

Sun Network QDR InfiniBand Gateway Switch

Product Notes for Firmware Version 1.3



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Using This Documentation

This document provides late-breaking information about the Sun Network QDR InfiniBand Gateway Switch firmware version 1.3 from Oracle. This document is written for technicians, system administrators, and authorized service providers who have advanced experience working with similar products..

- [“Related Documentation” on page v](#)
- [“Feedback” on page v](#)
- [“Access to Oracle Support” on page vi](#)

Related Documentation

Documentation	Links
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Sun Network QDR InfiniBand Gateway Switch	
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Oracle Integrated Lights Out Manager (ILOM) 3.0	
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All Oracle products	
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Feedback

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Sun InfiniBand QDR Gateway Switch Product Notes

These product notes provide last-minute, late-breaking information regarding the Sun Network QDR InfiniBand Gateway Switch from Oracle. These notes coincide with and pertain to the release of the 1.3.5-1 firmware for the gateway.

- [“Known Problems” on page 1](#)
- [“General Information and Issues” on page 4](#)
- [“Software Information and Issues” on page 5](#)
- [“Hardware Information and Issues” on page 8](#)
- [“Documentation Information and Issues” on page 9](#)

Known Problems

The following table describes known problems with the gateway.

Bug	Description	Workaround
15693303	BridgeX reset maximizes symbol error counter.	The <code>setgwinstance</code> , <code>setgws1</code> , and <code>setgwsystemname</code> commands reset the BridgeX chip, causing symbol errors to maximize. Workaround: Follow the procedure described in “Symbol Errors on Internal Ports” on page 8.
15696509	IP addresses within the Subnet Manager nodes file does not match those assigned by DHCP.	By default, the DHCP server is not assured to assign a consistent IP address to a Subnet Manager node upon reboot. Workaround: Manually configure the DHCP server to assign a specific and unique IP address to each Subnet Manager node.
15696667	IPMI service cannot be disabled.	Though it appears that the user has disabled the IPMI service from either the Oracle ILOM CLI or web interfaces, the service remains enabled. There is no workaround at this time.
15697010	<code>snmpd</code> daemon experiences segmentation fault on reboot.	Sometimes when the management controller is rebooted, the <code>snmpd</code> daemon experiences a segmentation fault. In this situation, the daemon automatically restarts. Workaround: Wait a few seconds before accessing the <code>snmpd</code> daemon. Additionally, the <code>segfault</code> message in the <code>/var/log/messages</code> log file can be ignored.
15697900	Erroneous VLAN-pkey association on <code>bxm</code> restart.	If you are using VLANs, you might see the following error message on Bridge Manager (<code>bxm</code>) restart: Vlan not defined for vlan 0 pkey ffff Use 'createvlan' to set up vlan These error messages can be ignored.
15699204	Disabling gateway group connector disables only first subordinate connector.	The following command disables only <code>0A-ETH-1</code> , and not <code>0A-ETH-2</code> , <code>0A-ETH-3</code> , and <code>0A-ETH-4</code> as implied: <code>disablegwport 0A-ETH</code> You must disable each subordinate connector independently. For example: <code>disablegwport 0A-ETH-1</code> <code>disablegwport 0A-ETH-2</code> This issue and workaround also apply to connector <code>1A-ETH</code> .
15699216	Invalid input for <code>disableswitchport</code> command returns error.	Providing an invalid connector for the <code>disableswitchport</code> command returns an error, instead of the usage description. Workaround: Use the <code>disableswitchport</code> command for InfiniBand connectors and the <code>disablegwport</code> command for Ethernet connectors. For the usage description, type the <code>disableswitchport</code> command without arguments or options.

