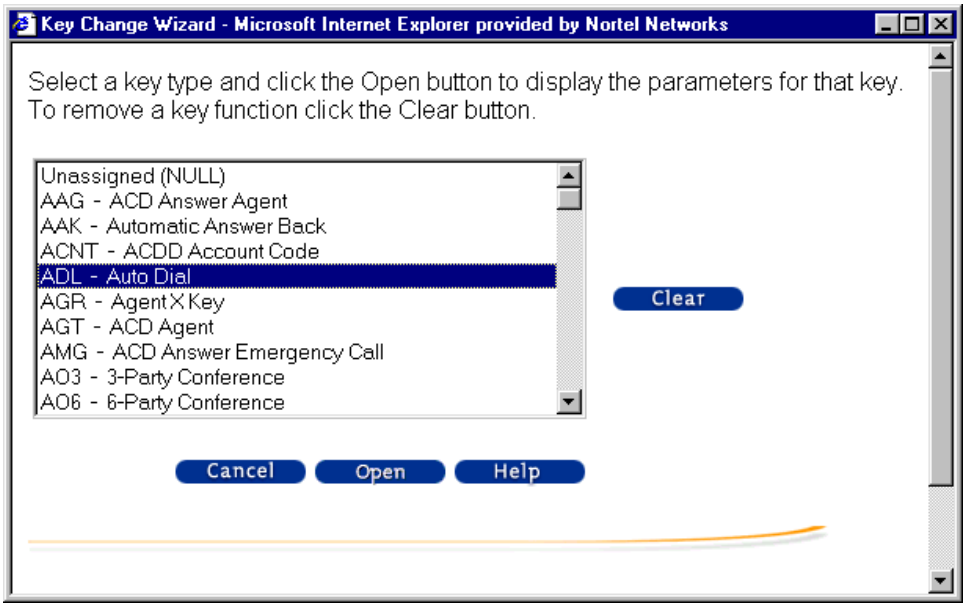
Figure A-17 Display-based expansion module keys—first layer



Changing a key

If permitted by your access profile, when you click Change after selecting a key, a new browser window opens with the appropriate controls for changing the key you selected. In this browser window, a list of the possible key choices appears (Figure A-18). This list is dynamic and is based on both the telephone type and the key selected. For example, key 17 on an M2317 telephone must be a transfer key.

Figure A-18 Select Auto Dial key type



The Help button is context sensitive and accesses the information in the Input/Output guide on configuring a key for the selected feature or service.

The key's parameters, if any, appear on subsequent pages of the wizard.

Note: The Clear button removes the key function and takes you to the next page in the key change wizard. As shown in Figure A-18, if the telephone key that you have selected is currently unassigned (null), the Clear button does not appear.

Changing the parameters of an Auto Dial key

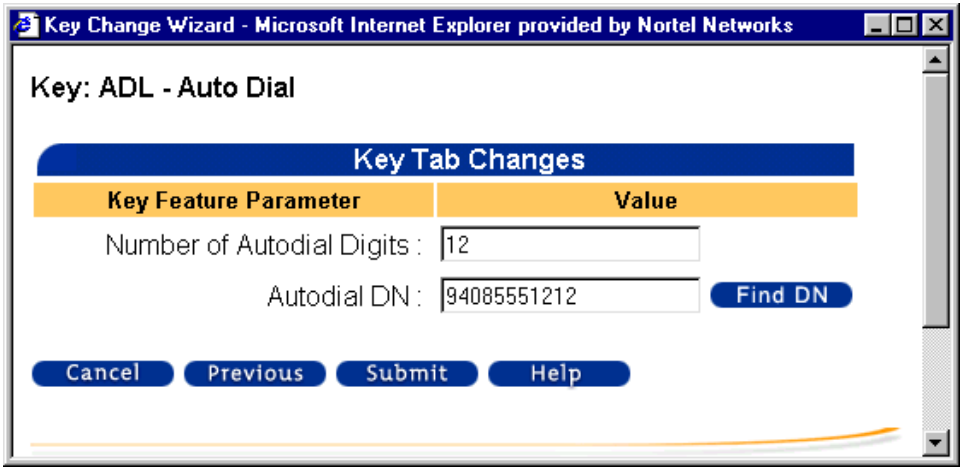
Use the following procedure to change the telephone number assigned to an Auto Dial key:

1. Click a key in the graphic on the Telephone Keys page.
2. Click Change. The Key Change Wizard launches.
3. Click "ADL — Auto Dial" in the list of key types (Figure A-18).
4. Click Open.
5. Type the new maximum number of digits and the new Autodial DN in the edit boxes (Figure A-19).

Note: If you change the Number of Auto Dial digits to a value that is greater than the default number in the Meridian 1 or Succession CSE 1000 system, or if you enter an Auto Dial Number that has more digits than the default value, you receive a validation error.

Note: You use the Find DN button to look up Directory Numbers. It appears whenever there is a DN edit box. For information on using the Find DN button, see "Finding Directory Numbers" on page A-30.

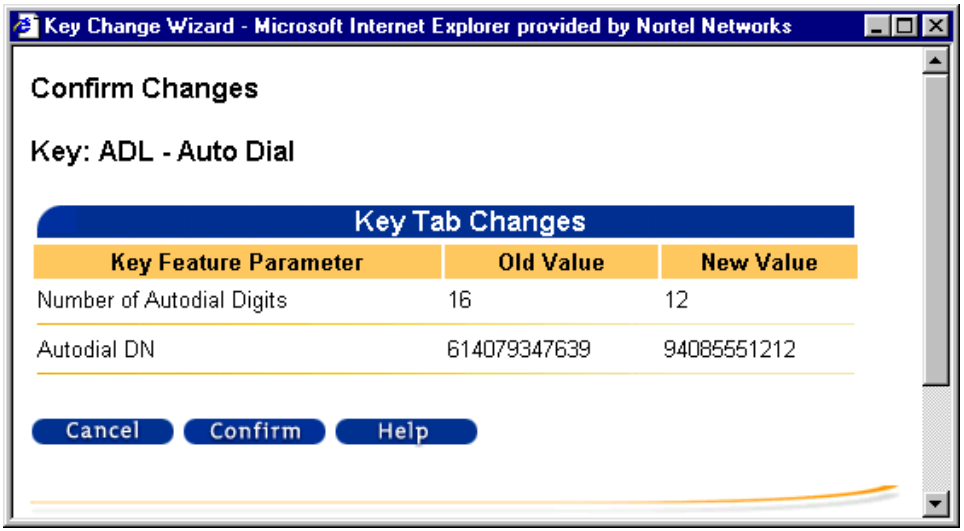
Figure A-19 Autodial key change wizard



6 Click Submit.

The key change summary page opens (Figure A-20).

Figure A-20 ADL key change summary



7 Click Confirm.

A confirmation page appears. See “Change confirmation pages” on page A-38.

Changing the parameters of an MCR DN key

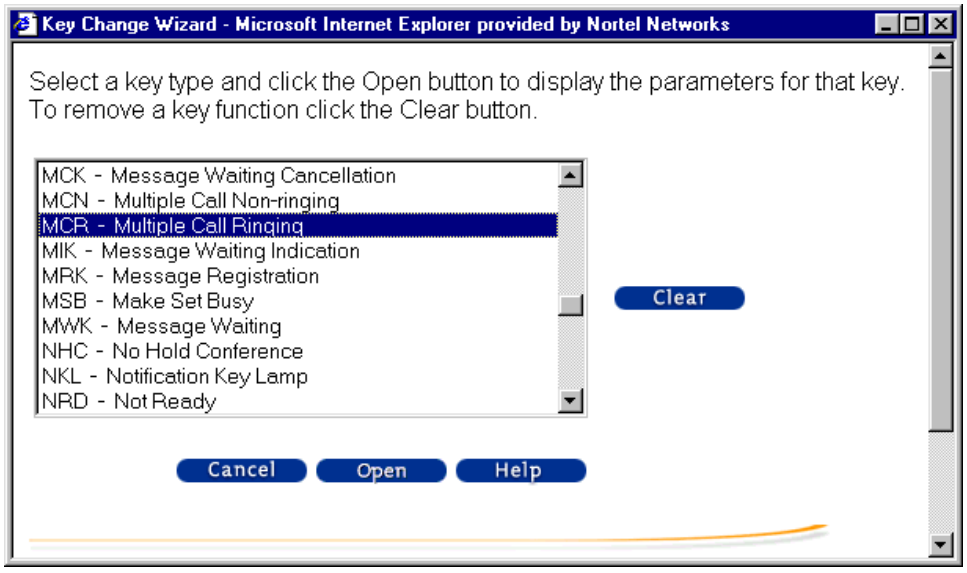
Use the following procedure to change the first name and last name parameters associated with an MCR DN key:

1 Click an MCR DN key in the graphic on the Telephone Keys page (Figure A-15).

2 Click Change.

The Key Change Wizard launches. The current key type, MCR - Multiple Call Ringing, is highlighted (Figure A-21).

Figure A-21 Select Multiple Call Ringing key type



3 Since you are not changing the key type, simply click Open.

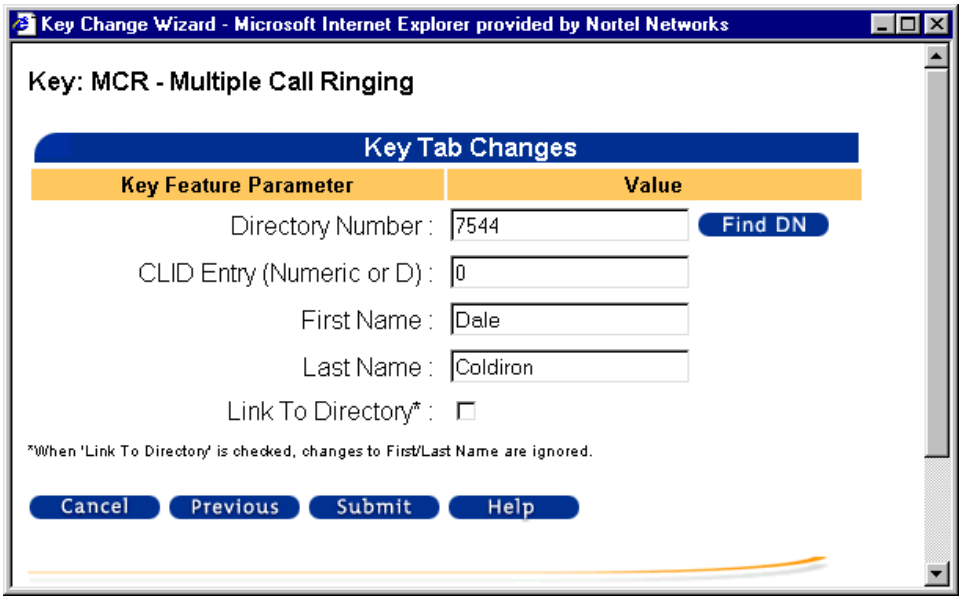
The key change wizard displays the current parameters for the selected key (Figure A-22).

Note: You can only modify the DN, CPND, and CLID. You may not view or change the DN's Voice Mailbox, ANI, or MARP.

Note: When the Name Display Link to Directory check box is checked in Station Administration, the values for the First Name and Last Name fields are obtained from the directory and are not editable.

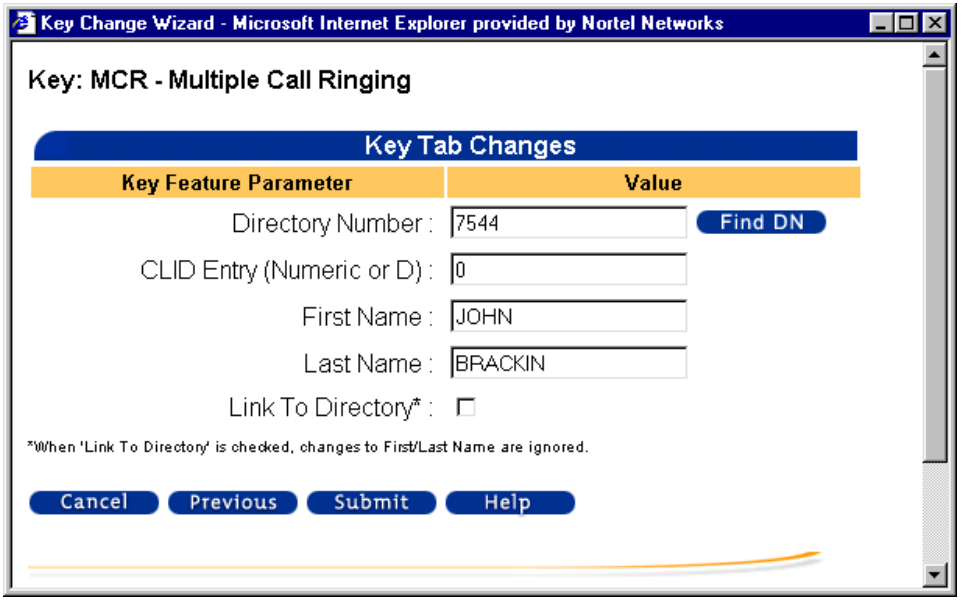
Note: If the key change wizard does not display a Directory Number, or if you want to change the Directory Number, see "Finding Directory Numbers" on page A-30.

Figure A-22 Current parameters for Multiple Call Ringing DN key



4 Change the First Name and Last Name (Figure A-23).

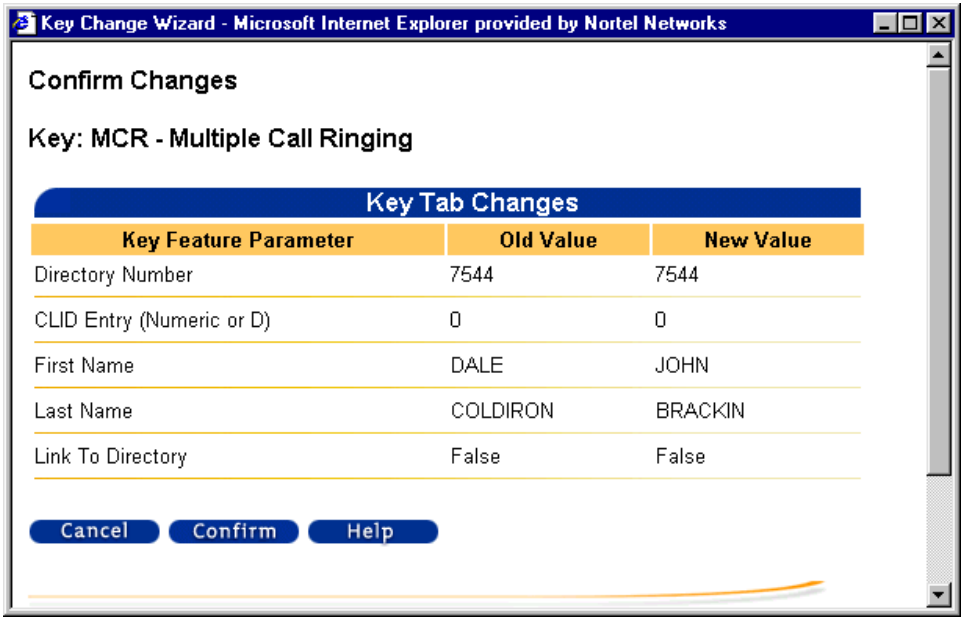
Figure A-23 Changed parameters for Multiple Call Ringing DN key



5 Click Submit.

A summary page opens that displays your changes (Figure A-24).

Figure A-24 MCR key change summary page



6 Click Confirm. A confirmation page appears. See "Change confirmation pages" on page A-38.

Changing a key type

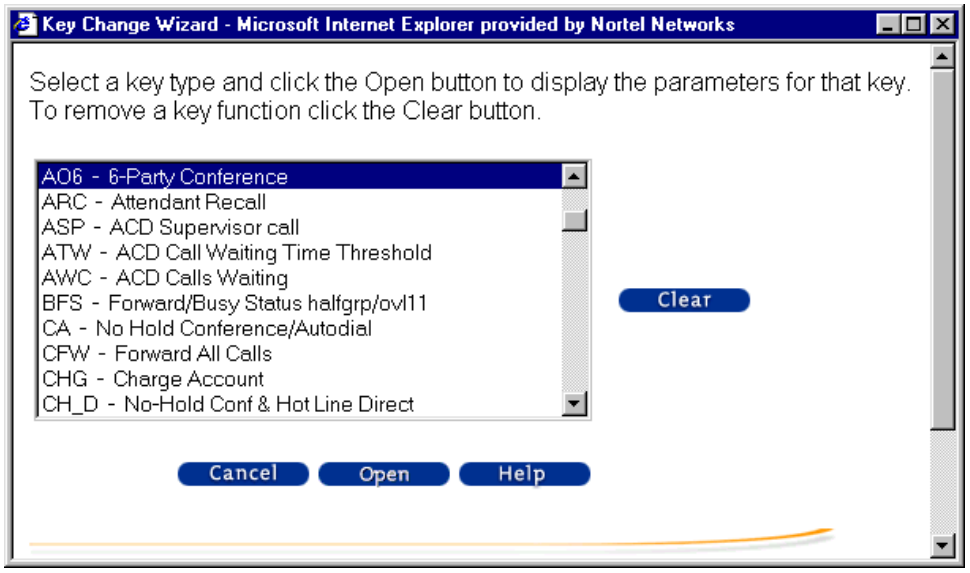
In the following procedure, you change a Conference key to a Call Forward key:

1 Click the Conference key in the graphic on the Telephone Keys page (Figure A-16 on page A-18).

2 Click Change.

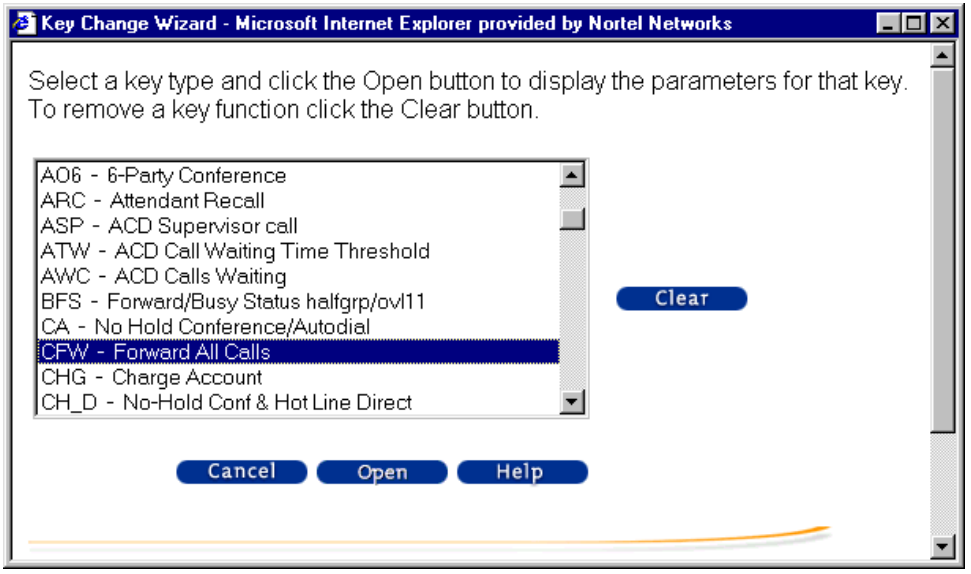
The Key Change Wizard launches. The current key type is highlighted. (Figure A-25).

