

Lenovo RackSwitch G8296

# Release Notes

For Networking OS 8.2

**Lenovo**<sup>TM</sup>

**Note:** Before using this information and the product it supports, read the general information in the *Safety information and Environmental Notices and User Guide* documents on the *Lenovo Documentation CD* and the *Warranty Information* document that comes with the product.

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## Release Notes

This release supplement provides the latest information regarding Lenovo Network Operating System 8.2 for the Lenovo RackSwitch G8296 (referred to as G8296 throughout this document).

This supplement modifies and extends the following Networking OS documentation for use with N/OS 8.2:

- *Lenovo RackSwitch G8296 Application Guide for Networking OS 8.2*
- *Lenovo RackSwitch G8296 ISCLI Command Reference for Networking OS 8.2*
- *Lenovo RackSwitch G8296 Installation Guide*

The publications listed above are available from the following website:

<http://publib.boulder.ibm.com/infocenter/systemx/documentation/index.jsp>

Please keep these release notes with your product manuals.

# Hardware Support

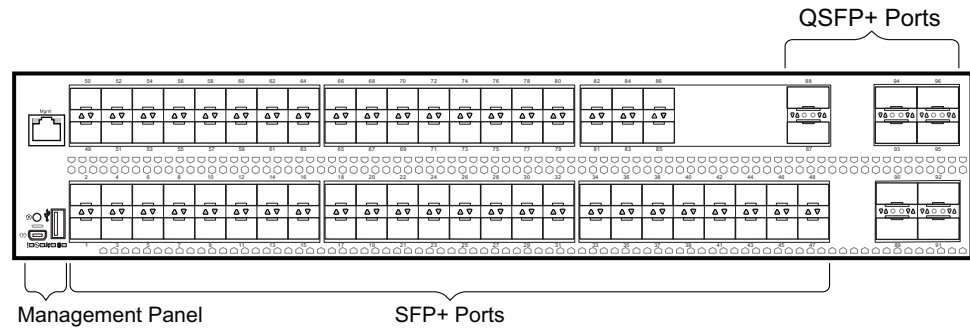
N/OS 8.2 software is supported on the G8296, a high performance Layer 2-3 network switch.

The G8296 is a 2U rack-mountable aggregation switch with unmatched line-rate Layer 2 performance. The G8296 uses a wire-speed, non-blocking switching fabric that provides simultaneous wire-speed transport of multiple packets at low latency on all ports.

The switch unit contains the following switching ports:

- Eighty-six 10 Gigabit Ethernet (GbE) Small Form Pluggable Plus (SFP+) ports which also support legacy 1 GbE connections
- Ten 40 GbE Quad Small Form Pluggable Plus (QSFP+) ports, two of which can optionally be used as four 10 GbE SFP+ ports

**Figure 1.** RackSwitch G8296 front panel



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## Updating the Switch Software Image

The switch software image is the executable code running on the G8296. A version of the image comes pre-installed on the device. As new versions of the image are released, you can upgrade the software running on your switch. To get the latest version of software supported for your G8296, go to the following website:

<http://www.support.lenovo.com>

To determine the software version currently used on the switch, use the following switch command:

```
RS8296# show version
```

The typical upgrade process for the software image consists of the following steps:

- Load a new software image and boot image onto an SFTP, FTP, or TFTP server on your network.
- Transfer the new images to your switch.
- Specify the new software image as the one which will be loaded into switch memory the next time a switch reset occurs.
- Reset the switch.

For instructions on the typical upgrade process, see [“Loading New Software to Your Switch” on page 5](#).

## Loading New Software to Your Switch

The G8296 can store up to two different switch software images (called `image1` and `image2`) as well as special boot software (called `boot`). When you load new software, you must specify where it should be placed: either into `image1`, `image2`, or `boot`.

For example, if your active image is currently loaded into `image1`, you would probably load the new image software into `image2`. This lets you test the new software and reload the original active image (stored in `image1`), if needed.

**Attention:** When you upgrade the switch software image, always load the new boot image and the new software image before you reset the switch. If you do not load a new boot image, your switch might not boot properly (To recover, see [“Recovering from a Failed Software Upgrade” on page 7](#)).

To load a new software image to your switch, you will need the following:

- The image and boot software loaded on a SFTP, FTP or TFTP server on your network.

**Note:** Be sure to download both the new boot file and the new image file.

- The hostname or IP address of the SFTP, FTP, or TFTP server

**Note:** The DNS parameters must be configured if specifying hostnames.

- The name of the new software image or boot file

When the software requirements are met, use the following procedures to download the new software to your switch.

1. In Privileged EXEC mode, enter the following command:

```
RS8296(config)# copy {sftp|tftp|ftp} {image1|image2|boot-image}
```

2. Enter the hostname or IP address of the SFTP, FTP, or TFTP server.

```
Address or name of remote host: <name or IP address>
```

3. Enter the name of the new software file on the server.

```
Source file name: <filename>
```

The exact form of the name will vary by server. However, the file location is normally relative to the SFTP, FTP, or TFTP directory (for example, tftpboot).