Bug	Description	Workaround
15699218	Using group connectors in <code>createvnic</code> command causes MAC violations.	Using the group connectors, 0A-ETH and 1A-ETH, in the <code>createvnic</code> command causes MAC address violations. You must create VNICS for the subordinate connectors independently. For example: <pre>createvnic 0A-ETH-1 -guid 00:02:C9.... createvnic 0A-ETH-2 -guid 00:02:C9....</pre>
15699219	<code>createvnic</code> command help output incomplete.	The help output for the <code>createnvic</code> command is incomplete and lacks example usage of the <code>-pkey</code> option. Workaround: See the <i>Gateway Command Reference</i> , <code>createvnic</code> command.
15710409	Similarly named MIB files are not identical.	MIB files are included in the firmware download. You also can back up MIB files from the Oracle ILOM interfaces. The MIB files from these sources are not the same. Workaround: Use the MIB files included in the firmware download.
15712509	<code>showgwport</code> and <code>getportstatus</code> commands give error.	When there are disabled 10 GbE ports, both the <code>showgwport</code> and <code>getportstatus</code> commands return <code>KeyError</code> messages. There is no workaround at this time.
15714344	Incorrect message for full snapshot dataset.	When selecting the full dataset for snapshot within the Oracle ILOM web interface, the text alludes that a host reset might occur. This text can be ignored.
15714725	Host name property not supported in Oracle ILOM.	Performing a read action on the <code>sysName</code> OID does not return any value. There is no workaround at this time.
15715405	<code>generatetopology</code> command creates incorrect topology file.	The topology file created by the <code>generatetopology</code> command might have an incomplete entry. This situation occurs when the node descriptions for two or more InfiniBand devices are identical. The <code>generatetopology</code> command attempts to append the node GUID to the node description to help discriminate the InfiniBand devices. In rare occurrences, this task is not completed correctly. If the <code>matchtopology</code> command is used to validate the topology file, the command returns an error. There is no simple workaround.

Bug	Description	Workaround
15717589	<code>managementreset</code> command not supported.	For firmware version 1.3.5-1, the <code>managementreset</code> command is not supported. Workaround: Power cycle the gateway if either the I4 switch chip or the BridgeX chip has been shut down due to an overtemperature event.
15723865	Using the <code>passwd</code> command is not supported.	Contrary to the gateway documentation, the <code>passwd</code> command is not supported. Workaround: As the <code>ilom-admin</code> user of the Oracle ILOM CLI, use this command to set the user's password: -> set /SP/users/username password where <i>username</i> is the name of the user.
15736565	In some situations, the <code>setgwsl</code> command does not function.	If the BridgeX Manager configuration file is in a questionable state, the <code>setgwsl</code> command will not reconfigure the file. Workaround: First type these two commands as superuser: # rm -f /conf/bxm.conf # service bxm restart Then use the <code>setgwsl</code> , <code>setgwinstance</code> , and other commands to reconfigure the BridgeX Manager configuration file.

General Information and Issues

- [“Jumbo Frames” on page 4](#)
- [“Subnet Manager” on page 5](#)
- [“Snapshot Dataset Information” on page 5](#)

Jumbo Frames

Consider the following for Jumbo Frames:

- True Jumbo Frames are not supported.
- The maximum MTU is limited by the MTU of the InfiniBand fabric.
- The MTU of the HCA is 2048 by default, but can be increased up to 4096.
- The default MTU of the I4 switch chip and BridgeX chips is 4096.

The gateway supports Jumbo Frames up to the InfiniBand limit of 4096 bytes.

You must configure the entire InfiniBand fabric to use a 4096 MTU. This configuration includes configuring the Subnet Manager, InfiniBand devices, and the ConnectX HCAs. You can configure a ConnectX HCA by activating the `set_4k_mtu` parameter of the HCA's `mlx4_core` module.

Subnet Manager

Access to the VNICs through the gateway requires an active Subnet Manager for the InfiniBand fabric. The management controller within the gateway is already configured with a Subnet Manager. You can enable the Subnet Manager with the `enablesm` command.

Note – VNICs are unavailable or not created if there is no physical connection between the 10 GbE ports and the 10 GbE network.

Snapshot Dataset Information

The `normal`, `fruid`, and `full` datasets of the snapshot utility are currently equivalent and contain the same data in the snapshot.

Software Information and Issues

- [“Unsupported Commands” on page 5](#)
- [“Unsupported Options” on page 6](#)
- [“Email Alert Rules” on page 6](#)
- [“Operating System Support” on page 6](#)
- [“Firmware Update Considerations” on page 6](#)
- [“Host Software and Firmware” on page 7](#)
- [“Symbol Errors on Internal Ports” on page 8](#)

Unsupported Commands

Though the `smnodes` and `smpartition` commands are listed in the output of the `help all` command, they are not supported by the 1.3.5-1 firmware.