Figure A-25 Key Change Wizard displaying the current key type



3 Click CFW - Forward All Calls in the list of key types (Figure A-26).

Figure A-26 Select the Forward All Calls key type

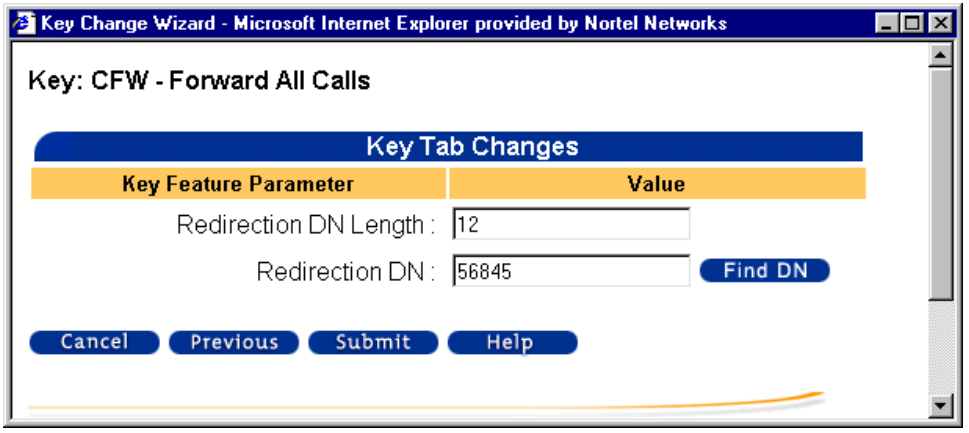


4 Click Open.

5 Enter the Redirection DN Length and Redirection DN in the edit boxes (Figure A-27).

Note: When changing a key type, the default values do not appear. If you enter a Redirection DN length that is greater than the default value in the Meridian 1 or Succession CSE 1000 system, or if you enter a Redirection DN that has more digits than the default value, you receive a validation error.

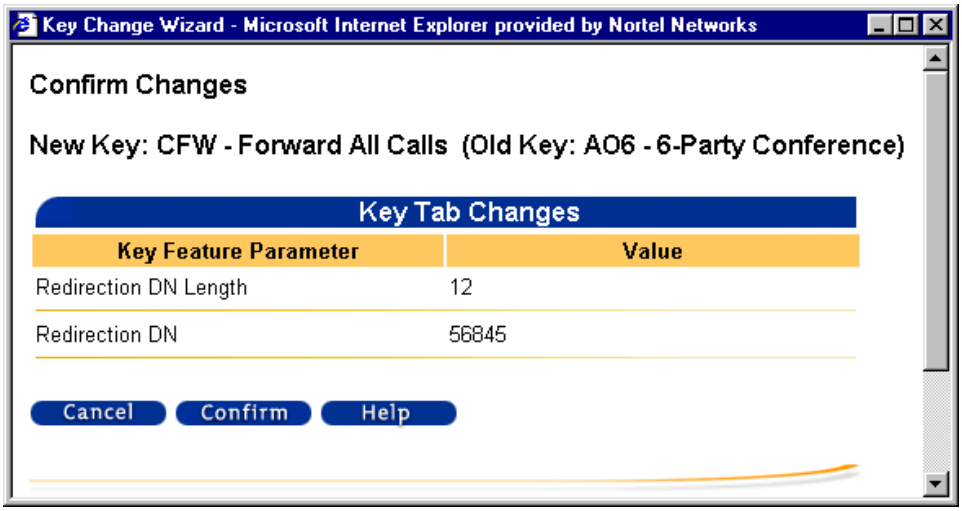
Figure A-27 Forward All Calls Key Change Wizard



6 Click Submit.

The key change summary page opens (Figure A-28).

Figure A-28 CFW Key Change summary page



7 Click Confirm.

A confirmation page appears. See "Change confirmation pages" on page A-38.

Removing a key

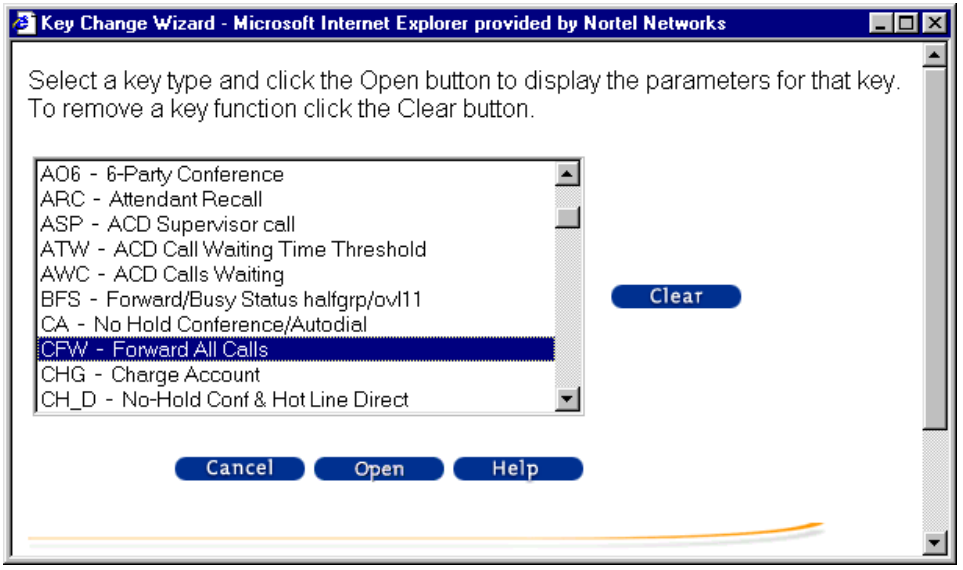
Use the following procedure to remove the function associated with a key, creating a blank, or unassigned, key:

1 Click a key in the graphic on the Telephone Keys page (Figure A-15 on page A-17).

2 Click Change.

The Key Change Wizard launches. The function associated with the selected key is highlighted in the list (Forward All Calls in this example) (Figure A-29).

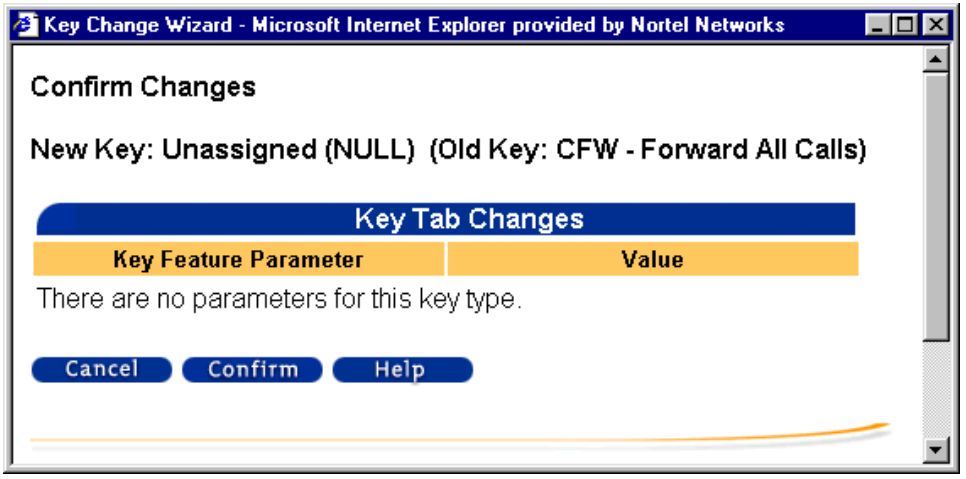
Figure A-29 Current key function displayed in the Key Change Wizard



3 Click Clear.

The key change summary page opens a (Figure A-30).

Figure A-30 Unassigned Key Change summary page



4 Click Confirm.

A confirmation page appears. See “Change confirmation pages” on page A-38.

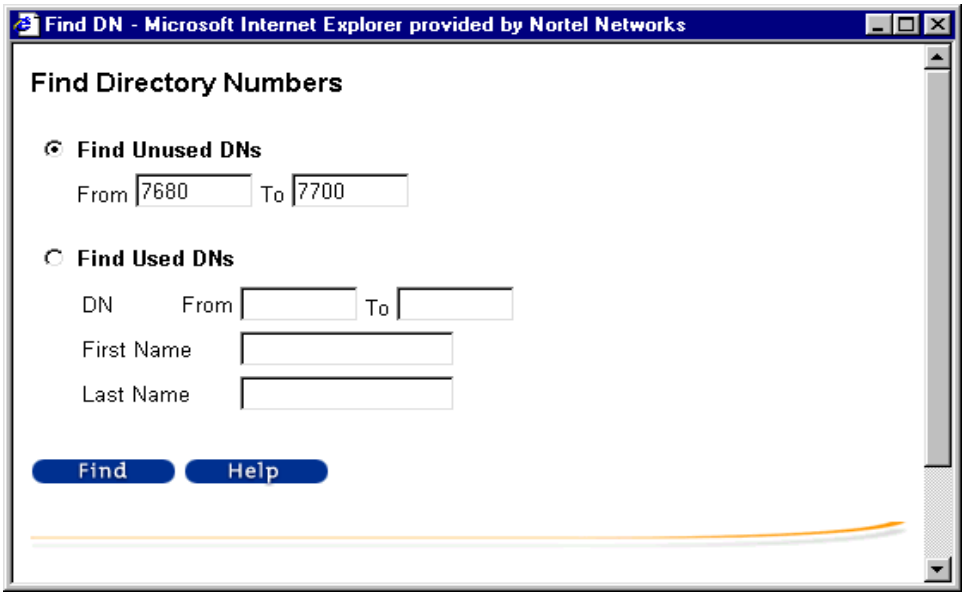
Finding Directory Numbers

You use the Find DN button to look up used or unused Directory Numbers. It appears next to the edit box for any DN key.

Find Unused Directory Numbers

1 Click Find DN (Figure A-22 on page A-24). The Find Directory Numbers page opens (Figure A-31).

Figure A-31 Find Directory Numbers page



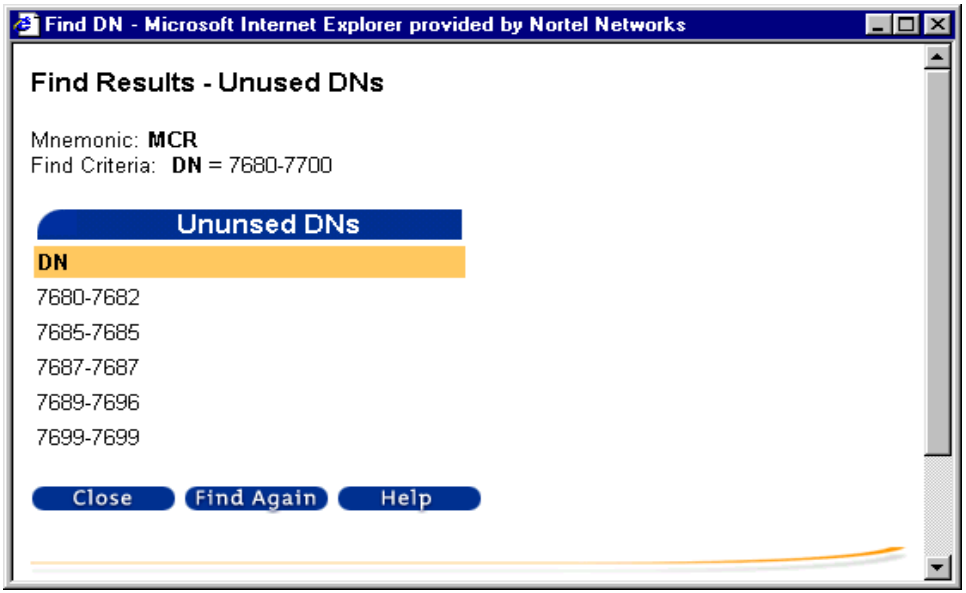
2 Click the Find Unused DNs radio button.

3 Enter a range of DNs on which to search.

Note: You must have a Numbering Plan defined in the System Properties in OTM Windows Navigator to use the Find Unused DNs feature. If the Numbering Plan is not defined, or if there are no unused DNs, an error message appears (Figure A-33).

4 Click Find. If unused DNs are found, a page similar to the example shown in Figure A-32 appears. If there are no unused DNs found, the message shown in Figure A-33 appears.

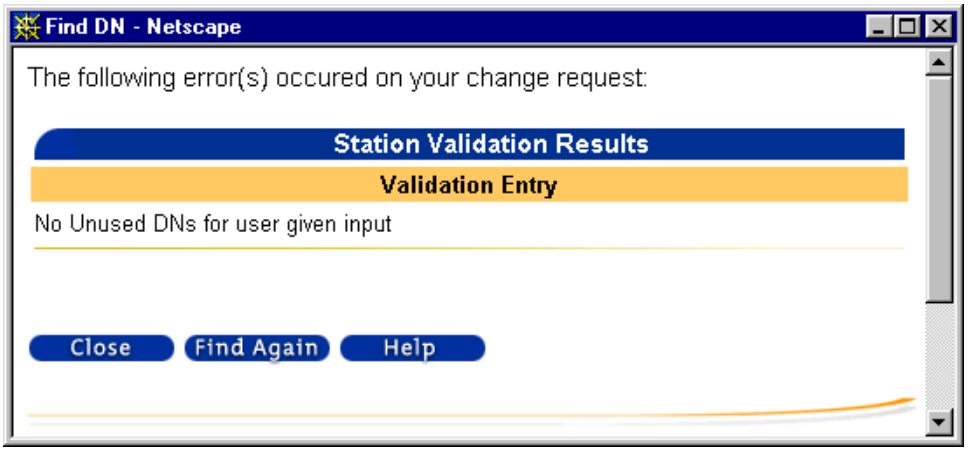
Figure A-32 Find results when Unused DNs exist



Note: Only the unused DNs belonging to the same site, system, and customer as your telephone are shown.

Note: If you click Find Again, you return to the previous page, and you can enter a different range of DNs.

Figure A-33 Find results when no Unused DNs exist



Find Used Directory Numbers

1. Click Find DN (Figure A-22 on page A-24). The Find Directory Numbers page opens (Figure A-31).
2. Click the Find Used DNs radio button.
3. Click the radio button that corresponds to your search criteria:
   - To search by DN, enter a range of DNs on which to search.
   - To search by last name, enter the last name of the person whose name is assigned to the DN you are seeking.
   - To search by first name, enter the first name of the person whose name is assigned to the DN you are seeking.
4. Click Find. If DNs that match your search criteria are found, a page similar to the example shown in Figure A-34 opens. If there are no DNs that match your search criteria, a message similar to the one shown in Figure A-35 opens.

