

IBM System Networking RackSwitch G8264CS



Release Notes

For IBM Networking OS 7.1

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 IBM *Documentation* CD and the *Warranty Information* document that comes with the product.

First Edition (February 2013)

© Copyright IBM Corporation 2013

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Release Notes

This release supplement provide the latest information regarding IBM Networking OS 7.1 for the RackSwitch G8264CS (referred to as G8264CS throughout this document).

This supplement modifies and extends the following IBM N/OS documentation for use with N/OS 7.1:

- *IBM Networking OS 7.1 Application Guide*
- *IBM Networking OS 7.1 Command Reference*
- *IBM Networking OS 7.1 ISCLI Reference*
- *IBM Networking OS 7.1 BBI Quick Guide*
- *IBM System Networking RackSwitch G8264CS Installation Guide*

The publications listed above are available from the IBM support website:

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

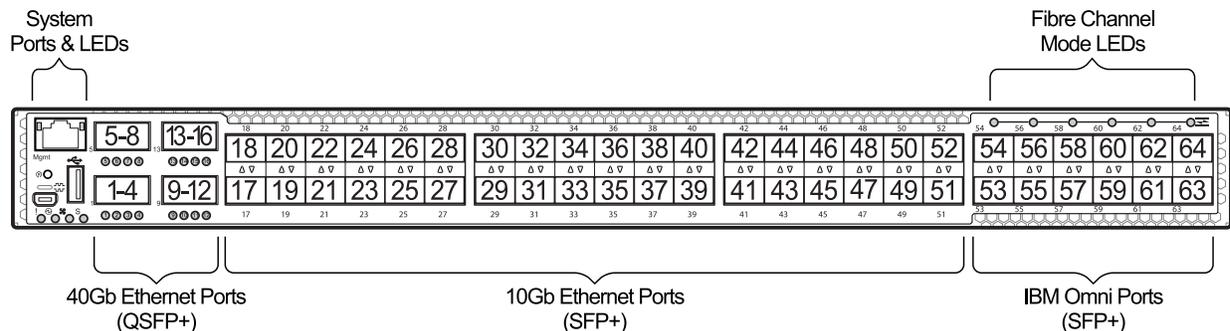
Please keep these release notes with your product manuals.

Hardware Support

The G8264CS contains forty-eight 10GbE SFP+ ports and four 40GbE QSFP+ ports. The SFP+ ports can be populated with optical or copper transceivers, or Direct Attach Cables (DACs). The QSFP+ ports can be populated with optical QSFP+ transceivers or DACs.

Note: If a DAC is not programmed to meet MSA specifications (including length identifier), the switch disables the port and generates a syslog message indicating that the DAC is not approved.

Figure 1. RackSwitch G8264CS Front Panel



Transceivers

The following transceivers and DACs are available:

Table 1. G8264CS Transceivers and DACs

Description	Part number
Transceivers	
SFP+ 10Gbase-SR transceiver	46C3449
1000BASE-T (RJ45) SFP transceiver	81Y1620
1000BASE-SX SFP transceiver	81Y1624
IBM QSFP+ 40Gbase-SR transceiver	49Y7928
1000BASE-LX SFP transceiver	90Y9423
SFP+ 10Gbase-LR transceiver	00D6179
SFP+ 10Gbase-ER transceiver	90Y9414
IBM 8Gb SFP+ SW Optical transceiver	00D6182
4Gb SFP transceiver option	39R6476
Direct Attach Cables (DACs)	
1m IBM QSPF+ DAC Breakout Cable	49Y7930
3m IBM QSPF+ DAC Breakout Cable	49Y7931
5m IBM QSPF+ DAC Breakout Cable	49Y7932
1m IBM QSPF-to-QSPF Cable	49Y7934
3m IBM QSPF-to-QSPF Cable	49Y7935
5m IBM QSPF-to-QSPF Cable	00D5809
7m IBM QSPF-to-QSPF Cable	00D5812
1m IBM Passive DAC SFP+ Cable	90Y9426
3m IBM Passive DAC SFP+ Cable	90Y9429
5m IBM Passive DAC SFP+ Cable	90Y9432
1m IBM Active DAC SFP+ Cable	46K6182
3m IBM Active DAC SFP+ Cable	46K6183
5m IBM Active DAC SFP+ Cable	46K6184
10m IBM QSPF+ MTP Optical Cable	41V2458
30m IBM QSPF+ MTP Optical Cable	45D6369
1m LC-LC Fibre Cable (Networking) - Optical	39M5699
5m LC-LC Fibre Cable (Networking) - Optical	39M5700
25m LC-LC Fibre Cable (Networking) - Optical	39M5701

The G8264CS accepts any SFP+ Direct Attach Cable that complies to the MSA specification.