Unsupported Options

Though both the `createvlan` and `deletevlan` command help output identifies LAG as a valid input parameter, LAG is not supported by the 1.3.5-1 firmware.

Email Alert Rules

You must specify the value of the `email_custom_sender` property of an email alert rule, because the alert does not use the `custom_sender` property of the `/SP/clients/smtp` target.

Operating System Support

The following operating systems support the gateway at the time of this release:

- Oracle Enterprise Linux (OEL) 5.3, 5.4 and 5.5.
- Oracle Solaris 10 9/10 OS (with SPARC patches)
- Oracle Solaris 10 9/10 OS (with X86 patches)

Firmware Update Considerations

If you are going to downgrade from firmware 2.0.x to 1.3.5-1 or earlier, you might see these type of messages in the `/var/log/message` file after the downgrade:

```
lda: Unknown config parameter: ErrLogCount=100; .
```

```
lda: Unknown config parameter: ErrLogTimeInterval=100; .
```

The `ErrLogCount` and `ErrLogTimeInterval` configuration parameters introduced in firmware 2.0.x are unknown to firmware version 1.3.5-1 and earlier LDAs. The LDA logs these messages and ignores them from there on. The messages appear once per LDA startup and are harmless.

If you later upgrade from firmware 1.3.5-1 to 2.0.x and the `ErrLogCount` and `ErrLogTimeInterval` configuration parameters are absent, the 2.0.x LDA uses the compiled default values. Consequently, no LDA messages regarding these configuration parameters are recorded.

The following is a list of additional timezones supported only in firmware versions 1.3.4-1 and 1.3.5-1. They are not supported in firmware versions 1.1.x, 1.3.2-1, 2.0.4-1, or 2.0.5-2. If you downgrade the firmware to version 1.1.x or 1.3.2-1, or upgrade the firmware to version 2.0.4-1 or 2.0.5-2, you must set the timezone to somewhere other than these:

- America/Argentina/Salta
- America/Argentina/San_Luis
- America/Bahia_Banderas
- America/Kralendijk
- America/Lower_Princes
- America/Matamoros
- America/Metlakatla
- America/North_Dakota/Beulah
- America/Ojinaga
- America/Santa_Isabel
- America/Santarem
- America/Sitka
- Antarctica/Macquarie
- Asia/Ho_Chi_Minh
- Asia/Kathmandu
- Asia/Kolkata
- Asia/Novokuznetsk
- Pacific/Chuuk
- Pacific/Pohnpei

Host Software and Firmware

To configure and use VNICs from an InfiniBand host, the host must have the following software and firmware installed:

- BXOFED software. See [“Acquire the BXOFED Software”](#) on page 10.
- ConnectX-2 firmware version 2.7.8130 or newer. See [“Acquire the ConnectX-2 Firmware”](#) on page 11.

Both of these software packages are available from Oracle.

Symbol Errors on Internal Ports

When starting the gateway or when restarting the Bridge Manager (bxm), there might be 65535 symbol errors on the internal links between the I4 switch chip and the BridgeX chips. These errors are identified in hardware commands such as `getportcounters` or in InfiniBand commands such as `ibdiagnet`.

Workaround: Manually reset the error counters using the following commands:

```
# getportcounters 1 -R; getportcounters 2 -R; getportcounters 3 -R;  
getportcounters 4 -R
```

or

```
# ibclearerrors
```

Note – The `ibclearerrors` command is not selective, and clears errors from all ports.

Hardware Information and Issues

- [“Ethernet Support” on page 8](#)
- [“Unusable Ports” on page 9](#)

Ethernet Support

The gateway supports 10 Gb/sec Ethernet networks.

The following table lists supported hardware to construct one splitter cable for 10 GbE networks.

Description	Part Number	Quantity Needed
Optical splitter cable	X2127A	1
10 GbE QSFP transceiver	X2124A	1
10 GbE SFP+ transceiver	X2129A	4

Unusable Ports

The ports covered by the Do Not Remove plastic tab are unusable at the time of this document. Do not remove the tab.