Figure A-34 Find results when there are matching used DNs

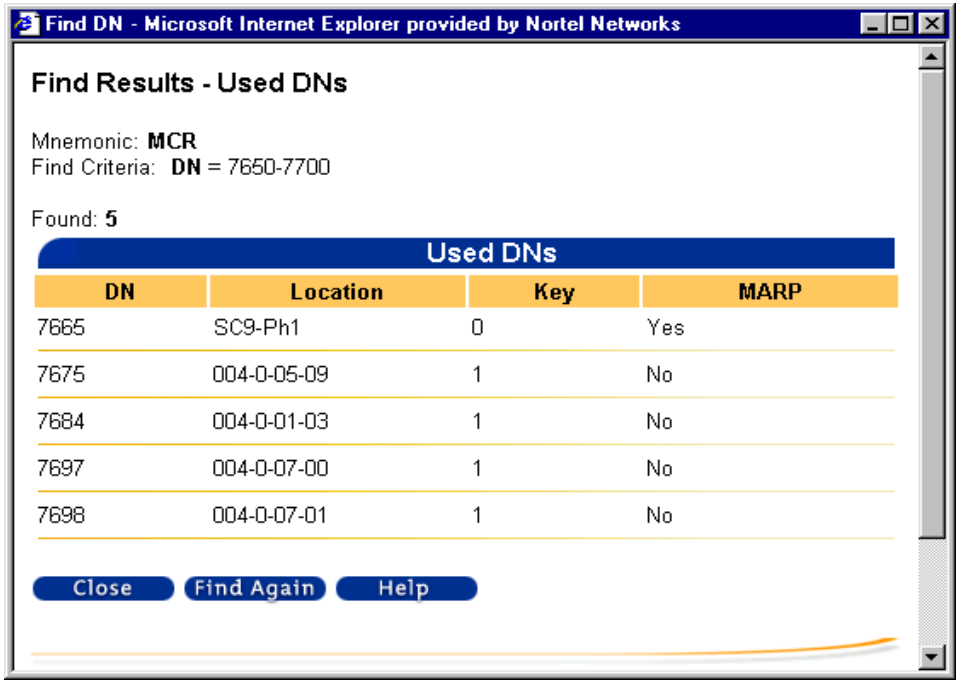
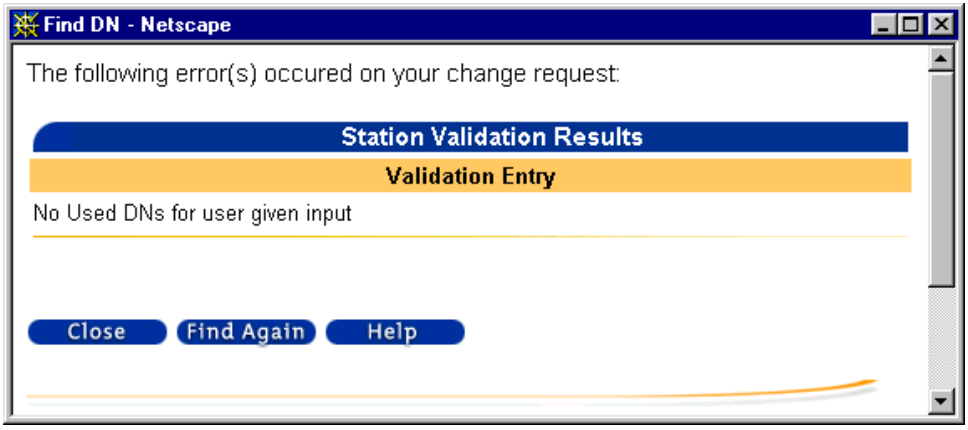


Figure A-35 Find results when there are no matching used DNs



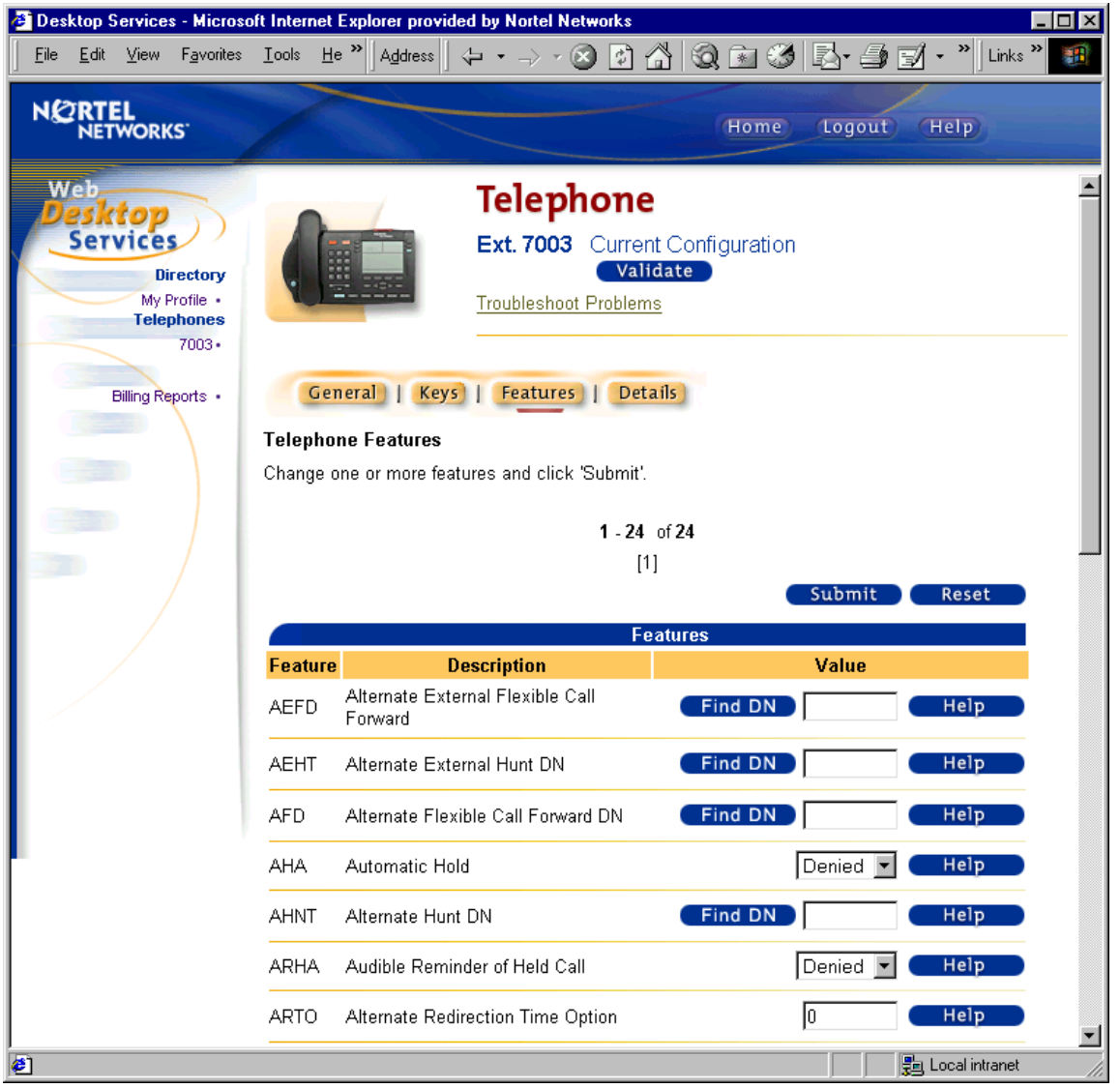
Telephone—Features page

The Telephone Features page allows you to view and change features that are not assigned to keys. Features are related to individual prompts in LD 10 or 11, with one or more configurable parameters.

Your network administrator determines which features you can see in the list. If your access profile allows changes, the Submit and Reset buttons appear (Figure A-36).

Whenever possible, a drop-down list box containing all possible values for the feature is provided. In cases where this is not possible (for example, when entering a call forward DN), an edit box is provided.

Figure A-36 Telephone Features page



Telephone—Details page

The Telephone Details page provides a summary of the complete telephone configuration. It consists of two sections, one for the keys (Figure A-37), and one for the features (Figure A-38).

Figure A-37 Telephone Details layout (keys)

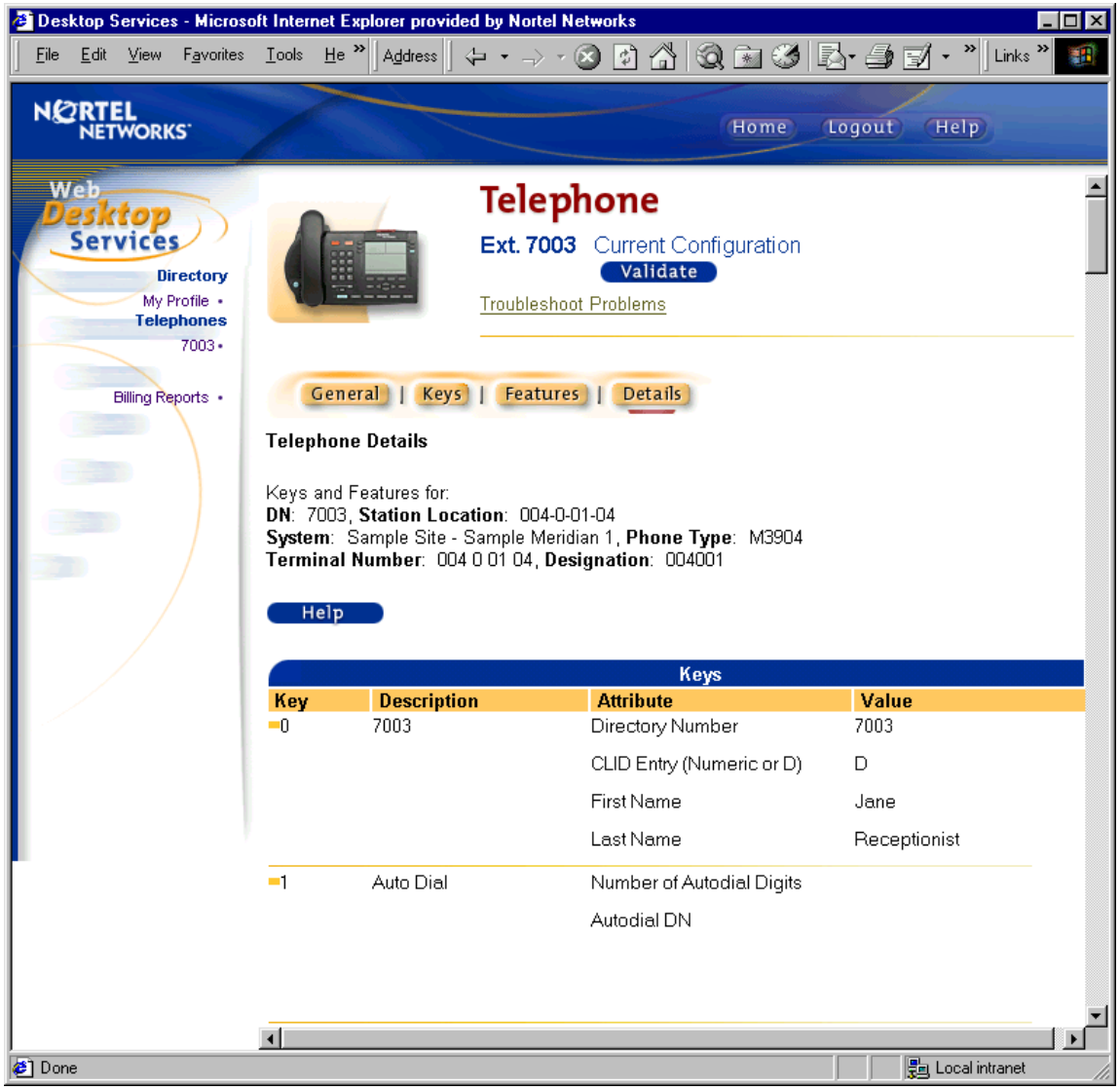
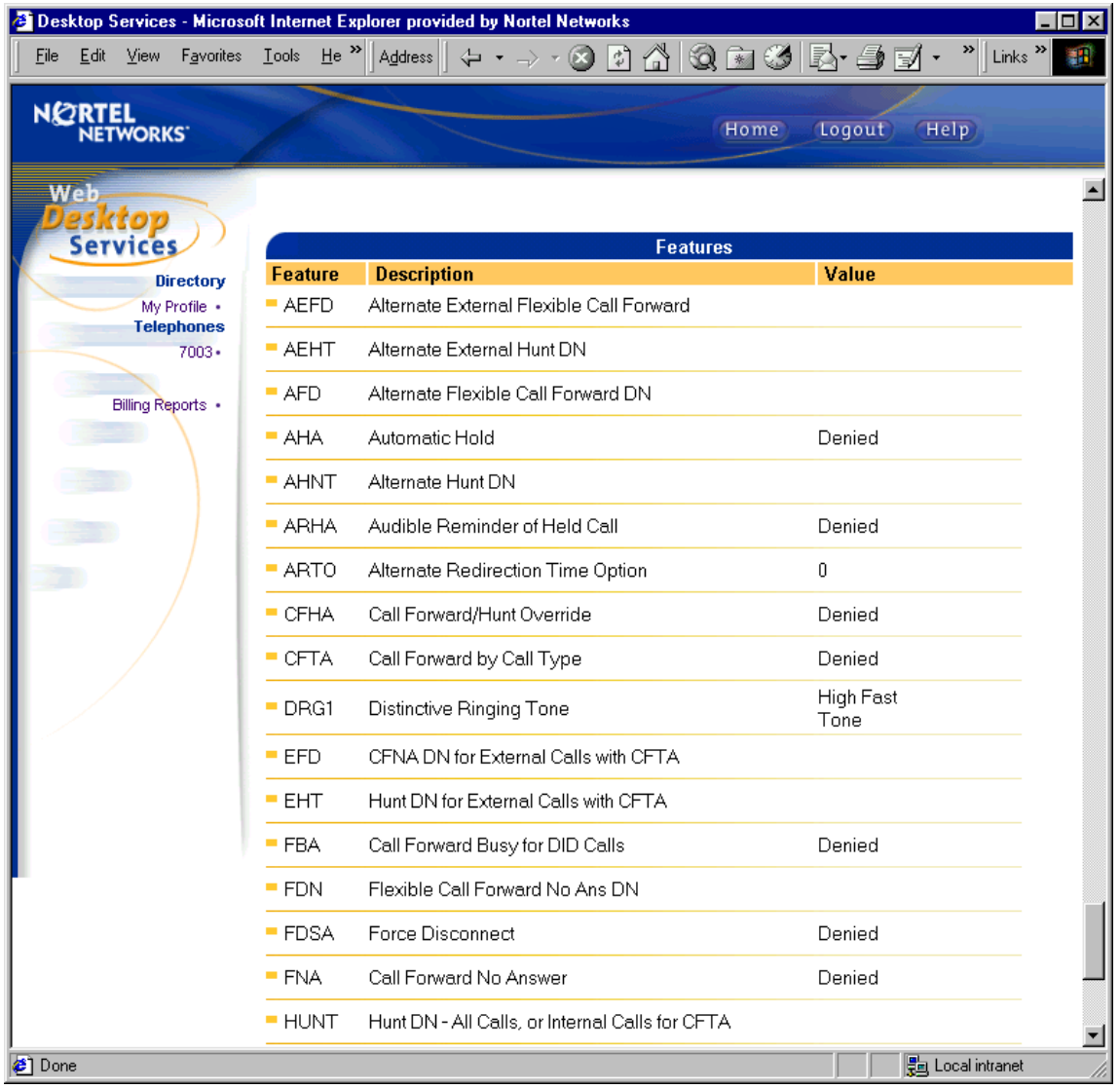


Figure A-38 Telephone Details layout (features)

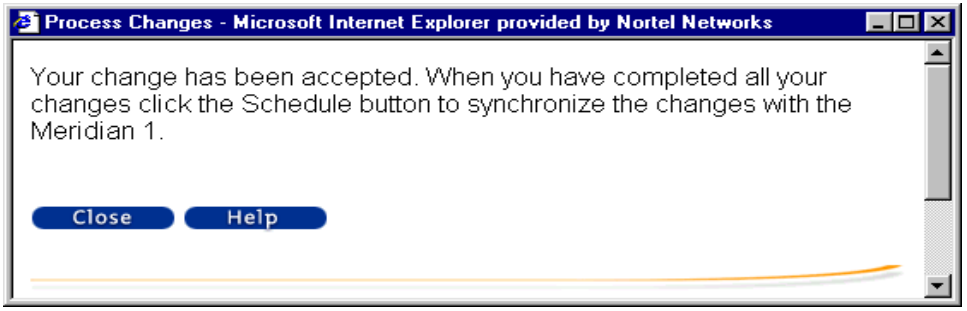


Change confirmation pages

A confirmation page appears when you click the Confirm button in the change summary page for the General, Keys, or Features tab. The confirmation page varies based on your access profile.

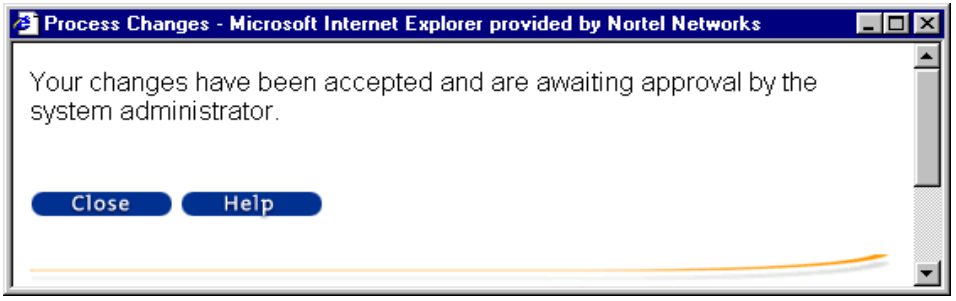
When your access profile allows the Meridian 1 or Succession CSE 1000 synchronization option, the page shown in Figure A-39 appears.

Figure A-39 User confirmation with automatic synchronization



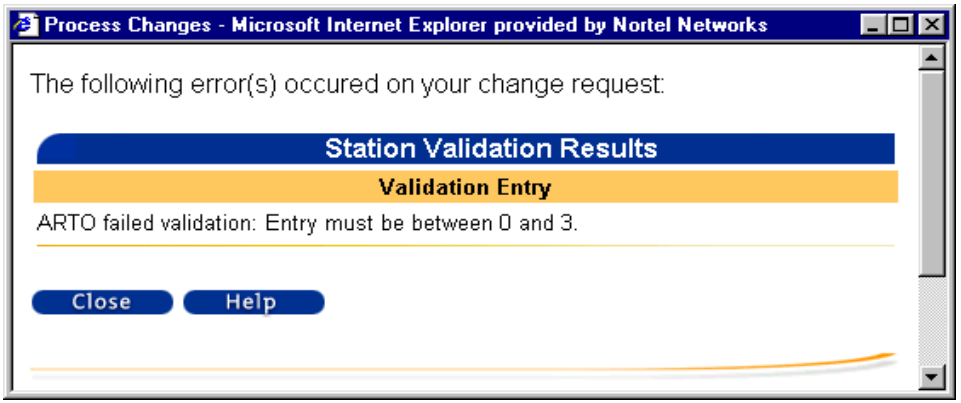
If your access profile does not permit automatic synchronization, the changes must be approved by the network administrator, and the page shown in Figure A-40 appears.