Updating the Switch Software Image

The switch software image is the executable code running on the G8264CS. 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 G8264CS, go to the following website:

<http://www.ibm.com/systems/support>

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

```
RS8264CS# show boot
```

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

- Load a new software image and boot image onto an 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 using the CLI, ISCLI, or BBI, see [“Loading New Software to Your Switch” on page 5](#).



CAUTION:

Although the typical upgrade process is all that is necessary in most cases, upgrading from (or reverting to) some versions of N/OS or BLADEOS requires special steps prior to or after the software installation process. Please be sure to follow all applicable instructions in the following sections to ensure that your switch continues to operate as expected after installing new software.

Loading New Software to Your Switch

The G8264CS 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.



CAUTION:

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 Upgrade” on page 9](#)).

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

- The image and boot software loaded on an 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 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 one of the following procedures to download the new software to your switch. You can use the N/OS CLI, the ISCLI, or the BBI to download and activate new software.

Loading Software via the N/OS CLI

1. Enter the following Boot Options command:

```
>> # /boot/gtimg
```

2. Enter the name of the switch software to be replaced:

```
Enter name of switch software image to be replaced  
["image1"/"image2"/"boot"]: <image>
```

3. Enter the hostname or IP address of the FTP or TFTP server.

```
Enter hostname or IP address of FTP/TFTP server: <hostname or IP address>
```

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

```
Enter name of file on FTP/TFTP server: <filename>
```

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

5. Enter your username for the server, if applicable.

```
Enter username for FTP server or hit return for  
TFTP server: {<username> /<Enter>}
```

If entering an FTP server username, you will also be prompted for the password. The system then prompts you to confirm your request. Once confirmed, the software will load into the switch.

6. If software is loaded into a different image than the one most recently booted, the system will prompt you whether you wish to run the new image at next boot. Otherwise, you can enter the following command at the `Boot Options#` prompt:

```
Boot Options# image
```

The system then informs you of which software image (image1 or image2) is currently set to be loaded at the next reset, and prompts you to enter a new choice:

```
Currently set to use switch software "image1" on next reset.  
Specify new image to use on next reset ["image1"/"image2"]:
```

Specify the image that contains the newly loaded software.

7. Reboot the switch to run the new software:

```
Boot Options# reset
```

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

Loading Software via the ISCLI

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

```
Router# copy {tftp|ftp} {image1|image2|boot-image}
```

2. Enter the hostname or IP address of the 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 FTP or TFTP directory (for example, `tftpboot`).

4. If required by the 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:

```
Router# configure terminal  
Router(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:

```
Router(config)# reload
```

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

Loading Software via BBI

You can use the Browser-Based Interface to load software onto the G8264CS. The software image to load can reside in one of the following locations:

- FTP server
- TFTP server
- Local computer

After you log onto the BBI, perform the following steps to load a software image:

1. Click the Configure context tab in the toolbar.
2. In the Navigation Window, select System > Config/Image Control.
The Switch Image and Configuration Management page appears.
3. If you are loading software from your computer (HTTP client), skip this step and go to the next. Otherwise, if you are loading software from a FTP/TFTP server, enter the server's information in the FTP/TFTP Settings section.
4. In the Image Settings section, select the image version you want to replace (Image for Transfer).
 - If you are loading software from a FTP/TFTP server, enter the file name and click **Get Image**.
 - If you are loading software from your computer, click **Browse**.
In the File Upload Dialog, select the file and click **OK**. Then click **Download via Browser**.

Once the image has loaded, the page refreshes to show the new software.

Supplemental Information

This section provides additional information about configuring and operating the G8264CS 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 the System ...
Memory Test .....

Boot Management Menu
1 - Change booting image
2 - Change configuration block
3 - Xmodem download
4 - Exit

Please choose your menu option: 1
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 1 and follow the screen prompts.
- To change the configuration block, press 2, and follow the screen prompts.
- To perform an Xmodem download, press 3 and follow the screen prompts.
- To exit the Boot Management menu, press 4. The booting process continues.

Recovering from a Failed 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, CRT, PuTTY) and select the following serial port characteristics:
 - Speed: 9600 bps
 - Data Bits: 8
 - Stop Bits: 1
 - Parity: None
 - 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 **3** for **Xmodem download**. When you see the following message, change the Serial Port characteristics to 115200 bps:

```
## Switch baudrate to 115200 bps and press ENTER ...
```

5. 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.
6. Select the Boot Image to download. The XModem initiates the file transfer. When the download is complete, a message similar to the following is displayed:

```

yzModem - CRC mode, 62494(SOH)/0(STX)/0(CAN) packets, 6 retries

Extracting images ... Do *NOT* power cycle the switch.