4. If required by the SFTP, FTP, or TFTP server, enter the appropriate username and password.
5. The switch will prompt you to confirm your request.

Once confirmed, the software will begin loading into the switch.

6. When loading is complete, use the following commands to enter Global Configuration mode to select which software image (image1 or image2) you want to run in switch memory for the next reboot:

```
RS8296# configure terminal  
RS8296(config)# boot image {image1|image2}
```

The system will then verify which image is set to be loaded at the next reset:

```
Next boot will use switch software image1 instead of image2.
```

7. Reboot the switch to run the new software:

```
RS8296(config)# reload
```

The system prompts you to confirm your request. Once confirmed, the switch will reboot to use the new software.

**Note:** If you select “No” when asked to confirm the reload, any changes made to the configuration since the last reboot will be lost.

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## Supplemental Information

This section provides additional information about configuring and operating the G8296 and N/OS.

### The Boot Management Menu

The Boot Management menu allows you to switch the software image, reset the switch to factory defaults, or to recover from a failed software download.

You can interrupt the boot process and enter the Boot Management menu from the serial console port. When the system displays Memory Test, press **<Shift B>**. The Boot Management menu appears.

```
Resetting at 10:55:49 Sun Apr 19, 2015...
Memory Test .....
Boot Management Menu
I - Change booting image
C - Change configuration block
R - Boot in recovery mode (tftp and xmodem download of images to recover
switch)
Q - Reboot
E - Exit
Please choose your menu option: I
Current boot image is 1. Enter image to boot: 1 or 2: 2
Booting from image 2
```

The Boot Management menu allows you to perform the following actions:

- To change the booting image, press **I** and follow the screen prompts.
- To change the configuration block, press **C**, and follow the screen prompts.
- To perform a TFTP/Xmodem download, press **R** and follow the screen prompts.
- To reboot the switch, press **Q**. The booting process restarts
- To exit the Boot Management menu, press **E**. The booting process continues.

### *Recovering from a Failed Software Upgrade*

Use the following procedure to recover from a failed software upgrade.

1. Connect a PC to the serial port of the switch.
2. Open a terminal emulator program that supports XModem Download (for example, HyperTerminal, SecureCRT, PuTTY) and select the following serial port characteristics:
  - Speed: 9600 bps
  - Data Bits: 8
  - Stop Bits: 1
  - Parity: None
  - Flow Control: None

3. To access the Boot Management menu, you must interrupt the boot process from the Console port. Boot the G8296, and when the system begins displaying Memory Test progress (a series of dots), press **<Shift B>**. The Boot Management menu will display:

```
Resetting at 10:55:49 Sun Apr 19, 2015..
Memory Test .....
Boot Management Menu
I - Change booting image
C - Change configuration block
R - Boot in recovery mode (tftp and xmodem download of images to recover
switch)
Q - Reboot
E - Exit
Please choose your menu option:
```

4. Select **R** for **Boot in recovery mode**. You will see the following display:

```
Entering Rescue Mode.
Please select one of the following options:
  T) Configure networking and tftp download an image
  X) Use xmodem 1K to serial download an image
  P) Physical presence (low security mode)
  R) Reboot
  E) Exit

Option?:
```

- If you choose option **X** (Xmodem serial download), go to step 5.
- If you choose option **T** (TFTP download), go to step 6.



5. **Xmodem download:** When you see the following message, change the Serial Port characteristics to 115200 bps:

```
Change the baud rate to 115200 bps and hit the <ENTER> key before
initiating the download.
```

- a. Press **<Enter>** to set the system into download accept mode. When the readiness meter displays (a series of "C" characters), start XModem on your terminal emulator.
- b. When you see the following message, change the Serial Port characteristics to 9600 bps:

```
Change the baud rate back to 9600 bps, hit the <ESC> key.
```

- c. When you see the following prompt, enter the image number where you want to install the new software and press **<Enter>**.

```
Install image as image 1 or 2 (hit return to just boot image): 1
```

- d. The following message is displayed when the image download is complete. Continue to step 7.

```
Entering Rescue Mode.
Please select one of the following options:
    T) Configure networking and tftp download an image
    X) Use xmodem 1K to serial download an image
    P) Physical presence (low security mode)
    R) Reboot
    E) Exit

Option?:
```

6. **TFTP download:** The switch prompts you to enter the following information:

```
Performing TFTP rescue. Please answer the following questions (enter 'q'
to quit):
IP addr      :
Server addr:
Netmask     :
Gateway     :
Image Filename:
```