Figure A-40 User confirmation when network administrator approval is required



If there is a validation error, you are presented with an error message similar to the example shown in Figure A-41.

Figure A-41 Example of a validation error message



Telephone change procedure

The following procedure outlines the steps that you take to make changes to your telephone.

1. Launch a supported web browser, and then navigate to the OTM host name or IP address provided by your network administrator.
2. Log in to Desktop Services using the Login Name and Password provided by your network administrator.

   The My Profile web page appears. This contains your OTM Directory information (Figure A-2 on page A-3).
3. Click a telephone extension link in the Navigation Bar.

   The General page appears. If allowed by your network administrator, you can change the Station Location, Key Based Modules, and Designation fields (Figure A-3 on page A-6).

   To make a change:

   a. Enter the new value, and then click Submit.

      A page containing a summary of your changes opens (Figure A-4 on page A-8).

   b. Click Confirm.

A confirmation message appears (Figure A-39 through Figure A-41 beginning on page A-38).

Note: The sync status of the telephone appears at the top of the Telephone pages. When the information for the telephone has been changed, but the changes have not been synchronized with the Meridian 1 or Succession CSE 1000 system, a Show Current configuration/Pending changes drop-down box allows you to select which configuration is shown. Once the telephone and the system have been synchronized, "Current configuration" appears at the top of the page, and the drop-down box no longer appears.

4 Click Keys.

The Keys page appears. If allowed by your network administrator, you can change the key-based features, or functions, assigned to any of the keys. To make a change:

a In the graphical representation of your telephone, click the key you want to change (Figure A-15 on page A-17).

b Click Change.

A list of the available choices for the selected key appears in the Key Change Wizard (Figure A-18 on page A-20).

c Select a new key-based feature to assign to the key, and then click Open.

d If required, the Key Change Wizard opens a page that requests that you enter the parameters for the selected key (Figure A-19 on page A-21). Enter the parameters.

e Click Submit.

A page containing a summary of your changes opens (Figure A-20 on page A-22).

f Click Confirm.

A confirmation message appears (Figure A-39 through Figure A-41 beginning on page A-38).

5 Click Features.

The Features page appears. If permitted by your network administrator, you can change the allowed/denied status of features assigned to your extension (Figure A-36 on page A-35).

To make a change:

a Do one of the following:

- Select the appropriate value for the desired feature from the drop down box.
- Enter the value of the parameter associated with the desired feature in the edit box.

b Click Submit.

A page containing a summary of your changes opens.

c Click Confirm.

A confirmation message appears (Figure A-39 through Figure A-41 beginning on page A-38).

6 Click Details.

Information on the Keys and Features currently assigned to your telephone appears on the Details page. This page is always read only (Figure A-37 on page A-36, and Figure A-38 on page A-37).

7 If a Schedule button appears at the top if the Telephones pages, your network administrator has permitted you to automatically synchronize all of the changes you have made with the information stored on the Meridian 1 or Succession CSE 1000 system. If there is no Schedule button, your network administrator reviews your changes and manually synchronizes the changes with the Meridian 1 or Succession CSE 1000 system. If the Schedule button is present:

a Click Schedule.

b Wait a few moments for the synchronization to occur.

c Click Refresh in your browser.

When the Show Current configuration/Pending changes drop-down list no longer appears, all of your changes have been made and the telephone has the new configuration.

8 If it has been configured by your network administrator, click the Billing Reports link in the Navigation Bar to view your telephone billing reports from the Telecom Billing System (TBS). TBS Web Reporting is available with OTM 1.2 and later.

Appendix B
Script file summary

This appendix contains a list of all of the script files used for the OTM applications. A script is a pre-written program that contains a set of commands and functions required to perform specific activities. Some scripts are defined for specific PC and Meridian 1 or Succession CSE 1000 configurations and are therefore, selected based on each user's configuration. Most OTM scripts, however, are defined for the general operation of the OTM applications and are therefore, automatically selected to perform specific functions within OTM.

Common Services scripts

The following script files are used by the OTM Common Services applications. They are automatically selected whenever you run OTM and apply to all of the OTM applications as a whole. You do not need to select these script files to perform a required function:

HAYESMDM.SCR	Functional script used by Common Services applications for connection with Hayes compatible modems.
CUSTMDM.SCR	Functional script used by Common Services applications for connection with customized modems.
M1MODEM.SCR	Functional support script used to access far-end equipment (for example, dispatcher modems).
ERROR.SCR	Functional script required for error handling.

Telecom Billing System scripts

The following script files are used by the Telecom Billing System to perform data collection. Select the script file that matches your data collection and processing requirements.

Real-time CDR data collection

The following script files are used for real-time CDR data collection from the Meridian 1; no buffer unit is required:

SL1OLD.COL	Real-time data collection script for Old format CDR.
SL1NEW.COL	Real-time data collection script for New format CDR.

CDR data collection from MDR-2000

The following script file is used for data collection from an MDR-2000 buffer unit:

MDR2000.COL	Data collection script, which collects New format CDR from MDR-2000 to produce normalized CDR (erases contents of buffer). MDR-2000 requires a chip that is compatible with X11 Release 23.

Sample data collection

The following script file is used to collect CDR data from a sample file. This is used for testing purposes:

SAMPLE.COL	Data collection script, which collects sample CDR data from the sample file in the Telecom Billing System directory.

Traffic Analysis scripts

The script files used by OTM Traffic Analysis provide the main functions required for traffic data collection and report generation. The data collection script files are selected when you enter your Meridian 1 or Succession CSE 1000 information and communications parameters. The report generation script files are automatically selected when you generate reports.

Real-time traffic data collection

The following script files are used for real-time traffic data collection (no buffer unit). They are automatically selected when you set up this site for real-time traffic data collection (from the OTM Site Configuration application):

LD2.SCR	Main traffic data collection scripts.
LD2INI.SCR	Functional script used by LD2.SCR (used to initialize Meridian 1 and Succession CSE 1000 systems to have collection performed hourly).
LOGSL1.SCR	Functional script used by LD2.SCR.

Traffic data collection from MDR-2000

The following script files are used for traffic data collection from an MDR-2000 buffer unit. They are automatically selected when you set up this site for traffic data collection through the MDR-2000 buffer unit (from the OTM Site Configuration application):

M2K.SCR	Main traffic data collection script.
M2KINI.SCR	Functional script used by M2K.SCR (used to initialize Meridian 1 and Succession CSE 1000 systems to have collection performed hourly in pass-through mode).

Traffic data collection from PollCat II/III

The following script file is used for traffic data collection from the PollCat II/III buffer units. It is automatically selected when you set up this site for traffic data collection using the PollCat II/III buffer units (from the OTM Site Configuration application):

POLL.SCR	Main traffic data collection script.

Traffic data collection from AT1/AT2

The following script files are used for traffic data collection from the AT1 and AT2 buffer units. They are automatically selected when you set up this site for traffic data collection using the AT1 or AT2 buffer units (from the OTM Site Configuration application):

TSB1.SCR	Main traffic data collection script for AT1 buffer unit.
TSB2.SCR	Main traffic data collection script for AT2 buffer unit.

Traffic data collection from SEB II

The following script file is used for traffic data collection from the SEB II buffer unit. It is automatically selected when you set up this site for traffic data collection using the SEB II buffer unit (from the OTM Site Configuration application):

SEBTRAF.SCR	Main traffic data collection script.

Traffic data collection from Sentinel 2000

The following script file is used for traffic data collection from the Sentinel 2000 buffer unit. It is automatically selected when you set up this site for traffic data collection using the Sentinel 2000 buffer unit (from the OTM Site Configuration application):

SNLTRAF.SCR	Main traffic data collection script.

Traffic Analysis report generation

The following script files are used for report generation. They are automatically selected when you generate Traffic Analysis reports:

AUXPLK.SCR	AVGSOA.SCR	CALPRK.SCR	CBKQUE.SCR
CONSOL.SCR	CSAML1.SCR	CSAML2.SCR	CSAML3.SCR
CSAML4.SCR	CSAML5.SCR	CSAML6.SCR	CSAMLI.SCR
CSAMLK.SCR	CUSCON.SCR	DCHANL.SCR	DTDLAY.SCR
DTNSPD.SCR	FEAKEY.SCR	GLOBAL.SCR	GLPTRF.SCR
GMSGAP.SCR	GNTLPS.SCR	GOHQUE.SCR	GPCLTB.SCR
GPROCL.SCR	GROUTL.SCR	GSUTRF.SCR	GTRNKS.SCR
ICONSL.SCR	IMTCHL.SCR	INPMSG.SCR	INTRKG.SCR
ISDNPD.SCR	ISDNPM.SCR	ISDNPT.SCR	JCTRAF.SCR
JCTRGP.SCR	LPTRAF.SCR	MICRO.SCR	MSGATQ.SCR
MUSBRD.SCR	NCOSVC.SCR	NETLPS.SCR	NETWKS.SCR
NTATSV.SCR	OHKOVT.SCR	OHKQUE.SCR	OMTCHL.SCR
OUTMSG.SCR	PCTLTB.SCR	PRADIO.SCR	PROCLD.SCR
RADPAG.SCR	RANBRD.SCR	RTLREQ.SCR	SELTRM.SCR
SLTRAF.SCR	SRADIO.SCR	SUMCCO.SCR	SUMICO.SCR
SUMSYS.SCR	SUMTRK.SCR	SVCLPS.SCR	TMESSG.SCR
TRUNKS.SCR	TSETST.SCR	WATCON.SCR	WPRCLD.SCR
WTRNKS.SCR			

The following script files are used for the Data Parser as part of the report generation process. They are automatically selected when processing data for Traffic Analysis reports:

TFC000.SCR	TFC001.SCR	TFC002.SCR	TFC003.SCR
TFC004.SCR	TFC005.SCR	TFC006.SCR	TFC007.SCR
TFC008.SCR	TFC009.SCR	TFC10X.SCR	TFC101.SCR
TFC105.SCR	TFN001.SCR	TFN002.SCR	TFN101.SCR

TFS000.SCR	TFS001.SCR	TFS002.SCR	TFS003.SCR
TFS004.SCR	TFS005.SCR	TFS007.SCR	TFS008.SCR
TFS009.SCR	TFS010.SCR	TFS011.SCR	TFS012.SCR
TFS013.SCR	TFS50X.SCR	TFS101.SCR	TFS102.SCR
TFS105.SCR	TFS41X.SCR	TRAFFIC.SCR	TRFAXS.SCR
TRFCDR.SCR	TRFCUS.SCR	TRFNET.SCR	TRFSYS.SCR

Call Tracking scripts

The following script files are used by Call Tracking to perform data collection and real-time monitoring. Certain script files are automatically selected when you enter your configuration parameters in the OTM Site Configuration application. These represent the common scripts for data collection.

For example, if you define SDI1 to have real-time CDR data collection performed from it, then SDI1 is configured to run the real-time CDR data collection scripts SL1.SCR and SL1LOGIN.SCR.

If you collect CDR data from a data file (for example, if you select the File option from the Call Tracking Communications database), then you can select the filename from which you will collect the CDR data, and then select a script filename for that particular format of CDR data. For example, if you select a file for data collection that contains normalized CDR data, then you select the script file COLLECT.SCR.

Real-time CDR data collection

The following script files are used for real-time CDR data collection from the Meridian 1 and Succession CSE 1000 systems. No buffer unit is required:

SL1.SCR	Real-time data collection script for Old format CDR.
SL1NEW.SCR	Real-time data collection script for New format CDR.
SL1NEWX.SCR	Real-time data collection script for New format CDR; supports X11 Release 23.

SL1EURO.SCR	Real-time data collection script for New format CDR with Periodic Pulse Metering.
SL1EUROX.SCR	Real-time data collection script for “New” format CDR with Periodic Pulse Metering; supports X11 Release 23.
SL1LOGIN.SCR	Functional script used by above-mentioned data collection scripts.

CDR data collection from MDR-2000

The following script files are used for data collection from an MDR-2000 buffer unit:

COLLECT.SCR	Data collection script, which collects Old format CDR from MDR-2000 to produce normalized CDR (erases contents of buffer).
COLLECTX.SCR	Data collection script, which collects New format CDR from MDR-2000 to produce normalized CDR (erases contents of buffer); MDR-2000 requires a chip that is compatible with X11 Release 23.
2000FD.SCR	Data collection script, which monitors in real-time Old format CDR from an MDR-2000.
2000FDX.SCR	Data collection script, which monitors in real time New format CDR from an MDR-2000; MDR-2000 requires a chip that is compatible with X11 Release 23.

CDR data collection from PollCat II/III

The following script files are used for data collection from the PollCat II/III buffer units:

POLLCDR.SCR	CDR data collection script for PollCat II/III buffer units.
PARSESL1.SCR	Functional script used by POLLCDR.SCR.
POLLNEWX.SCR	CDR data collection script for PollCat II/III buffer units; supports X11 Release 23.
NEWCDRX.SCR	Functional script used by POLLNEWX.SCR.

CDR data collection from AT1/AT2

The following script files are used for data collection from the AT1 and AT2 buffer units:

AT1CDR.SCR	CDR data collection script for AT1 buffer unit.
AT2CDR.SCR	CDR data collection script for AT2 buffer unit.
PARSESL1.SCR	Functional script used by AT1CDR.SCR and AT2CDR.SCR script files.
AT1NEWX.SCR	New format CDR data collection script for AT1 buffer unit; supports X11 Release 23.
AT2NEWX.SCR	New format CDR data collection script for AT2 buffer unit; supports X11 Release 23.
NEWCDRX.SCR	Functional script used by AT1NEWX.SCR and AT2NEWX.SCR script files.

CDR data collection from SEB II

The following script files are used for data collection from the SEB II buffer unit:

SEB.SCR	CDR data collection script for SEB II buffer unit.
PARSESL1.SCR	Functional script used by SEB.SCR script file.
SEBNEWX.SCR	New format CDR data collection script for SEB II buffer unit; supports X11 Release 23.
NEWCDRX.SCR	Functional script used by SEBNEWX.SCR script file.

CDR data collection from Sentinel 2000

The following script files are used for data collection from a Sentinel 2000 buffer unit:

SNLCDR.SCR	CDR data collection script for Sentinel 2000 buffer unit.
SNLCDRX.SCR	CDR data collection script for Sentinel 2000 buffer unit; supports X11 Release 23.

Call Tracking alarm scripts

The following script files are used for Call Tracking alarms. They are automatically selected when you define the Call Tracking alarms:

CMALARM.SCR	Call Tracking alarm script.
CMPAGER.SCR	Call Tracking alarm pager script.

CDR data collection modem scripts

The following script files are supporting function scripts used by all CDR data collection scripts for Call Tracking. The appropriate script is automatically used when you select Hayes or Custom as the format for the modem for CDR data collection from the OTM Site Configuration application.

If you enter custom modem information when setting up a site, then the custom modem script file is updated with the appropriate parameters:

HAYES.SCR	Functional script used by all CDR data collection scripts in Call Tracking for connection with Hayes-compatible modems.
CUSTOM.SCR	Functional script used by all CDR data collection scripts in Call Tracking for connection with customized modems (updated with correct parameters).

Script usage table

The following table lists the types of scripts that are selected for different scenarios for Call Tracking. These represent the main scripts that can be selected to suit a particular scenario. All other scripts are automatically selected depending on these script selections.

Table B-1 Script usage table

To	Use
Perform real-time CDR data collection from Meridian 1 and Succession CSE 1000 systems	SL1.SCR
Collect CDR from MDR-2000 buffer unit	COLLECT.SCR
Collect CDR from PollCat II/III buffer units	POLLCDR.SCR
Collect CDR from AT1 buffer unit	AT1CDR.SCR
Collect CDR from AT2 buffer unit	AT2CDR.SCR
Collect CDR from SEB II buffer unit	SEB.SCR
Collect Traffic data from SEB II buffer unit	SEBTRAF.SCR
Collect CDR from Sentinel 2000 buffer unit	SNLCDR.SCR

Appendix C
Control files included with alarm notification

This appendix displays the control files that are loaded into the OTM PC when the Alarm Notification application is installed. These files are loaded into the default location C:\Nortel\Common Data\Alarm Notification\Control Files unless otherwise specified.

Caution: Always use a copy of these files when customizing them for your specific environment. Do not use the original files supplied with your OTM product. These files are overwritten when OTM is reinstalled or upgraded; if you have customized the original files, any changes will be lost.