Documentation Information and Issues

- [“SUN-DCS-IB-MIB MIB and Respective OIDs”](#) on page 9
- [“SNMP V3 Protocol Passwords”](#) on page 9
- [“Features and Functionality Documented”](#) on page 9
- [“Temperature Sensor Thresholds Incorrect”](#) on page 10
- [“Acquire the BXOFED Software”](#) on page 10
- [“Acquire the ConnectX-2 Firmware”](#) on page 11
- [“Upgrading the Gateway Firmware”](#) on page 13

SUN-DCS-IB-MIB MIB and Respective OIDs

The InfiniBand Management Information Base and respective Object Identifiers are incorrectly identified with the string SUN-DCS-MIB. Replace SUN-DCS-MIB with SUN-DCS-IB-MIB (note the -IB-) in text and command examples.

SNMP V3 Protocol Passwords

In sections of *Gateway Remote Management*, authentication and privacy passwords are described for SNMP service user accounts and SNMP V3 protocol commands. For the user accounts and commands, the MD5 and SHA authentication passwords are 8 to 12 characters in length, and the DES privacy password must be exactly 8 characters long.

Features and Functionality Documented

The features and functionality described in the gateway documentation has been updated to reflect the 1.3.5-1 and later versions of the firmware. Upgrading your gateway firmware to the most current version helps increase gateway functionality. See [“Upgrading the Gateway Firmware”](#) on page 13.

Temperature Sensor Thresholds Incorrect

Some of the temperature sensor thresholds described in the documentation are incorrect. This table provides correct threshold values.

Sensor	Upper Critical Threshold	Upper Nonrecoverable Threshold
/SYS/MB/T_SP	80°C	85°C
/SYS/MB/T_BACK	60°C	65°C
/SYS/MB/T_FRONT	60°C	65°C
/SYS/MB/T_I4A	90°C	95°C
/SYS/MB/T_B0	90°C	95°C
/SYS/MB/T_B1	90°C	95°C

▼ Acquire the BXOFED Software

In *Gateway Administration*, section on acquiring the BXOFED software, instructions are provided to download the BXOFED software from Mellanox. This situation has changed. For continued software availability, download the BXOFED software from Oracle instead.

1. **Open a web browser on a host that will receive the BXOFED software.**
2. **Go to this URL:**

Oracle's My Oracle Support page is displayed.

3. **Sign in if you already have an account.**

The dashboard page is displayed.

Note – If you do not have an account, you must register.

4. **From the More... drop-down menu, select Patches & Updates.**

The Patches and Updates page is displayed.

5. **In the Patch Search window, click the Product or Family (Advanced).**

The Patch Search window updates.

6. **In the Product Is field, type BridgeX.**

Possible products are suggested.

7. **Click the most appropriate link.**
The Release Is field might autopropagate with the most current version.
8. **In the Release Is drop-down menu, select the most current version of the BridgeX OFED software.**
For example, BridgeX OFED 1.5.1.
9. **Click outside of the drop-down menu.**
10. **Click Search.**
The Patch Search window expands with the search results.
11. **In the Patch Name column, click the patch number link respective to your platform.**
For example, 12621910. The Patch Search window reformats.
12. **Click Read Me to display the README file.**
13. **Click Download.**
The File Download window opens.
14. **Click the filename.zip link to initiate the download.**
For example, p12621910_151_Linux-x86-64.zip.
15. **Indicate where the file should be saved.**
The file is downloaded and saved.
16. **In your receiving directory, decompress the filename.zip file.**
The BXOFED software is in the BXOFED-1.5.1-version_for Oracle.tgz file. There are also readme, release notes, installation guide and user manual files in the filename.zip file.
17. **Read the README, release notes, and installation guide files for information how to install the BXOFED software.**

▼ Acquire the ConnectX-2 Firmware

For your host to properly interface with the gateway, the firmware of the ConnectX-2 chip in the HCA must be updated to version 2.7.8130 or higher.

1. **Open a web browser on a host that will receive the ConnectX-2 firmware.**
2. **Go to this URL:**

Oracle's My Oracle Support page is displayed.

3. Sign in if you already have an account.

The dashboard page is displayed.

Note – If you do not have an account, you must register.