**** VMLINUX ****

Un-Protected 10 sectors

Erasing Flash..... done

Writing to Flash.....done

Protected 10 sectors

**** RAMDISK ****

Un-Protected 44 sectors

Erasing Flash..... done

Writing to Flash.....done

Protected 44 sectors

**** BOOT CODE ****

Un-Protected 8 sectors

Erasing Flash..... done

Writing to Flash.....done

Protected 8 sectors

```

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

```
## Switch baudrate to 9600 bps and press ESC ...
```

8. Press the Escape key (**<Esc>**) to re-display the Boot Management menu.
9. Select **3** to start a new **XModem Download**. When you see the following message, change the Serial Port characteristics to 115200 bps:

```
## Switch baudrate to 115200 bps and press ENTER ...
```

10. Press **<Enter>** to continue the download.

11. Select the OS Image to download. The XModem initiates the file transfer. When the download is complete, a message similar to the following is displayed:

```
yzModem - CRC mode, 27186(SOH)/0(STX)/0(CAN) packets, 6 retries  
Extracting images ... Do *NOT* power cycle the switch.  
  
**** Switch OS ****  
  
Please choose the Switch OS Image to upgrade [1|2|n] :
```

12. Select the image number to load the new image (1 or 2). It is recommended that you select 1. A message similar to the following is displayed:

```
Switch OS Image 1 ...  
Un-Protected 27 sectors  
  
Erasing Flash..... done  
  
Writing to Flash.....done  
  
Protected 27 sectors
```

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

```
## Switch baudrate to 9600 bps and press ESC ...
```

14. Press the Escape key (<Esc>) to re-display the Boot Management menu.
15. Select **4** to exit and boot the new image.

Known Issues

This section describes known issues for N/OS 7.1 on the RackSwitch G8264CS.

BGP

- Maximum number of route maps that can be added to a BGP peer is 8. (ID: 46448)

FCoE

- Only the ISCLI and BBI are supported for configuring the FCoE feature.
- In N/OS 7.1, the G8264CS supports up to 175 simultaneous FCoE sessions. When this capacity is reached, traffic for additional sessions is dropped, though some host servers and uplink devices may consider all sessions fully established. (ID: 60337, 64842)
- When using FCoE to connect the switch to a Cisco Nexus 5000 (as an external FCF), the DCBX PFC willing flag must be enabled. (ID: 65043)

Fibre Channel

- Only the ISCLI is supported for configuring the Fibre Channel feature.

Hotlinks

Prior to enabling hotlinks, Spanning-Tree should be globally disabled using the following command (ID: 47917):

```
RS8264CS(config)# spanning-tree mode dis
```

IGMP

- The G8264CS supports the following IGMP capacities (ID: 45775):
 - IGMP Snooping mode: 3072 IGMP and IPMC groups
 - IGMP Relay mode: 1000 IGMP groups and IPMC groups
- Only 1024 VLANs can be added to IGMP Snooping. Only 8 VLANs can be added to IGMP Relay. (ID: 45781)

OSPF

- Some changes to OSPF configuration (such as creating a new area or changing an area's type) may result in OSPF state reconvergence. (ID: 46445, 48483)
- OSPFv3 over IPsec
 - This combination can only be configured only on a per-interface basis. Configuration based on virtual links is not currently supported. (ID: 48914)
 - The current implementation for OSPFv3 allows the use of only one protocol (AH or ESP) at any given time. AH and ESP cannot be applied together.

Ports

- Egress packets contribute to statistics on IBM Omni Ports even when link is down or transceivers are not present. (ID: 62639)
- In Ethernet mode (the default), IBM Omni Ports may take longer than dedicated Ethernet ports to reflect changes in port link status. As a result, some traffic loss can be expected while the port transitions to a down state. When using protocols sensitive to link failover timing, it is recommended to use regular Ethernet ports first. (ID: 67288)

QSFP+

- The QSFP+ ports do not auto-negotiate. The desired speed must be configured to match on both ends of the connection, and the switch reset for changes to take effect. (ID: 46340)
- After you upgrade switch software and reset the switch, you must configure the QSFP+ port mode. Use the following command (ID: 46858):

```
boot qsfp-40gports <1, 5, 9, 13>
```

VMready

- VMs belonging to different ESX servers cannot ping each other across different VM groups. Because the VM groups belong to different VLANs, this is appropriate and expected behavior.
- On switch ports on which VMs are learned, the switch does not learn the MAC address of the destination host unless the host sends some network traffic. Therefore the switch might not forward packets to the destination host. (ID: 44946)
 - If you are not using VMready in a VM environment, disable VMready (`no virt enable`).
 - If you are using VMready, periodically send traffic from the host (for example, `ping`), so that the host's MAC address is always present in the Forwarding Database (MAC Address Table).

vNICs

- Bandwidth metering drops excess packets when the configured limits on the vNIC pipe are reached. Any CEE Enhanced Transmission Selection configuration is ignored. (ID: 50950)
- vNIC egress bandwidth control is not strictly enforced on the switch for packets larger than 900 bytes, resulting in greater egress bandwidth from the switch to the server than is configured. However, ingress bandwidth control (from the server to the switch) is strictly enforced.