Devices file

This section shows the content of the *Devices.txt* file included with the application.

```
# This file contains a list of specific devices to be monitored by
# Alarm Notification.  As this file may be replaced during a software upgrade,
# it is suggested that any changes be made in a copy and the copy used.
# The following are example definitions:
#
#Meridian1 192.9.200.1 my_m1
#Meridian1 192.9.200.2
#Meridian1 sample_m1

#OTM          47.82.40.57
#MMCS         47.32.164.69
#ITG          47.82.45.161
#ITG_ISDN_TRK 47.82.46.64
#ITG_IP_LINE  47.114.40.31
#ITG_IP_PHONE 47.114.40.31
#ISS7         47.49.4.78
#BRAVO        47.49.4.80
#CALL_PILOT   47.235.12.85
#BS450        47.32.164.80
#MMCS_AP      47.49.4.20
#MMAIL        47.24.42.12
#SCCS         47.44.14.160
#CALL_SERVER  47.147.74.31
#SIGNALLING_SERVER  47.32.164.90
#MEDIA_CARD   47.147.74.41
#
# User provided devices should be added below this line.

Meridian1 47.114.45.3
Meridian1 47.114.45.5
Meridian1 47.114.45.7
MMCS      47.114.45.2
```

Configuration file

This section shows the content of the *Config.txt* file included with the application.

```
# These are the SNMP trap definitions for Nortel supported devices.

# This file is replaced during a software upgrade, so we suggest
# that you backup this file before an upgrade and also before changing it.

device BRAVO 6.1 6.2 6.3 6.4 6.5 6.6 {
   1.3.6.1.4.1.562.3.11.4.4.1.7.2.0 string  $SystemComponent        "System Component"
   1.3.6.1.4.1.562.3.11.4.4.1.7.3.0 string  $DeviceTime            "Device Time"
   1.3.6.1.4.1.562.3.11.4.4.1.7.4.0 integer $ActiveListStatus      "Active Status"
   1.3.6.1.4.1.562.3.11.4.4.1.7.5.0 integer $Severity              "Severity"
   1.3.6.1.4.1.562.3.11.4.4.1.7.6.0 integer $AlarmType             "Alarm Type"
   1.3.6.1.4.1.562.3.11.4.4.1.7.7.0 integer $ProbableCause         "Probable Cause"
   1.3.6.1.4.1.562.3.11.4.4.1.7.8.0 string  $ErrorCode             "Error Code"
   1.3.6.1.4.1.562.3.11.4.4.1.7.9.0 string  $OperatorData          "Operator Data"
}

device BS450 0.0 1.0 2.0 3.0 4.0 5.0 {
   1.3.6.1.2.1.2.2.1.1.1 integer            $Port1                 "Port 1"
   1.3.6.1.2.1.2.2.1.1.2 integer            $Port2                 "Port 2"
   1.3.6.1.2.1.2.2.1.1.3 integer            $Port3                 "Port 3"
   1.3.6.1.2.1.2.2.1.1.4 integer            $Port4                 "Port 4"
   1.3.6.1.2.1.2.2.1.1.5 integer            $Port5                 "Port 5"
   1.3.6.1.2.1.2.2.1.1.6 integer            $Port6                 "Port 6"
   1.3.6.1.2.1.2.2.1.1.7 integer            $Port7                 "Port 7"
   1.3.6.1.2.1.2.2.1.1.8 integer            $Port8                 "Port 8"
   1.3.6.1.2.1.2.2.1.1.9 integer            $Port9                 "Port 9"
   1.3.6.1.2.1.2.2.1.1.10 integer           $Port10                "Port 10"
   1.3.6.1.2.1.2.2.1.1.11 integer           $Port11                "Port 11"
   1.3.6.1.2.1.2.2.1.1.12 integer           $Port12                "Port 12"
   1.3.6.1.2.1.2.2.1.1.13 integer           $Port13                "Port 13"
   1.3.6.1.2.1.2.2.1.1.14 integer           $Port14                "Port 14"
   1.3.6.1.2.1.2.2.1.1.15 integer           $Port15                "Port 15"
   1.3.6.1.2.1.2.2.1.1.16 integer           $Port16                "Port 16"
   1.3.6.1.2.1.2.2.1.1.17 integer           $Port17                "Port 17"
   1.3.6.1.2.1.2.2.1.1.18 integer           $Port18                "Port 18"
   1.3.6.1.2.1.2.2.1.1.19 integer           $Port19                "Port 19"
   1.3.6.1.2.1.2.2.1.1.20 integer           $Port20                "Port 20"
   1.3.6.1.2.1.2.2.1.1.21 integer           $Port21                "Port 21"
   1.3.6.1.2.1.2.2.1.1.22 integer           $Port22                "Port 22"
   1.3.6.1.2.1.2.2.1.1.23 integer           $Port23                "Port 23"
   1.3.6.1.2.1.2.2.1.1.24 integer           $Port24                "Port 24"
}

device CALL_PILOT 6.1 6.2 6.3 6.4 {
   1.3.6.1.4.1.562.3.8.2.5.2.1.1.0 integer  $AlarmSeqNum           "Alarm Seq Num"
   1.3.6.1.4.1.562.3.8.2.5.2.1.2.0 string   $DeviceTime            "Device Time"
   1.3.6.1.4.1.562.3.8.2.5.2.1.3.0 integer  $AlarmCode              "Error Code"
   1.3.6.1.4.1.562.3.8.2.5.2.1.4.0 integer  $AlarmType              "Alarm Type"
   1.3.6.1.4.1.562.3.8.2.5.2.1.5.0 integer  $Severity               "Severity"
   1.3.6.1.4.1.562.3.8.2.5.2.1.6.0 integer  $TenantID               "Tenant ID"
   1.3.6.1.4.1.562.3.8.2.5.2.1.7.0 integer  $CustomerID             "Customer ID"
   1.3.6.1.4.1.562.3.8.2.5.2.1.8.0 string   $SystemComponent        "System Component"
   1.3.6.1.4.1.562.3.8.2.5.2.1.9.0 string   $OperatorData          "Operator Data"
}

device ISS7 6.1 6.2 6.3 6.4 6.5 6.6 {
   1.3.6.1.4.1.562.27.2.1.7.2.0 string      $SystemComponent        "System Component"
   1.3.6.1.4.1.562.27.2.1.7.3.0 string      $DeviceTime             "Device Time"
   1.3.6.1.4.1.562.27.2.1.7.4.0 integer     $ActiveListStatus       "Active Status"
```

```
   1.3.6.1.4.1.562.27.2.1.7.5.0 integer     $Severity              "Severity"
   1.3.6.1.4.1.562.27.2.1.7.6.0 integer     $AlarmType             "Alarm Type"
   1.3.6.1.4.1.562.27.2.1.7.7.0 integer     $ProbableCause         "Probable Cause"
   1.3.6.1.4.1.562.27.2.1.7.8.0 string      $ErrorCode             "Ntp Index"
   1.3.6.1.4.1.562.27.2.1.7.9.0 string      $OperatorData          "Operator Data"
}

device ITG 6.1 6.2 6.3 6.4 6.5 6.6 {
   1.3.6.1.4.1.562.3.11.1.4.1.7.2.0 string  $SystemComponent       "System Component"
   1.3.6.1.4.1.562.3.11.1.4.1.7.3.0 string  $DeviceTime            "Device Time"
   1.3.6.1.4.1.562.3.11.1.4.1.7.4.0 integer $ActiveListStatus      "Active Status"
   1.3.6.1.4.1.562.3.11.1.4.1.7.5.0 integer $Severity              "Severity"
   1.3.6.1.4.1.562.3.11.1.4.1.7.6.0 integer $AlarmType             "Alarm Type"
   1.3.6.1.4.1.562.3.11.1.4.1.7.7.0 integer $ProbableCause         "Probable Cause"
   1.3.6.1.4.1.562.3.11.1.4.1.7.8.0 string  $ErrorCode             "Ntp Index"
   1.3.6.1.4.1.562.3.11.1.4.1.7.9.0 string  $OperatorData          "Operator Data"
}

device ITG_ISDN_TRK 6.1 6.2 6.3 6.4 6.5 6.6 {
   1.3.6.1.4.1.562.3.11.2.4.1.7.2.0 string  $SystemComponent       "System Component"
   1.3.6.1.4.1.562.3.11.2.4.1.7.3.0 string  $DeviceTime            "Device Time"
   1.3.6.1.4.1.562.3.11.2.4.1.7.4.0 integer $ActiveListStatus      "Active Status"
   1.3.6.1.4.1.562.3.11.2.4.1.7.5.0 integer $Severity              "Severity"
   1.3.6.1.4.1.562.3.11.2.4.1.7.6.0 integer $AlarmType             "Alarm Type"
   1.3.6.1.4.1.562.3.11.2.4.1.7.7.0 integer $ProbableCause         "Probable Cause"
   1.3.6.1.4.1.562.3.11.2.4.1.7.8.0 string  $ErrorCode             "Ntp Index"
   1.3.6.1.4.1.562.3.11.2.4.1.7.9.0 string  $OperatorData          "Operator Data"
}

device ITG_IP_LINE 6.1 6.2 6.3 6.4 6.5 6.6 {
   1.3.6.1.4.1.562.3.11.5.4.1.7.2.0 string  $SystemComponent       "System Component"
   1.3.6.1.4.1.562.3.11.5.4.1.7.3.0 string  $DeviceTime            "Device Time"
   1.3.6.1.4.1.562.3.11.5.4.1.7.4.0 integer $ActiveListStatus      "Active Status"
   1.3.6.1.4.1.562.3.11.5.4.1.7.5.0 integer $Severity              "Severity"
   1.3.6.1.4.1.562.3.11.5.4.1.7.6.0 integer $AlarmType             "Alarm Type"
   1.3.6.1.4.1.562.3.11.5.4.1.7.7.0 integer $ProbableCause         "Probable Cause"
   1.3.6.1.4.1.562.3.11.5.4.1.7.8.0 string  $ErrorCode             "Ntp Index"
   1.3.6.1.4.1.562.3.11.5.4.1.7.9.0 string  $OperatorData          "Operator Data"
}

device ITG_IP_PHONE 6.1 6.2 6.3 6.4 6.5 6.6 {
   1.3.6.1.4.1.562.3.11.5.4.1.7.2.0 string  $SystemComponent       "System Component"
   1.3.6.1.4.1.562.3.11.5.4.1.7.3.0 string  $DeviceTime            "Device Time"
   1.3.6.1.4.1.562.3.11.5.4.1.7.4.0 integer $ActiveListStatus      "Active Status"
   1.3.6.1.4.1.562.3.11.5.4.1.7.5.0 integer $Severity              "Severity"
   1.3.6.1.4.1.562.3.11.5.4.1.7.6.0 integer $AlarmType             "Alarm Type"
   1.3.6.1.4.1.562.3.11.5.4.1.7.7.0 integer $ProbableCause         "Probable Cause"
   1.3.6.1.4.1.562.3.11.5.4.1.7.8.0 string  $ErrorCode             "Ntp Index"
   1.3.6.1.4.1.562.3.11.5.4.1.7.9.0 string  $OperatorData          "Operator Data"
}

device MDECT 6.1 6.2 6.3 6.4 6.6 6.9 6.10 {
  1.3.6.1.4.1.1417.1.1.1.5.0     string     $DeviceTime            "Device Time"
  1.3.6.1.4.1.1417.1.1.3.2.1.2.0 string     $OperatorData          "Operator Data"
  1.3.6.1.4.1.1417.1.1.3.3.1.4.0 string     $OperatorData          "Operator Data"
  1.3.6.1.4.1.1417.1.1.3.3.1.8.0 string     $OperatorData          "Operator Data"
  1.3.6.1.4.1.1417.1.1.3.9.0     string     $OperatorData          "Operator Data"
  1.3.6.1.4.1.1417.1.1.3.5.1.0   string     $OperatorData          "Operator Data"
  1.3.6.1.4.1.1417.1.1.3.7.0     string     $OperatorData          "Operator Data"
  1.3.6.1.4.1.1417.1.1.2.1.6.0   string     $OperatorData          "Operator Data"
  1.3.6.1.4.1.1417.1.1.3.1.0     string     $ErrorCode             "Error Code"
}

device Meridian1 6.10 {
   1.3.6.1.4.1.562.3.3.7.1.0  integer       $AlarmSeqNum           "Alarm Seq Num"
   1.3.6.1.4.1.562.3.3.7.2.0  string        $DeviceTime            "Device Time"
```

```
   1.3.6.1.4.1.562.3.3.7.3.0  integer       $Severity              "Severity"
   1.3.6.1.4.1.562.3.3.7.4.0  string        $ErrorCode             "Error Code"
   1.3.6.1.4.1.562.3.3.7.5.0  string        $SystemComponent       "System Component"
   1.3.6.1.4.1.562.3.3.7.6.0  string       $ComponentAddress      "Component Address"
   1.3.6.1.4.1.562.3.3.7.7.0  string        $Text                  "Text"
   1.3.6.1.4.1.562.3.3.7.8.0  string        $OperatorData          "Operator Data"
   1.3.6.1.4.1.562.3.3.7.9.0  string        $ExpertData            "Expert Data"
   1.3.6.1.4.1.562.3.3.7.10.0 string        $CurrentAlarmCounts
}

device CALL_SERVER 6.10 {
   1.3.6.1.4.1.562.3.3.7.1.0  integer       $AlarmSeqNum           "Alarm Seq Num"
   1.3.6.1.4.1.562.3.3.7.2.0  string        $DeviceTime            "Device Time"
   1.3.6.1.4.1.562.3.3.7.3.0  integer       $Severity              "Severity"
   1.3.6.1.4.1.562.3.3.7.4.0  string        $ErrorCode             "Error Code"
   1.3.6.1.4.1.562.3.3.7.5.0  string        $SystemComponent       "System Component"
   1.3.6.1.4.1.562.3.3.7.6.0  string       $ComponentAddress      "Component Address"
   1.3.6.1.4.1.562.3.3.7.7.0  string        $Text                  "Text"
   1.3.6.1.4.1.562.3.3.7.8.0  string        $OperatorData          "Operator Data"
   1.3.6.1.4.1.562.3.3.7.9.0  string        $ExpertData            "Expert Data"
   1.3.6.1.4.1.562.3.3.7.10.0 string        $CurrentAlarmCounts
}

device MEDIA_CARD 6.1 6.2 6.3 6.4 6.5 6.6 {
   1.3.6.1.4.1.562.3.11.5.4.1.7.2.0 string  $SystemComponent       "System Component"
   1.3.6.1.4.1.562.3.11.5.4.1.7.3.0 string  $DeviceTime           "Device Time"
   1.3.6.1.4.1.562.3.11.5.4.1.7.4.0 integer $ActiveListStatus     "Active Status"
   1.3.6.1.4.1.562.3.11.5.4.1.7.5.0 integer $Severity             "Severity"
   1.3.6.1.4.1.562.3.11.5.4.1.7.6.0 integer $AlarmType            "Alarm Type"
   1.3.6.1.4.1.562.3.11.5.4.1.7.7.0 integer $ProbableCause        "Probable Cause"
   1.3.6.1.4.1.562.3.11.5.4.1.7.8.0 string  $ErrorCode            "Ntp Index"
   1.3.6.1.4.1.562.3.11.5.4.1.7.9.0 string  $OperatorData         "Operator Data"
}

device SIGNALLING_SERVER 6.1 6.2 6.3 6.4 6.5 6.6 {
   1.3.6.1.4.1.562.3.21.5.4.1.7.2.0 string  $SystemComponent       "System Component"
   1.3.6.1.4.1.562.3.21.5.4.1.7.3.0 string  $DeviceTime           "Device Time"
   1.3.6.1.4.1.562.3.21.5.4.1.7.4.0 integer $ActiveListStatus     "Active Status"
   1.3.6.1.4.1.562.3.21.5.4.1.7.5.0 integer $Severity             "Severity"
   1.3.6.1.4.1.562.3.21.5.4.1.7.6.0 integer $AlarmType            "Alarm Type"
   1.3.6.1.4.1.562.3.21.5.4.1.7.7.0 integer $ProbableCause        "Probable Cause"
   1.3.6.1.4.1.562.3.21.5.4.1.7.8.0 string  $ErrorCode            "Ntp Index"
   1.3.6.1.4.1.562.3.21.5.4.1.7.9.0 string  $OperatorData         "Operator Data"
}

device MMAIL 6.1 6.2 6.3 6.4 {
   1.3.6.1.4.1.562.3.10.2.1.1.0  string     $DeviceTime           "Device Time"
   1.3.6.1.4.1.562.3.10.2.1.2.0  integer    $Severity             "Severity"
   1.3.6.1.4.1.562.3.10.2.1.3.0  integer    $SeerType             "Seer Type"
   1.3.6.1.4.1.562.3.10.2.1.4.0  string     $ErrorCode            "Error Code"
   1.3.6.1.4.1.562.3.10.2.1.5.0  string     $SystemComponent      "System Component"
   1.3.6.1.4.1.562.3.10.2.1.6.0  integer    $SeerNode             "Seer Node"
   1.3.6.1.4.1.562.3.10.2.1.7.0  string     $System               "System"
   1.3.6.1.4.1.562.3.10.2.1.8.0  string     $OperatorData         "Operator Data"
   1.3.6.1.4.1.562.3.10.2.1.9.0  string     $Text                 "Text"
   1.3.6.1.4.1.562.3.10.2.1.10.0 string     $ExpertData           "Expert Data"
}

device MMCS 6.10 {
   1.3.6.1.4.1.562.3.3.7.1.0 integer        $AlarmSeqNum          "Alarm Seq Num"
   1.3.6.1.4.1.562.3.3.7.2.0 string         $DeviceTime           "Device Time"
   1.3.6.1.4.1.562.3.3.7.3.0 integer        $Severity             "Severity"
   1.3.6.1.4.1.562.3.3.7.4.0 string         $ErrorCode            "Error Code"
   1.3.6.1.4.1.562.3.3.7.5.0 string         $SystemComponent      "System Component"
   1.3.6.1.4.1.562.3.3.7.6.0 string        $ComponentAddress      "Component Address"
   1.3.6.1.4.1.562.3.3.7.7.0 string         $Text                 "Text"
```

```
   1.3.6.1.4.1.562.3.3.7.8.0 string         $OperatorData           "Operator Data"
   1.3.6.1.4.1.562.3.3.7.9.0 string         $ExpertData             "Expert Data"
   1.3.6.1.4.1.562.3.3.7.10.0 string        $CurrentAlarmCounts
}

device MMCS_AP 6.1 6.2 6.3 6.4 6.5 6.6 {
   1.3.6.1.4.1.562.27.2.1.7.2.0 string      $SystemComponent        "System Component"
   1.3.6.1.4.1.562.27.2.1.7.3.0 string      $DeviceTime             "Device Time"
   1.3.6.1.4.1.562.27.2.1.7.4.0 integer     $ActiveListStatus       "Active Status"
   1.3.6.1.4.1.562.27.2.1.7.5.0 integer     $Severity               "Severity"
   1.3.6.1.4.1.562.27.2.1.7.6.0 integer     $AlarmType              "Alarm Type"
   1.3.6.1.4.1.562.27.2.1.7.7.0 integer     $ProbableCause          "Probable Cause"
   1.3.6.1.4.1.562.27.2.1.7.8.0 string      $ErrorCode              "Error Code"
   1.3.6.1.4.1.562.27.2.1.7.9.0 string      $OperatorData           "Operator Data"
}

device OTM 6.1 6.2 6.3 6.4 6.5 6.6 {
   1.3.6.1.4.1.562.50.1.2.1.0  integer      $AlarmSeqNum            "Alarm Seq Num"
   1.3.6.1.4.1.562.50.1.2.2.0  string       $DeviceTime             "Device Time"
   1.3.6.1.4.1.562.50.1.2.3.0  integer      $Severity               "Severity"
   1.3.6.1.4.1.562.50.1.2.4.0  integer      $NameSpace              "Name Space"
   1.3.6.1.4.1.562.50.1.2.5.0  string       $ErrorCode              "Error Code"
   1.3.6.1.4.1.562.50.1.2.6.0  string       $Site                   "Site"
   1.3.6.1.4.1.562.50.1.2.7.0  string       $System                 "System"
   1.3.6.1.4.1.562.50.1.2.8.0  string       $SystemComponent        "System Component"
   1.3.6.1.4.1.562.50.1.2.9.0  string       $OriginatingAgent       "Orig. Agent"
   1.3.6.1.4.1.562.50.1.2.12.0 string       $OperatorData           "Operator Data"
   1.3.6.1.4.1.562.50.1.2.13.0 string       $ExpertData             "Expert Data"
   1.3.6.1.4.1.562.50.1.2.14.0 string       $Text                   "Text"
}

device SCCS 6.1 6.2 6.3 6.4 {
   1.3.6.1.4.1.562.3.8.1.5.2.1.1.0 integer  $AlarmSeqNum            "Alarm Seq Num"
   1.3.6.1.4.1.562.3.8.1.5.2.1.2.0 string   $DeviceTime             "Device Time"
   1.3.6.1.4.1.562.3.8.1.5.2.1.3.0 integer  $AlarmCode              "Error Code"
   1.3.6.1.4.1.562.3.8.1.5.2.1.4.0 integer  $AlarmType              "Alarm Type"
   1.3.6.1.4.1.562.3.8.1.5.2.1.5.0 integer  $Severity               "Severity"
   1.3.6.1.4.1.562.3.8.1.5.2.1.6.0 integer  $TenantID               "Tenant ID"
   1.3.6.1.4.1.562.3.8.1.5.2.1.7.0 integer  $CustomerID             "Customer ID"
   1.3.6.1.4.1.562.3.8.1.5.2.1.8.0 string   $SystemComponent        "System Component"
   1.3.6.1.4.1.562.3.8.1.5.2.1.9.0 string   $OperatorData           "Operator Data"
}

device SL100 6.1 6.2 6.3 6.4 6.5 6.6 {
   1.3.6.1.4.1.562.50.1.2.1.0  integer      $AlarmSeqNum            "Alarm Seq Num"
   1.3.6.1.4.1.562.50.1.2.2.0  string       $DeviceTime             "Device Time"
   1.3.6.1.4.1.562.50.1.2.3.0  integer      $Severity               "Severity"
   1.3.6.1.4.1.562.50.1.2.4.0  integer      $NameSpace              "Name Space"
   1.3.6.1.4.1.562.50.1.2.5.0  string       $ErrorCode              "Error Code"
   1.3.6.1.4.1.562.50.1.2.6.0  string       $Site                   "Site"
   1.3.6.1.4.1.562.50.1.2.7.0  string       $System                 "System"
   1.3.6.1.4.1.562.50.1.2.8.0  string       $SystemComponent        "System Component"
   1.3.6.1.4.1.562.50.1.2.9.0  string       $OriginatingAgent       "Orig. Agent"
   1.3.6.1.4.1.562.50.1.2.12.0 string       $OperatorData           "Operator Data"
   1.3.6.1.4.1.562.50.1.2.13.0 string       $ExpertData             "Expert Data"
   1.3.6.1.4.1.562.50.1.2.14.0 string       $Text                   "Text"
}

# Add user supplied device definitions below this comment line.
```