4. From the More... drop-down menu, select Patches & Updates.

The Patches and Updates page is displayed.

5. In the Patch Search window, click the Product or Family (Advanced).

The Patch Search window updates.

6. In the Product Is drop-down menu, select your HCA.

For example, Sun Dual Port 4x QDR InfiniBand (IB) HCA PCIe ExpressModule.

7. In the Release Is drop-down menu, select the latest firmware version.

For example, FW25208 v4.8.200.

8. Click outside of the drop-down menu.

9. In the Platform Is drop-down menu, select the Oracle Solaris appropriate for your host.

For example, Oracle Solaris on x86-64 (64-bit).

10. Click outside of the drop-down menu.

11. Click Search.

The Patch Search window expands with the search results.

12. In the Patch Name column, click the respective patch number link.

For example, 12610270. The Patch Search window reformats.

13. Click Read Me to display the README file.

14. Click Download.

The File Download window opens.

15. Click the filename.zip link to initiate the download.

For example, p12610270__Solaris86-64.zip.

16. Indicate where the file should be saved.

The file is downloaded and saved.

17. In your receiving directory, decompress the filename.zip file.

The ConnectX-2 firmware is in the fw-ConnectX2-rel-2_7_version.bin file.

For example, fw-ConnectX2-rel-2_7_8130-375-3697-01.bin.

18. Refer to your HCA documentation for instructions on how to upgrade the ConnectX-2 firmware.

Upgrading the Gateway Firmware

In *Gateway Remote Management*, firmware version numbers are provided as x.y, x.y.z, and x.y.z-w. Currently, these numbers are 1.3, 1.3.5, and 1.3.5-1 respectively. The following two procedures describe how to acquire and upgrade the firmware through the Oracle ILOM CLI.

- “Acquire the Gateway Firmware Package (CLI)” on page 13
- “Upgrade the Gateway Firmware (CLI)” on page 15

▼ Acquire the Gateway Firmware Package (CLI)

1. Open a web browser on a host that is on the same Ethernet network as the management controller to receive the firmware update.
2. Go to this URL.

Oracle’s My Oracle Support page is displayed.

3. Sign in if you already have an account.
The dashboard page is displayed.

Note – If you do not have an account, you must register.

4. From the More... drop-down menu, select Patches & Updates.
The Patches and Updates page is displayed.
5. In the Patch Search window, click the Search tab.
The Patch Search window updates.
6. Click the Product or Family (Advance) link.
The Patch Search window updates.
7. In the Product Is drop-down menu, select Sun Network QDR Infiniband Gateway Switch.

8. In the Release Is drop-down menu, select Sun Network QDR Infiniband Gateway Switch *x.y.z*.

Where *x.y.z* is the version number of the firmware package to be acquired. For example, 1.3.5.

9. Click outside of the drop-down menu.

10. Click Search.

The Patch Search window expands with the search results.

11. In the Patch Name column, click the respective patch number link.

For example, 17567384. The Patch Search window reformats.

12. Click Read Me to display the README file.

13. Click Download.

The File Download window opens.

14. Click the `filename.zip` link to initiate the download.

For example, `p17567384_135_Generic.zip`.

15. Indicate where the file should be saved.

The file is downloaded and saved.

16. In your receiving directory, decompress the `filename.zip` file.

The firmware is in the `SUN_DCS_gw_x.y.z.tar.gz` file.

The readme file contains the latest information about the firmware release.

17. Unpack the `.gz` file.

```
$ gtar -zxvf SUN_DCS_gw_x.y.z.tar.gz
```

The extracted files are displayed.

18. Move the gateway firmware package (`filename.pkg`) to a directory on a host that is accessible by Oracle ILOM.

19. Upgrade the gateway firmware.

See “[Upgrade the Gateway Firmware \(CLI\)](#)” on page 15 or *Gateway Remote Administration*, upgrading the gateway firmware.

▼ Upgrade the Gateway Firmware (CLI)

1. Open an SSH session as user `root` and connect to the management controller by specifying the controller's host name.

For example:

```
% ssh -l root gateway_name
root@gateway_name's password: password
#
```

where `gateway_name` is the host name of the management controller. Initially, the `password` is `changeme`.

