

Require correct settings for ifcfg script for a /31 RFC3021 network connection

SOLUTION VERIFIED - Updated October 24 2019 at 6:18 AM - [English](#)

Environment

- Red Hat Enterprise Linux (RHEL) 8
- Red Hat Enterprise Linux (RHEL) 7
- Red Hat Enterprise Linux (RHEL) 6
- Red Hat Enterprise Linux (RHEL) 5

Issue

- Unable to find assistance in creating a persistent point to point connection using a /31 network (see RFC 3021)
- Unable to use RFC3021 31-bit netmask in networking

Resolution

Ensure that the IP addresses assigned to both interfaces are in the same /31 network.

On RHEL 8, install the `network-scripts` package:

```
yum install network-scripts
```

Configure the address with the appropriate prefix, and a broadcast address outside the subnet, eg:

```
IPADDR=192.168.0.2
PREFIX=31
BROADCAST=192.168.0.255
```

NetworkManager is not capable of this as of RHEL 8.0, so either disable it entirely and use the network initscript:

```
systemctl stop NetworkManager
systemctl disable NetworkManager
chkconfig network on
service network start
```

or alternately, disable NetworkManager just for the interface in question:

```
NM_CONTROLLED=no
```

Root Cause

The IP addresses assigned to the interfaces were in different /31 networks:

```
192.168.0.2/31
192.168.0.1/31
```

They would need to be changed to either of the below sets:

```
192.168.0.0/31
192.168.0.1/31
```

Or

```
192.168.0.2/31
192.168.0.3/31
```

From [RFC 3021](#):

```
Using a 31-bit prefix length leaves only two numbering possibilities (see Section 2.1), eliminating the use of a directed broadcast to the link (see Section 2.2.1). The limited broadcast MUST be used for all broadcast traffic on a point-to-point link with a 31-bit subnet mask assigned to it.
```

Product(s) [Red Hat Enterprise Linux](#) **Component** [initscripts](#) [NetworkManager](#) **Tags** [configuration](#) [network](#) [rhel](#)

This solution is part of Red Hat's fast-track publication program, providing a huge library of solutions that Red Hat engineers have created while supporting our customers. To give you the knowledge you need the instant it becomes available, these articles may be presented in a raw and unedited form.

People who viewed this solution also viewed

Does NetworkManager support RFC 3021 31-bit point-to-point links?

Solution - Apr 28, 2020

Is BROADCAST and NETWORK necessary in ifcfg-*?

Solution - Jan 9, 2014

Can I completely prevent my NIC from generating broadcast traffic?

Solution - May 29, 2014

Comments



NEWBIE
4 Points

SUBMIT COMMENT

[Formatting Help](#)



QUICK LINKS

- Downloads
- Subscriptions
- Support Cases
- Customer Service
- Product Documentation

HELP

- Contact Us
- Customer Portal FAQ
- Log-in Assistance

SITE INFO

- Trust Red Hat
- Browser Support Policy
- Accessibility
- Awards and Recognition
- Colophon

RELATED SITES

- redhat.com
- developers.redhat.com
- connect.redhat.com
- cloud.redhat.com

ABOUT

- Red Hat Subscription Value
- About Red Hat
- Red Hat Jobs