Script files

This section shows the content of the *sample_an_script.txt* and the *sample_wizard_script.txt* files included with the OTM application.

Sample Alarm Notification script file

The content of the file *sample_an_script.txt* appears below:

```
// ********************************************************************************************
//
//                                  Alarm Notification Scripts
//
// ********************************************************************************************


// ********************************************************************************************
// Map severities from the various traps that OTM receives into a standard severity list.
// ********************************************************************************************

counter $NormalizedSeverity := 0;

counter Undetermined    := 0;
counter Critical        := 1;
counter Major           := 2;
counter Minor           := 3;
counter Warning         := 4;
counter Info            := 5;
counter Cleared         := 6;
counter Unknown         := 7;

// ============================================================================
//                           Map OTM severities
// ============================================================================
// 1 -> Critical; 2 -> Major; 3 -> Minor; 4 -> Info; 5 -> Info; 6 -> Cleared; 7 -> Unknown; x -> Undetermined

script AssignOTMSeverities when ( $CurrentTrapDevice = "OTM" ) {
     function assignit() {
          if ($Severity=Critical) {
               $NormalizedSeverity:=Critical;
          }else{ if ($Severity=Major) {
               $NormalizedSeverity:=Major;
          }else{ if ($Severity=Minor) {
               $NormalizedSeverity:=Minor;
          }else{ if ($Severity=Info) {
               $NormalizedSeverity:=Info;
          }else{ if ($Severity=Unknown) {
               $NormalizedSeverity:=Unknown;
          }else{ if ($Severity=Warning) {
               $NormalizedSeverity:=Warning;
          }else{ if ($Severity=Cleared){
               $NormalizedSeverity:=Cleared;
          }else{
               $NormalizedSeverity:=Undetermined;
          }}}}}}}
     }
     rule assign_severity {
          if ($CurrentTrapDevice="OTM") {
               assignit();
          }
     }
}
```

```
// ==========================================================================
//                           Map MDECT severities
// ==========================================================================

// All MDECT Alarms should be Critical

script AssignMDECTSeverities when ( $CurrentTrapDevice = "MDECT" )
{
  function assignit()
  {
    $NormalizedSeverity := Critical;
  }
  rule assign_severity
  {
    if ($CurrentTrapDevice = "MDECT")
    {
      assignit();
    }
  }
}

// ==========================================================================
//                 Map severities from Meridian1 Open Alarms
// ==========================================================================
// 1 -> Minor; 2 -> Major; 3 -> Critical; 4 -> Unknown; 5 -> Warning; 6 -> Cleared; 7 -> Undetermined; x -> Info

script convertM1Severities when ( $CurrentTrapDevice = "Meridian1" ) {
     function convertit() {
          if ($Severity=1){
               $NormalizedSeverity:=Minor;
          }else{ if ($Severity=2){
               $NormalizedSeverity:=Major;
          }else{ if ($Severity=3){
               $NormalizedSeverity:=Critical;
          }else{ if ($Severity=4){
               $NormalizedSeverity:=Unknown;
          }else{ if ($Severity=5){
               $NormalizedSeverity:=Warning;
          }else{ if ($Severity=6){
               $NormalizedSeverity:=Cleared;
          }else{ if ($Severity=7){
               $NormalizedSeverity:=Undetermined;
          }else{
               $NormalizedSeverity:=Info;
          }}}}}}}
     }
     // ---------------------------------------------------------------
     rule severity_conversion {
          if ($CurrentTrapDevice="Meridian1"){
               convertit();
          }
     }
}


// ==========================================================================
//           Map severities from devices other than OTM, MDECT and Meridian1
// ==========================================================================
// 1 -> Critical; 2 -> Major; 3 -> Minor; 4 -> (CallPilot::Info, Warning); 5 -> (CallPilot::Unknown, Cleared); x
-> Undetermined

script convertSeverities when ($CurrentTrapDevice != "OTM"
      and $CurrentTrapDevice != "Meridian1"
      and $CurrentTrapDevice != "CALL_SERVER" and $CurrentTrapDevice != "MMCS"
      and $CurrentTrapDevice != "MDECT")
{

     function convertit() {
          if ($Severity=1) {
               $NormalizedSeverity:=Critical;
          }else{ if ($Severity=2){
```

```
            $NormalizedSeverity:=Major;
        }else{ if ($Severity=3){
            $NormalizedSeverity:=Minor;
        }else{ if ($Severity=4){
            if ($CurrentTrapDevice="CALL_PILOT"){
                $NormalizedSeverity:=Info;
            }else{
                $NormalizedSeverity:=Warning;
            }
        }else{ if ($Severity=5){
            if ($CurrentTrapDevice="CALL_PILOT"){
                $NormalizedSeverity:=Unknown;
            }else{
                $NormalizedSeverity:=Cleared;
            }
        }else{
            $NormalizedSeverity:=Undetermined;
        }}}}}
    }

  rule severity_conversion
  {
    if ($CurrentTrapDevice !="OTM" and $CurrentTrapDevice != "Meridian1"
          and $CurrentTrapDevice != "CALL_SERVER" and $CurrentTrapDevice != "MMCS"
          and $CurrentTrapDevice != "MDECT")
    {
      convertit();
    }
  }
}


// ********************************************************************************************
//                                    Assign $NameSpace
// ********************************************************************************************

counter nsOtm               := 1; // Originated from an OTM
counter nsMeridian1         := 2;
counter nsCallPilot         := 3;
counter nsMeridianMail      := 4;
counter nsSl100             := 5;
counter nsPassport          := 6;
counter nsItg               := 7;
counter nsBravo             := 8;
counter nsIss7              := 9;
counter nsMDECT             := 10;
counter nsCallServer        := 11;
counter nsMediaCard         := 12;
counter nsSigServer         := 13;
counter nsSccs              := 14;
counter nsMeridianMailLink  := 15;
counter nsGenericOrUnknown  := 16;


script assignNameSpace {

    function ns() {
        if ($CurrentTrapDevice="OTM") {
            // Original $CurrentTrapDevice is retained
        }else{ if ( $CurrentTrapDevice = "Meridian1") {
            $NameSpace := nsMeridian1;
        }else{ if ( $CurrentTrapDevice = "CALL_PILOT" ) {
            $NameSpace := nsCallPilot;
        }else{ if ( $CurrentTrapDevice = "MMCS" ) {
            $NameSpace := nsMeridianMail;
        }else{ if ( $CurrentTrapDevice = "ITG"
            or $CurrentTrapDevice = "ITG_ISDN_TRK"
            or $CurrentTrapDevice = "ITG_IP_LINE"
            or $CurrentTrapDevice = "ITG_IP_PHONE" )
```

```
        {
            $NameSpace := nsItg;
        }else{ if ( $CurrentTrapDevice = "BRAVO" ) {
            $NameSpace := nsBravo;
        }else{ if ( $CurrentTrapDevice = "ISS7" ) {
            $NameSpace := nsIss7;
        }else{ if ( $CurrentTrapDevice = "MDECT" ) {
            $NameSpace := nsMDECT;
        }else{ if ( $CurrentTrapDevice = "SCCS" ) {
            $NameSpace := nsSccs;
        }else{ if ( $CurrentTrapDevice = "CALL_SERVER" ) {
            $NameSpace := nsCallServer;
        }else{ if ( $CurrentTrapDevice = "MEDIA_CARD" ) {
            $NameSpace := nsMediaCard;
        }else{ if ( $CurrentTrapDevice = "SIGNALLING_SERVER" ) {
            $NameSpace := nsSigServer;
        }else{
            $NameSpace := nsGenericOrUnknown;
        }}}}}}}}}}}
    }

    rule ns1 {
        if (1) {
         ns();
        }
    }
}

// ********************************************************************************
//                              Console and Log Files
// ********************************************************************************

// ================================================================================
// This is a sample definition for using a log file.  All events sent
//   to this notification will be appended to the filename defined below.
//   Please note that Windows "long" file names are not supported.
// ================================================================================

notification file sample_file {
   filename:="c:\sample_log.txt";
}

script ConsoleAndLog {

    rule check_Meridian1_critical {
        if ( $CurrentTrapDevice = "Meridian1" and $NormalizedSeverity = Critical ) {
            // print event to console
            send( con,
                "--> Critical Meridian1 alarm received! ",
                $ErrorCode," - " ,                  // M1 error code
                $CurrentPCTime, " - ",              // Time that PC received the alarm
                $CurrentTrapSource," - " ,          // Name of this M1
                $DeviceTime," - " ,                 // Timestamp from M1
                $Text," - ",                        // Text with error message
                $OperatorData                       // More text with error message
            );

            // append event to log file
            send(sample_file,"--> Critical M1 alarm received! ",
                $ErrorCode," - " ,                  // M1 error code
                $CurrentPCTime, " - ",              // Time that PC received the alarm
                $CurrentTrapSource," - " ,          // Name of this M1
                $DeviceTime," - " ,                 // Timestamp from M1
                $Text," - ",                        // Text with error message
                $OperatorData                       // More text with error message
            );
        }
    }
```

```
    rule check_CallServer_critical {
         if ( $CurrentTrapDevice = "CALL_SERVER" and $NormalizedSeverity = Critical ) {
              // print event to console
              send( con,
                   "--> Critical CallServer alarm received! ",
                   $ErrorCode," - " ,                  // CS error code
                   $CurrentPCTime, " - ",              // Time that PC received the alarm
                   $CurrentTrapSource," - " ,          // Name of this CS
                   $DeviceTime," - " ,                 // Timestamp from CS
                   $Text," - ",                        // Text with error message
                   $OperatorData                       // More text with error message
              );

              // append event to log file
              send(sample_file,"--> Critical CallServer alarm received! ",
                   $ErrorCode," - " ,                  // CS error code
                   $CurrentPCTime, " - ",              // Time that PC received the alarm
                   $CurrentTrapSource," - " ,          // Name of this CS
                   $DeviceTime," - " ,                 // Timestamp from CS
                   $Text," - ",                        // Text with error message
                   $OperatorData                       // More text with error message
              );
         }
    }

    rule check_SCCS_critical {
                 if ( $CurrentTrapDevice = "SCCS" and $NormalizedSeverity = Critical ) {
                // print event to console
                send( con,
                     "--> Critical SCCS alarm received! ",
                               $AlarmCode," - " ,                  // SCCS alam code
                     $CurrentPCTime, " - ",              // Time that PC received the alarm
                     $CurrentTrapSource," - " ,          // Name of this SCCS
                     $DeviceTime," - " ,                 // Timestamp from SCCS
                     $OperatorData                       // text with error message
                );

                // append event to log file
                send(sample_file,"--> Critical SCCS alarm received! ",
                               $AlarmCode," - " ,                  // SCCS alam code
                     $CurrentPCTime, " - ",              // Time that PC received the alarm
                     $CurrentTrapSource," - " ,          // Name of this SCCS
                     $DeviceTime," - " ,                 // Timestamp from SCCS
                     $OperatorData                       // text with error message
                );
              }
         }

    rule check_CallPilot_critical {
                if ( $CurrentTrapDevice = "CALL_PILOT" and $NormalizedSeverity = Critical ) {
                // print event to console
                send( con,
                     "--> Critical CallPilot alarm received! ",
                               $AlarmCode," - " ,                  // CP alam code
                     $CurrentPCTime, " - ",              // Time that PC received the alarm
                     $CurrentTrapSource," - " ,          // Name of this CP
                     $DeviceTime," - " ,                 // Timestamp from CP
                     $OperatorData                       // text with error message
                );

                // append event to log file
                send(sample_file,"--> Critical CallPilot alarm received! ",
                               $AlarmCode," - " ,                  // CP alam code
                     $CurrentPCTime, " - ",              // Time that PC received the alarm
                     $CurrentTrapSource," - " ,          // Name of this CP
                     $DeviceTime," - " ,                 // Timestamp from CP
                     $OperatorData                       // text with error message
                );
               }
          }
}
```

```
// ************************************************************************
//                            Numeric and Alpha Pagers
// ************************************************************************

// ========================================================================
// This is a sample definition for using a numeric pager
//   To use, the phone number should be changed to your pager number
//   and the notification (as well as the references to it) should be
//   uncommented.
// ========================================================================

/*
notification npager sample_numeric_pager {
   phone:="9,555-1212";
}
*/

// ========================================================================
// This is a sample definition for using an alpha pager
//   To use, the phone number should be changed to your pager number,
//   your PIN number should be added, and the notification (as well
//   as the references to it) should be uncommented.
// ========================================================================

/*
notification apager sample_alpha_pager {
   phone:="9,555-1212";
   pin:="101565";
}
*/

script Pagers {
/*
   function forward_apager() {
      if ($CurrentTrapSource = "SCCS" or $CurrentTrapSource = "CALL_PILOT") {
      send( sample_alpha_pager, $CurrentTrapSource,":", $AlarmCode, "!" );
       }
   else {
   send( sample_alpha_pager, $CurrentTrapSource,":", $ErrorCode, "!" );
     }
     }

     rule forward_apager_critical {
     if ($NormalizedSeverity = Critical ) {
     forward_apager();
     }
  }
*/
}


//
*************************************************************************************************************
//                            Forwarding Received Traps as OTM Traps to an Optivity server
//
*************************************************************************************************************

// ============================================
//          Define SNMP Notifications
// ============================================
notification snmp OtmOpenAlarm1 {
   address:="134.177.121.71";
   trap:="6.1";                  // Critical
}
notification snmp OtmOpenAlarm2 {
   address:="134.177.121.71";
   trap:="6.2";                  // Major
}
notification snmp OtmOpenAlarm3 {
```

```
   address:="134.177.121.71";
   trap:="6.3";                  // Minor
}
notification snmp OtmOpenAlarm4 {
   address:="134.177.121.71";
   trap:="6.4";                  // Warning
}
notification snmp OtmOpenAlarm5 {
   address:="134.177.121.71";
   trap:="6.5";                  // Info
}
notification snmp OtmOpenAlarm6 {
   address:="134.177.121.71";
   trap:="6.6";                  // Clear
}

// ================================================================================================================
//                                        Forward Alarms Script
// ================================================================================================================

script ForwardAlarms {

     // ---------------------------------------
     //      Forward Critical Alarms
     // ---------------------------------------
     function forwardCriticals() {
     if ( $CurrentTrapDevice = "OTM" ) {
               send( OtmOpenAlarm1,
                    "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
                    "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
                    "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
                    "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name Space
                    "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
                    "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
                    "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,              // System
                    "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
                    "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,    // Originating Agent
                    "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
                    "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
                    "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
                    "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          // Problem Isolation Data2
                    "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 // Problem Isolation Data3
               );
          }else{ if ( $CurrentTrapDevice = "Meridian1"
               or $CurrentTrapDevice = "MMCS"
               or $CurrentTrapDevice = "CALL_SERVER" )
           {
               send( OtmOpenAlarm1,
                    "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
                    "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date And Time
                    "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
                    "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm ,               // Name Space
                    "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
                    "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
                    "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,    // System
                    "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
                    "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
                    "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
                    "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
                    "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
                    "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          // Problem Isolation Data2
                    "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 // Problem Isolation Data3
               );
          }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
               or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
               or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or $CurrentTrapDevice = "MMCS_AP"
               or $CurrentTrapDevice = "MEDIA_CARD" or $CurrentTrapDevice = "SIGNALLING_SERVER" )
```

```
{
     send( OtmOpenAlarm1,
          "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
          "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
          "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
          "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
          "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
          "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
          "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
          "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
          "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
          "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
          "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
          "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
          "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 // Problem Isolation Data2
          "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  // Problem Isolation Data3
     );
}else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
     send( OtmOpenAlarm1,
          "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
          "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
          "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
          "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
          "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                 // Error Code
          "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
          "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
          "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
          "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
          "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
          "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
          "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
          "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 // Problem Isolation Data2
          "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  // Problem Isolation Data3
     );
}else{ if ( $CurrentTrapDevice = "MMAIL" ) {
     send( OtmOpenAlarm1,
          "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                    // Alarm's Seq Number
          "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
          "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
          "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
          "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
          "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
          "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
          "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
          "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
          "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
          "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
          "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
          "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                // Problem Isolation Data2
          "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           // Problem Isolation Data3
     );
}else{ if ($CurrentTrapDevice = "SL100" ) {
     send( OtmOpenAlarm1,
          "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                    // Alarm's Seq Number
          "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
          "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
          "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
          "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
          "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
          "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