- a. Enter the required information and press **<Enter>**.
- b. You will see a display similar to the following:

```
Host IP      : 10.10.98.110
Server IP    : 10.10.98.100
Netmask      : 255.255.255.0
Broadcast    : 10.10.98.255
Gateway      : 10.10.98.254
Installing image G8296-8.2.1.0_OS.img from TFTP server 10.10.98.100
```

- c. When you see the following prompt, enter the image number where you want to install the new software and press **<Enter>**.

```
Install image as image 1 or 2 (hit return to just boot image): 1
```

- d. The following message is displayed when the image download is complete. Continue to step 7.

```
Entering Rescue Mode.
Please select one of the following options:
  T) Configure networking and tftp download an image
  X) Use xmodem 1K to serial download an image
  P) Physical presence (low security mode)
  R) Reboot
  E) Exit

Option?:
```

7. Image recovery is complete. Perform one of the following steps:

- Press **r** to reboot the switch.
- Press **e** to exit the Boot Management menu
- Press the Escape key (**<Esc>**) to re-display the Boot Management menu.

## Recovering from a Failed Boot Image Upgrade

Use the following procedure to recover from a failed boot image upgrade.

1. Connect a PC to the serial port of the switch.
2. Open a terminal emulator program that supports Xmodem download (such as HyperTerminal, CRT, or PuTTY) and select the following serial port characteristics:
  - o Speed: 9600 bps
  - o Data Bits: 8
  - o Stop Bits: 1
  - o Parity: None
  - o Flow Control: None
3. Boot the switch and access the Boot Management menu by pressing **<Shift B>** while the Memory Test is in progress and the dots are being displayed.
4. Select **R** to boot in recovery mode. Then choose option **X** (Xmodem serial download). You will see the following display:

```
Perform xmodem download
To download an image use 1K Xmodem at 115200 bps.
```

5. When you see the following message, change the Serial Port characteristics to 115200 bps:

```
Change the baud rate to 115200 bps and hit the <ENTER> key before
initiating the download.
```

- a. Press **<Enter>** to set the system into download accept mode. When the readiness meter displays (a series of "C" characters), start Xmodem on your terminal emulator. You will see a display similar to the following:

```
Extracting images ... Do *NOT* power cycle the switch.
**** RAMDISK ****
Un-Protected 38 sectors
Erasing Flash...
..... done
Erased 38 sectors
Writing to Flash...9...8...7...6...5...4...3...2...1...done
Protected 38 sectors
**** KERNEL ****
Un-Protected 24 sectors
Erasing Flash...
..... done
Erased 24 sectors
Writing to Flash...9...8...7...6...5...4...3...2...1...
```

- b. When you see the following message, change the Serial Port characteristics to 9600 bps:

```
Change the baud rate back to 9600 bps, hit the <ESC> key.
```

Boot image recovery is complete.

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## Known Issues

This section describes known issues for N/OS 8.2 on the RackSwitch G8296.

**Note:** Please review the Change History documentation posted with the Switch Firmware to check if any of these issues have been fixed in the latest release.

### FCoE: Configuration Download FCF Error

When you download a configuration file with more than 12 Fibre Channel Forwarder VLANs that differ from those in the running configuration, a “configdownload:fcf error” occurs. (ID: LV304109)

### FCoE: Only 2048 Maximum Logins Allowed When Area Size is Set to 4096

When the FCF area size is set to 4096, maximum number of logins allowed per switch across all VLANs remains at 2048, and the maximum number of logins allowed in a VLAN remains at 2048. (ID: LV300846)

**Note:** This issue is specific to FCoE Forwarder only, not FIP Snooping.

### Python Throws Error When Checking Help Modules

A python exception is thrown when checking help (“modules”) in the switch python shell. The supported modules are those from the python 2.6.8 distribution except for bsddb, curses, idlelib, lib-tk, and xml. (ID: LV299048, LV299106).

### QBG: Changing the STG for a Dynamically-Created VLAN will show it as "shutdown" in the running-config

If a VLAN is created dynamically by QBG, the command for disabling statically created VLANs:

```
RS8296(config-vlan)# shutdown
```

will not have any effect. “Shutdown” is the default configuration for dynamically created VLANs. (ID: XB295275)

### VLAG: Flapping ISL Ports Causes Loss in Traffic

Traffic is lost when you flap via ISCLI the ISL ports in a VLAG setup with Routing Information Protocol (RIP). Upon reconnection, the Content Addressable Memory (CAM) table does not synchronize. (ID: LV302019)

## **STP: Spanning-tree edge state is not synchronized between VLAG peers**

To make spanning-tree edge work in VLAG scenario with port flapping, flap both VLAG ports in primary and secondary. In this case, spanning-tree will treat them as link down/up, not local down or remote up.

Reload is different from flapping ports; the spanning-tree state machine will run from initial state and directly set edge to the ports, this is the normal process for all the ports, not for VLAG only. The ports become edge if no BPDU is received after system boot up. (ID: LV308106)