          "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
          "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
          "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
          "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
          "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
          "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                // Problem Isolation Data2
          "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           // Problem Isolation Data3
     );
}}}}}}
```

```
}

rule forward_criticals {
     if ( $NormalizedSeverity = Critical ) {
          forwardCriticals();
     }
}

// ---------------------------------------
//         Forward Major Alarms
// ---------------------------------------
function forwardMajors() {
     if ( $CurrentTrapDevice = "OTM" ) {
          send( OtmOpenAlarm2,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,          // Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,           // Date and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,   // Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,            // Name Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,            // Error Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                 // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,               // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,      // System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,     // Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,             // Trap Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,            // Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,         // Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,           // Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                  // Problem Isolation Data3
          );
     }else{ if ( $CurrentTrapDevice = "Meridian1"
          or $CurrentTrapDevice = "MMCS"
          or $CurrentTrapDevice = "CALL_SERVER" )
      {
          send( OtmOpenAlarm2,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,          // Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,           // Date And Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,   // Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                 // Name Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,            // Error Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                 // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,     // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,      // System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,    // Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,             // Trap Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,            // Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,         // Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,           // Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                  // Problem Isolation Data3
          );
     }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
          or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
          or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or $CurrentTrapDevice = "MMCS_AP"
          or $CurrentTrapDevice = "MEDIA_CARD" or $CurrentTrapDevice = "SIGNALLING_SERVER" )
     {
          send( OtmOpenAlarm2,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,          // Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,           // Date and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,   // Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                 // Name Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,            // Error Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                 // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                  // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,      // System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,    // Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,             // Trap Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,            // Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,         // Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                  // Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                   // Problem Isolation Data3
          );
```

```
        }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
             send( OtmOpenAlarm2,
                  "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
                  "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
                  "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
                  "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
                  "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                 // Error Code
                  "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
                  "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
                  "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
                  "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
                  "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
                  "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
                  "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
                  "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 // Problem Isolation Data2
                  "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  // Problem Isolation Data3
             );
        }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
             send( OtmOpenAlarm2,
                  "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                    // Alarm's Seq Number
                  "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
                  "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
                  "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
                  "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
                  "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
                  "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
                  "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
                  "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
                  "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
                  "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
                  "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
                  "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                // Problem Isolation Data2
                  "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           // Problem Isolation Data3
             );
             }else{ if ( $CurrentTrapDevice = "SL100" ) {
             send( OtmOpenAlarm2,
                  "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                    // Alarm's Seq Number
                  "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
                  "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
                  "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
                  "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
                  "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
                  "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
                  "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
                  "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
                  "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
                  "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
                  "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
                  "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                // Problem Isolation Data2
                  "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           // Problem Isolation Data3
             );
        }}}}}}
}

rule forward_majors {
     if ( $NormalizedSeverity = Major ) {
          forwardMajors();
     }
}
```

```
// ---------------------------------------
//         Forward Minor Alarms
// ---------------------------------------
function forwardMinors() {
if ( $CurrentTrapDevice = "OTM" ) {
          send( OtmOpenAlarm3,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,              // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,    // Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          // Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 // Problem Isolation Data3
          );
     }else{ if ( $CurrentTrapDevice = "Meridian1"
          or $CurrentTrapDevice = "MMCS"
          or $CurrentTrapDevice = "CALL_SERVER" )
      {
          send( OtmOpenAlarm3,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date And Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,    // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          // Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 // Problem Isolation Data3
          );
     }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
          or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
          or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or $CurrentTrapDevice = "MMCS_AP"
          or $CurrentTrapDevice = "MEDIA_CARD" or $CurrentTrapDevice = "SIGNALLING_SERVER" )
     {
          send( OtmOpenAlarm3,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 // Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  // Problem Isolation Data3
          );
```

```
    }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
        send( OtmOpenAlarm3,
            "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
            "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
            "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
            "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
            "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                 // Error Code
            "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
            "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
            "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
            "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
            "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
            "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
            "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
            "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 // Problem Isolation Data2
            "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  // Problem Isolation Data3
        );
    }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
        send( OtmOpenAlarm3,
            "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                    // Alarm's Seq Number
            "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
            "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
            "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
            "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
            "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
            "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
            "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
            "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
            "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
            "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
            "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
            "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                // Problem Isolation Data2
            "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           // Problem Isolation Data3
        );
        }else{ if ( $CurrentTrapDevice = "SL100" ) {
        send( OtmOpenAlarm3,
            "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                    // Alarm's Seq Number
            "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
            "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
            "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
            "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
            "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
            "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
            "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
            "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
            "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
            "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
            "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
            "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                // Problem Isolation Data2
            "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           // Problem Isolation Data3
        );
    }}}}}}
}

rule forward_minors {
    if ( $NormalizedSeverity = Minor ) {
        forwardMinors();
    }
}
```

```
// ---------------------------------------
//         Forward Warning Alarms
// ---------------------------------------
function forwardWarnings() {
if ( $CurrentTrapDevice = "OTM" ) {
          send( OtmOpenAlarm4,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,              // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,    // Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          // Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 // Problem Isolation Data3
          );
     }else{ if ( $CurrentTrapDevice = "Meridian1"
          or $CurrentTrapDevice = "MMCS"
          or $CurrentTrapDevice = "CALL_SERVER" )
      {
          send( OtmOpenAlarm4,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date And Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                //  Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,    // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          // Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 // Problem Isolation Data3
          );
     }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
          or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
          or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or $CurrentTrapDevice = "MMCS_AP"
          or $CurrentTrapDevice = "MEDIA_CARD" or $CurrentTrapDevice = "SIGNALLING_SERVER" )
     {
          send( OtmOpenAlarm4,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 // Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  // Problem Isolation Data3
          );
```

```
        }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
             send( OtmOpenAlarm4,
                  "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
                  "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
                  "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
                  "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
                  "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                 // Error Code
                  "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
                  "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
                  "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
                  "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
                  "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
                  "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
                  "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
                  "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 // Problem Isolation Data2
                  "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  // Problem Isolation Data3
             );
        }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
             send( OtmOpenAlarm4,
                  "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                    // Alarm's Seq Number
                  "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
                  "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
                  "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
                  "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
                  "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
                  "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
                  "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
                  "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
                  "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
                  "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
                  "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
                  "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                // Problem Isolation Data2
                  "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           // Problem Isolation Data3
             );
             }else{ if ( $CurrentTrapDevice = "SL100" ) {
             send( OtmOpenAlarm4,
                  "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                    // Alarm's Seq Number
                  "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
                  "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
                  "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
                  "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
                  "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
                  "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
                  "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
                  "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
                  "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
                  "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
                  "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
                  "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                // Problem Isolation Data2
                  "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           // Problem Isolation Data3
             );
        }}}}}}
}

rule forward_warnings {
     if ( $NormalizedSeverity = Warning ) {
          forwardWarnings();
     }
}
```

```
// ---------------------------------------
//         Forward Info Alarms
// ---------------------------------------
function forwardInfos() {
     if ( $CurrentTrapDevice = "OTM" ) {
          send( OtmOpenAlarm5,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,           // Name Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,              // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,    // Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          // Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 // Problem Isolation Data3
          );
     }else{ if ( $CurrentTrapDevice = "Meridian1"
          or $CurrentTrapDevice = "MMCS"
          or $CurrentTrapDevice = "CALL_SERVER" )
      {
          send( OtmOpenAlarm5,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date And Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                //  Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,    // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,          // Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                 // Problem Isolation Data3
          );
     }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
          or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
          or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or $CurrentTrapDevice = "MMCS_AP"
          or $CurrentTrapDevice = "MEDIA_CARD" or $CurrentTrapDevice = "SIGNALLING_SERVER" )
     {
          send( OtmOpenAlarm5,
               "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
               "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
               "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
               "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
               "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
               "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
               "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
               "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
               "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
               "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
               "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
               "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
               "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 // Problem Isolation Data2
               "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  // Problem Isolation Data3
          );
```

```
        }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
            send( OtmOpenAlarm5,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
                "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
                "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                 // Error Code
                "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
                "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                 // Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                  // Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
            send( OtmOpenAlarm5,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                    // Alarm's Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
                "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
                "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
                "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                //  Site
                "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
                "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                // Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           // Problem Isolation Data3
            );
            }else{ if ( $CurrentTrapDevice = "SL100" ) {
            send( OtmOpenAlarm5,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                    // Alarm's Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
                "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,                // Name Space
                "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,           // Error Code
                "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,                // Site
                "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                 // System
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,     // System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,   // Originating Agent
                "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,            // Trap Type
                "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,           // Associated User
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,        // Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                // Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData           // Problem Isolation Data3
            );
        }}}}}}
    }

    rule forward_infos {
        if ( $NormalizedSeverity = Info ) {
            forwardInfos();
        }
    }
} // end script ForwardAlarms}
```

Sample Alarm Wizard script file

The content of the file *sample_wizard_script.txt* appears below:

```
/*

   This script file was generated using the OTM-M script wizard

   WARNING : DO NOT EDIT THIS FILE MANUALY, THE WIZARD WOULD
   NOT BE ABLE TO HANDLE IT ANY MORE.

*/
///start
/* Global Severity levels definition based on Meridian1 alarms */

counter Undetermined    := 0;
counter Critical        := 1;
counter Major           := 2;
counter Minor           := 3;
counter Warning         := 4;
counter Info            := 5;
counter Cleared         := 6;
counter Unknown         := 7;

/* $NormalizedSeverity is a global severity value that is normalized to OTM severity values.
   It represents the unified value across different devices. */
counter $NormalizedSeverity   := 0;



/*   This script assign the global variable $NormalizedSeverity
     with the value of $AlarmServerity when current trap device
     is of OTM type. */

script AssignOTMSeverities when ($CurrentTrapDevice="OTM")
{
     function assignit()
     {
          //send(con, "$AlarmServerity=", $AlarmSeverity);
          if ($Severity=Critical)
          {
               $NormalizedSeverity:=Critical;
          }
          else
          {
               if ($Severity=Major)
               {
                    $NormalizedSeverity:=Major;
               }
               else
               {
                    if ($Severity=Minor)
                    {
                         $NormalizedSeverity:=Minor;
                    }
                    else
                    {
                         if ($Severity=Info)
                         {
                              $NormalizedSeverity:=Info;
                         }
                         else
                         {
                              if ($Severity=Unknown)
                              {
                                   $NormalizedSeverity:=Unknown;
                              }
                              else
```

```
                              {
                                   if ($Severity=Warning)
                                   {
                                        $NormalizedSeverity:=Warning;
                                   }
                                   else
                                   {
                                        if ($Severity=Cleared)
                                        {
                                             $NormalizedSeverity:=Cleared;
                                        }
                                        else
                                        {
                                             $NormalizedSeverity:=Undetermined;
                                        }
                                   }
                              }
                         }
                    }
               }
          }

     rule assign_severity {
          if ($CurrentTrapDevice="OTM")
          {
               assignit();
          }
     }

} // end script AssignOTMSeverities

// All MDECT Alarms should be Critical

script AssignMDECTSeverities when ($CurrentTrapDevice = "MDECT")
{
  function assignit()
  {
    $NormalizedSeverity := Critical;
  }

  rule assign_severity
  {
    if ($CurrentTrapDevice = "MDECT")
    {
      assignit();
    }
  }
}


script convertSeverities when ($CurrentTrapDevice != "OTM"
      and $CurrentTrapDevice != "Meridian1"
      and $CurrentTrapDevice != "CALL_SERVER"  and $CurrentTrapDevice != "MMCS"
      and $CurrentTrapDevice != "MDECT")
{
     function convertit()
     {
          //send(con, "$AlarmServerity=", $AlarmSeverity);
          if ($Severity=1)
          {
               $NormalizedSeverity:=Critical;
          }
          else
          {
               if ($Severity=2)
               {
                    $NormalizedSeverity:=Major;
               }
               else
               {
```

```
                if ($Severity=3)
                {
                     $NormalizedSeverity:=Minor;
                }
                else
                {
                     if ($Severity=4)
                     {
                          if ($CurrentTrapDevice="CALL_PILOT")
                          {
                               $NormalizedSeverity:=Info;
                          }
                          else
                          {
                               $NormalizedSeverity:=Warning;
                          }
                     }
                     else
                     {
                          if ($Severity=5)
                          {
                               if ($CurrentTrapDevice="CALL_PILOT")
                               {
                                    $NormalizedSeverity:=Unknown;
                               }
                               else
                               {
                                    $NormalizedSeverity:=Cleared;
                               }
                          }
                          else
                          {
                               $NormalizedSeverity:=Undetermined;
                          }
                     }
                }
           }
      }

  rule severity_conversion
  {
    if ($CurrentTrapDevice != "OTM" and $CurrentTrapDevice != "Meridian1"
          and $CurrentTrapDevice != "CALL_SERVER"
          and $CurrentTrapDevice != "MMCS" and $CurrentTrapDevice != "MDECT" )
    {
      convertit();
    }
  }

} // end script convertSeverities


script convertM1Severities when ($CurrentTrapDevice="Meridian1" or $CurrentTrapDevice="CALL_SERVER" or
$CurrentTrapDevice="MMCS")
{
     function convertit()
     {
          //send(con, "$AlarmServerity=", $AlarmSeverity);
          if ($Severity=1)
          {
               $NormalizedSeverity:=Minor;
          }
          else
          {
               if ($Severity=2)
               {
                    $NormalizedSeverity:=Major;
               }
               else
               {
```

```
                if ($Severity=3)
                {
                     $NormalizedSeverity:=Critical;
                }
                else
                {
                     if ($Severity=4)
                     {
                          $NormalizedSeverity:=Unknown;
                     }
                     else
                     {
                          if ($Severity=5)
                          {
                               $NormalizedSeverity:=Warning;
                          }
                          else
                          {
                               if ($Severity=6)
                               {
                                    $NormalizedSeverity:=Cleared;
                               }
                               else
                               {
                                    if ($Severity=7)
                                    {
                                         $NormalizedSeverity:=Undetermined;
                                    }
                                    else
                                    {
                                         $NormalizedSeverity:=Info;
                                    }
                               }
                          }
                     }
                }
           }
      }
 }

 rule severity_conversion {
      if ($CurrentTrapDevice="Meridian1" or $CurrentTrapDevice="CALL_SERVER" or $CurrentTrapDevice="MMCS")
      {
           convertit();
      }
 }

} // end script convertM1Severities

// ********************************************************************************************
//                                  Assign $NameSpace
// ********************************************************************************************

counter nsOtm           := 1; // Originated from an OTM
counter nsMeridian1     := 2;
counter nsCallPilot     := 3;
counter nsMeridianMail  := 4;
counter nsSl100         := 5;
counter nsPassport      := 6;
counter nsItg           := 7;
counter nsBravo         := 8;
counter nsIss7          := 9;
counter nsMDECT         := 10;
counter nsCallServer    := 11;
counter nsMediaCard     := 12;
counter nsSigServer     := 13;
counter nsSccs          := 14;
counter nsMeridianMailLink  := 15;
counter nsGenericOrUnknown  := 16;
```

```
script assignNameSpace {

     function ns() {
          if ($CurrentTrapDevice="OTM") {
               // Original $CurrentTrapDevice is retained
          }else{ if ( $CurrentTrapDevice = "Meridian1") {
               $NameSpace := nsMeridian1;
          }else{ if ( $CurrentTrapDevice = "CALL_PILOT" ) {
               $NameSpace := nsCallPilot;
          }else{ if ( $CurrentTrapDevice = "MMCS" ) {
               $NameSpace := nsMeridianMail;
          }else{ if ( $CurrentTrapDevice = "ITG"
               or $CurrentTrapDevice = "ITG_ISDN_TRK"
               or $CurrentTrapDevice = "ITG_IP_LINE"
               or $CurrentTrapDevice = "ITG_IP_PHONE" )
          {
               $NameSpace := nsItg;
          }else{ if ( $CurrentTrapDevice = "BRAVO" ) {
               $NameSpace := nsBravo;
          }else{ if ( $CurrentTrapDevice = "ISS7" ) {
               $NameSpace := nsIss7;
          }else{ if ( $CurrentTrapDevice = "MDECT" ) {
               $NameSpace := nsMDECT;
          }else{ if ( $CurrentTrapDevice = "SCCS" ) {
               $NameSpace := nsSccs;
          }else{ if ( $CurrentTrapDevice = "CALL_SERVER" ) {
               $NameSpace := nsCallServer;
          }else{ if ( $CurrentTrapDevice = "MEDIA_CARD" ) {
               $NameSpace := nsMediaCard;
          }else{ if ( $CurrentTrapDevice = "SIGNALLING_SERVER" ) {
               $NameSpace := nsSigServer;
          }else{
               $NameSpace := nsGenericOrUnknown;
          }}}}}}}}}}}}}
     }

     rule ns1 {
          if (1) {
           ns();
          }
     }
}

///end

/* Email notification definition */
  notification email ne_samplemail {
    from:="test@company.com";
    address:="name@company.com";
    server:="0.0.0.0";
 }

/* Email notification definition */
  notification email ne_serge {
    from:="xyz@company.com";
    address:="serge@company.com";
    server:="15.12.2.3";
 }

/* Email notification definition */
  notification email ne_adrien {
    from:="xyz@company.com";
    address:="x@company.com";
    server:="47.82.32.184";
 }


/* Numeric pager notification definition */
  notification npager nn_samplenpag {
    phone:="9,555-555-5555";
 }
```

```
/* Alphanumeric pager notification definition */
  notification apager na_sampleapag {
    phone:="9,555-555-5555";
    pin:="0000";
  }


/* Up-stream manager notification definition */
  notification snmp ns_samplesnmp {
    address:="114.21.25.149";
    trap:="6.10";
  }


/* Modem notification definition */
  notification modem nm_samplemodm {
    phone:="9,555-555-5555";
 }


/* File notification definition */
  notification file nf_samplefile {
    filename:="c:\otm_log.txt";
 }



/* Script definition */
script GeneratedScript {

  /* Notification Counters definition */
    counter count_ne_samplemail := 0;
    counter count_ne_serge := 0;
    counter count_ne_adrien := 0;
    counter count_nn_samplenpag := 0;
    counter count_na_sampleapag := 0;
    counter count_ns_samplesnmp := 0;
    counter count_ns_samplesnmp_BRAVO := 0;
    counter count_ns_samplesnmp_BS450 := 0;
    counter count_ns_samplesnmp_CALL_PILOT := 0;
    counter count_ns_samplesnmp_ISS7 := 0;
    counter count_ns_samplesnmp_ITG := 0;
    counter count_ns_samplesnmp_ITG_ISDN_TRK := 0;
    counter count_ns_samplesnmp_ITG_IP_LINE := 0;
    counter count_ns_samplesnmp_ITG_IP_PHONE := 0;
    counter count_ns_samplesnmp_MDECT := 0;
    counter count_ns_samplesnmp_Meridian1 := 0;
    counter count_ns_samplesnmp_CALL_SERVER := 0;
    counter count_ns_samplesnmp_MEDIA_CARD := 0;
    counter count_ns_samplesnmp_SIGNALLING_SERVER := 0;
    counter count_ns_samplesnmp_MMAIL := 0;
    counter count_ns_samplesnmp_MMCS := 0;
    counter count_ns_samplesnmp_MMCS_AP := 0;
    counter count_ns_samplesnmp_OTM := 0;
    counter count_ns_samplesnmp_SCCS := 0;
    counter count_ns_samplesnmp_SL100 := 0;
    counter count_nm_samplemodm := 0;
    counter count_nf_samplefile := 0;

  /* Severity levels definitions already defined as global counters */

  /* Function to get Severity level understandable */
    function string AlarmLevelToString (counter level) {
        string result;
        if (level=Minor) {
            result := "Minor";
        } else {
            if (level=Major) {
                result := "Major";
```

```
          } else {
              if (level=Critical) {
                  result := "Critical";
              } else {
                  if (level=Unknown) {
                      result := "Unknown";
                  } else {
                      if (level=Warning) {
                          result := "Warning";
                      } else {
                          if (level=Cleared) {
                              result := "Cleared";
                          } else {
                            if (level=Info) {
                               result := "Info";
                            } else {
                                result := "Undetermined";
                            }
                          }
                      }
                  }
              }
          }
       }
       return(result);
   }

/* Function(s) definition */
  function counter fn_ne_samplemail (counter n) {
    string severity_level;
    severity_level := AlarmLevelToString($NormalizedSeverity);
    n:=n+1;
    if (n=3) {
       if (
        (    ($CurrentTrapDevice="SCCS")
        )
          or (($CurrentTrapDevice="CALL_PILOT")
          )
        ) {
       send(ne_samplemail,
                  $DeviceTime,": Device ",$CurrentTrapSource,
                  " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                  " trap with severity level: ",severity_level,", AlarmCode: ", $AlarmCode,
                          ", OperatorData: ",$OperatorData, ".");
       n:=0;
       }
       else {
        send(ne_samplemail,
                  $DeviceTime,": Device ",$CurrentTrapSource,
                  " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                  " trap with severity level: ",severity_level,", ErrorCode: ", $ErrorCode,
                          ", OperatorData: ",$OperatorData, ".");
       n:=0;
       }
     }
    return(n);
 }

  function counter fn_ne_serge (counter n) {
    string severity_level;
    severity_level := AlarmLevelToString($NormalizedSeverity);
    n:=n+1;
    if (n=2) {
       if (
        (    ($CurrentTrapDevice="SCCS")
        )
          or (($CurrentTrapDevice="CALL_PILOT")
          )
        ) {
       send(ne_serge,
                  $DeviceTime,": Device ",$CurrentTrapSource,
```

```
                " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                " trap with severity level: ",severity_level,", AlarmCode: ", $AlarmCode,
                        ", OperatorData: ",$OperatorData, ".");
      n:=0;
      }
      else {
       send(ne_serge,
                $DeviceTime,": Device ",$CurrentTrapSource,
                " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                " trap with severity level: ",severity_level,", ErrorCode: ", $ErrorCode,
                        ", OperatorData: ",$OperatorData, ".");
      n:=0;
      }
    }
   return(n);
}

 function counter fn_ne_adrien (counter n) {
   string severity_level;
   severity_level := AlarmLevelToString($NormalizedSeverity);
   n:=n+1;
   if (n=1) {
      if (
       (    ($CurrentTrapDevice="SCCS")
       )
          or (($CurrentTrapDevice="CALL_PILOT")
          )
       ) {
      send(ne_adrien,
                $DeviceTime,": Device ",$CurrentTrapSource,
                " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                " trap with severity level: ",severity_level,", AlarmCode: ", $AlarmCode,
                        ", OperatorData: ",$OperatorData, ".");
      n:=0;
      }
      else {
       send(ne_adrien,
                $DeviceTime,": Device ",$CurrentTrapSource,
                " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                " trap with severity level: ",severity_level,", ErrorCode: ", $ErrorCode,
                        ", OperatorData: ",$OperatorData, ".");
      n:=0;
      }
    }
   return(n);
}

 function counter fn_nn_samplenpag (counter n) {
   n:=n+1;
   if (n=1) {
      send(nn_samplenpag,"12345");
      n:=0;
    }
   return(n);
}

 function counter fn_na_sampleapag (counter n) {
   string severity_level;
   severity_level := AlarmLevelToString($NormalizedSeverity);
   n:=n+1;
   if (n=1) {
      send(na_sampleapag,
                $CurrentTrapSource," : ",severity_level," ",
                $CurrentTrapMajor,".",$CurrentTrapMinor);
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_BRAVO (counter n) {
   n:=n+1;
```

```
   if (n=3) {
      send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_BS450 (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
          "1.3.6.1.2.1.2.2.1.1.1","Integer",$Port1,
              "1.3.6.1.2.1.2.2.1.1.2","Integer",$Port2,
              "1.3.6.1.2.1.2.2.1.1.3","Integer",$Port3,
              "1.3.6.1.2.1.2.2.1.1.4","Integer",$Port4,
              "1.3.6.1.2.1.2.2.1.1.5","Integer",$Port5,
              "1.3.6.1.2.1.2.2.1.1.6","Integer",$Port6,
              "1.3.6.1.2.1.2.2.1.1.7","Integer",$Port7,
              "1.3.6.1.2.1.2.2.1.1.8","Integer",$Port8,
              "1.3.6.1.2.1.2.2.1.1.9","Integer",$Port9,
              "1.3.6.1.2.1.2.2.1.1.10","Integer",$Port10,
              "1.3.6.1.2.1.2.2.1.1.11","Integer",$Port11,
              "1.3.6.1.2.1.2.2.1.1.12","Integer",$Port12,
              "1.3.6.1.2.1.2.2.1.1.13","Integer",$Port13,
              "1.3.6.1.2.1.2.2.1.1.14","Integer",$Port14,
              "1.3.6.1.2.1.2.2.1.1.15","Integer",$Port15,
              "1.3.6.1.2.1.2.2.1.1.16","Integer",$Port16,
              "1.3.6.1.2.1.2.2.1.1.17","Integer",$Port17,
              "1.3.6.1.2.1.2.2.1.1.18","Integer",$Port18,
              "1.3.6.1.2.1.2.2.1.1.19","Integer",$Port19,
              "1.3.6.1.2.1.2.2.1.1.20","Integer",$Port20,
              "1.3.6.1.2.1.2.2.1.1.21","Integer",$Port21,
              "1.3.6.1.2.1.2.2.1.1.22","Integer",$Port22,
              "1.3.6.1.2.1.2.2.1.1.23","Integer",$Port23,
              "1.3.6.1.2.1.2.2.1.1.24","Integer",$Port24);
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_CALL_PILOT (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
```

```
        "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
       n:=0;
     }
    return(n);
}

 function counter fn_ns_samplesnmp_ISS7 (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_ITG (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_ITG_ISDN_TRK (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
      n:=0;
```

```
    }
   return(n);
}

function counter fn_ns_samplesnmp_ITG_IP_LINE (counter n) {
  n:=n+1;
  if (n=3) {
     send(ns_samplesnmp,
      "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
      "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
      "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
      "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
      "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
      "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
      "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
      "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
      "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
      "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
      "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
      "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
      "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
      "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
     n:=0;
   }
  return(n);
}

function counter fn_ns_samplesnmp_ITG_IP_PHONE (counter n) {
  n:=n+1;
  if (n=3) {
     send(ns_samplesnmp,
      "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
      "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
      "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
      "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
      "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
      "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
      "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
      "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
      "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
      "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
      "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
      "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
      "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
      "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
     n:=0;
   }
  return(n);
}

function counter fn_ns_samplesnmp_MDECT (counter n) {
  n:=n+1;
  if (n=3) {
     send(ns_samplesnmp,
            "1.3.6.1.4.1.1417.1.1.1.5.0",     "OctetString", $DeviceTime,
           "1.3.6.1.4.1.1417.1.1.3.2.1.2.0", "OctetString", $OperatorData,
           "1.3.6.1.4.1.1417.1.1.3.3.1.4.0", "OctetString", $OperatorData,
           "1.3.6.1.4.1.1417.1.1.3.3.1.8.0", "OctetString", $OperatorData,
           "1.3.6.1.4.1.1417.1.1.3.9.0",     "OctetString", $OperatorData,
           "1.3.6.1.4.1.1417.1.1.3.5.1.0",   "OctetString", $OperatorData,
           "1.3.6.1.4.1.1417.1.1.3.7.0",     "OctetString", $OperatorData,
           "1.3.6.1.4.1.1417.1.1.2.1.6.0",   "OctetString", $OperatorData,
           "1.3.6.1.4.1.1417.1.1.3.1.0",     "OctetString", $ErrorCode);
     n:=0;
   }
  return(n);
}
```

```
 function counter fn_ns_samplesnmp_Meridian1 (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text);
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_CALL_SERVER (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text);
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_MEDIA_CARD (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
      n:=0;
    }
   return(n);
}
```

```
function counter fn_ns_samplesnmp_SIGNALLING_SERVER (counter n) {
  n:=n+1;
  if (n=3) {
     send(ns_samplesnmp,
      "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
      "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
      "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
      "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
      "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
      "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
      "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
      "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
      "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
      "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
      "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
      "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
      "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
      "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
     n:=0;
   }
  return(n);
}

function counter fn_ns_samplesnmp_MMAIL (counter n) {
  n:=n+1;
  if (n=3) {
     send(ns_samplesnmp,
      "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
      "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
      "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
      "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
      "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
      "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
      "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
      "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
      "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
      "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
      "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
      "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
      "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,
      "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData);
     n:=0;
   }
  return(n);
}

function counter fn_ns_samplesnmp_MMCS (counter n) {
  n:=n+1;
  if (n=3) {
     send(ns_samplesnmp,
      "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
      "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
      "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
      "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
      "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
      "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
      "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,
      "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
      "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
      "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
      "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
      "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
      "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,
      "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text);
     n:=0;
   }
  return(n);
}
```

```
 function counter fn_ns_samplesnmp_MMCS_AP (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_OTM (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     $NameSpace,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text);
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_SCCS (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
       "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
       "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
       "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
       "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
       "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
       "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
       "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,
       "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
       "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
       "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
       "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",
       "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na");
      n:=0;
    }
   return(n);
}
```

```
 function counter fn_ns_samplesnmp_SL100 (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
          "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,
             "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,
             "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,
             "1.3.6.1.4.1.562.50.1.2.4.0",  "Integer",     nsOtm,
             "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,
             "1.3.6.1.4.1.562.50.1.2.6.0",  "OctetString", $Site,
             "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,
             "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,
             "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,
           "1.3.6.1.4.1.562.50.1.2.10.0", "Integer",     $TrapType,
           "1.3.6.1.4.1.562.50.1.2.11.0", "OctetString", $AssocUser,
             "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,
             "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,
             "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text);
      n:=0;
    }
   return(n);
}

 function counter fn_nm_samplemodm (counter n) {
   string severity_level;
   severity_level := AlarmLevelToString($NormalizedSeverity);
   n:=n+1;
   if (n=1) {
      if (
      (    ($CurrentTrapDevice="SCCS")
      )
         or (($CurrentTrapDevice="CALL_PILOT")
         )
       ) {
      send(nm_samplemodm,
                $DeviceTime,": Device ",$CurrentTrapSource,
                " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                " trap with severity level: ",severity_level,", AlarmCode: ", $AlarmCode,
                        ", OperatorData: ",$OperatorData, ".");
      n:=0;
      }
      else {
       send(nm_samplemodm,
                $DeviceTime,": Device ",$CurrentTrapSource,
                " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                " trap with severity level: ",severity_level,", ErrorCode: ", $ErrorCode,
                        ", OperatorData: ",$OperatorData, ".");
      n:=0;
      }
    }
   return(n);
}

 function counter fn_nf_samplefile (counter n) {
   string severity_level;
   severity_level := AlarmLevelToString($NormalizedSeverity);
   n:=n+1;
   if (n=1) {
      if (
      (    ($CurrentTrapDevice="SCCS")
      )
         or (($CurrentTrapDevice="CALL_PILOT")
         )
       ) {
      send(nf_samplefile,
                $CurrentPCTime,": Device ",$CurrentTrapSource,
                " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                " trap at ",$DeviceTime," with severity level: ",severity_level,", AlarmCode: ", $AlarmCode,
                        ", OperatorData: ",$OperatorData, ".");
      n:=0;
      }
```

```
        else {
         send(nf_samplefile,
                   $CurrentPCTime,": Device ",$CurrentTrapSource,
                   " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                   " trap at ",$DeviceTime," with severity level: ",severity_level,", ErrorCode: ", $ErrorCode,
                           ", OperatorData: ",$OperatorData, ".");
        n:=0;
        }
      }
     return(n);
   }


  /* Rule definition */
    rule r_samplerul2 {
      if (
                (    ($CurrentTrapDevice="ITG")
                )
        ) {
          count_nf_samplefile:=fn_nf_samplefile(count_nf_samplefile);
      }
      else {
      }
    }

  /* Rule definition */
    rule r_simplesamp {
      if (
                (    ($CurrentTrapDevice="Meridian1")
                )
          and (    ($NormalizedSeverity=Critical)
                )
        ) {
          count_ne_adrien:=fn_ne_adrien(count_ne_adrien);
          count_nf_samplefile:=fn_nf_samplefile(count_nf_samplefile);
      }
      else {
      }
    }

  /* Rule definition */
    rule r_samrulecs {
      if (
                (    ($CurrentTrapDevice="CALL_SERVER")
                )
        ) {
          count_ne_adrien:=fn_ne_adrien(count_ne_adrien);
      }
      else {
      }
    }

} /* End of GeneratedScript script */


/* End of file */
```

Index

A

B

C

D

E

F

G

H

I

K

L

M

N

O

P

Q

R

S

T

U

V

W

X