2. If the Subnet Manager is running on the management controller, disable it with the `disableesm` command.

```
# disableesm
Stopping partitiond daemon.          [ OK ]
Stopping IB Subnet Manager..        [ OK ]
#
```

3. Verify that there is at least 150 MB available in the `/tmp` directory.

```
# df -h /tmp
Filesystem      Size  Used Avail Use% Mounted on
tmpfs           250M  240K  249M  1% /tmp
#
```

In this example, there are 249 MB available. If not enough space is available, you must delete files from the `/tmp` directory.

4. Verify that there is at least 1 MB available in the `/config` directory.

```
# df -h /config
Filesystem      Size  Used Avail Use% Mounted on
/dev/hda2       16M   3.6M   11M  25% /config
#
```

In this example, there are 11 MB available. If not enough space is available, you must delete files from the `/config` directory.

5. Verify that there is at least 1 MB available in the /var/log directory.

```
# df -h /var/log
Filesystem      Size  Used Avail Use% Mounted on
/dev/hda3       16M   3.6M   11M   25% /var/log
#
```

In this example, there are 11 MB available. If not enough space is available, you must delete files from the /var/log directory.

6. Verify that there is at least 150 MB free memory available.

```
# free -m
              total          used          free          shared    buffers         cached
Mem:           498            104            393             0             12             47
-/+ buffers/cache:
Swap:           0              0              0
#
```

In the Mem: row of the free column, there should be at least 150 MB free memory. In this example, there are 393 MB available. If not enough memory is available, you must exit nonessential applications that are running.

7. Start the Oracle ILOM shell:

```
# spsh
Sun(TM) Integrated Lights Out Manager
Version ILOM 3.0 r47111
Copyright 2009 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
->
```

You are now in the Oracle ILOM shell.

You can use the exit command to return to the Linux shell.

8. Begin the upgrade process:

```
-> load -source URI/pkgname
```

where:

- *URI* is the uniform resource indicator for the host where the gateway firmware package is located. The FTP and HTTP protocols are supported.

- *pkgname* is the name of the firmware package in the transfer directory.

For example, using the FTP protocol:

```
-> load -source
ftp://root:changeme@123.45.67.99//tmp/sundcs_gw_repository_1.3.5_1.pkg
Downloading firmware image. This will take a few minutes.
```

The firmware is downloaded. The upgrade begins. A caution is displayed, and you are asked to commit to the upgrade.

```
NOTE: Firmware upgrade will upgrade firmware on SUN DCS gw Kontron module,
I4, BridgeX and FPGA. Upgrade of Kontron module, I4 and BridgeX takes
few minutes to complete. FPGA upgrade takes about 4 hours.
```

```
ILOM will enter a special mode to load new firmware. No other tasks
should be performed in ILOM until the firmware upgrade is complete.
```

```
Are you sure you want to load the specified file (y/n)?
```

9. Answer *y* to the prompt to commit to the upgrade.

The upgrade begins.

```
Setting up environment for firmware upgrade. This will take few minutes.
Starting SUN DCS gw FW update
```

```
=====
Performing operation: I4 A
```

```
=====
I4 A: I4 is already at the given version.
```

```
=====
Performing operation: BX A
```

```
=====
BX fw upgrade from 8.3.3164(INI:4) to 8.3.3166(INI:4):
```

```
Upgrade started...
```

```
Upgrade completed.
```

```
INFO: BX fw upgrade from 8.3.3164(INI:4) to 8.3.3166(INI:4) succeeded
```

```
=====
Performing operation: BX B
```

```
=====
BX fw upgrade from 8.3.3164(INI:4) to 8.3.3166(INI:4):
```

```
Upgrade started...
```

```
Upgrade completed.
```

```
INFO: BX fw upgrade from 8.3.3164(INI:4) to 8.3.3166(INI:4) succeeded
```

```

=====
Summary of Firmware update
=====
I4 status                : FW UPDATE - SUCCESS
I4 update succeeded on   : none
I4 already up-to-date on : A
I4 update failed on     : none
BX status                : FW UPDATE - SUCCESS
BX update succeeded on   : A, B
BX already up-to-date on : none
BX update failed on     : none

=====
Performing operation: FPGW firmware update
=====
INFO: FPGA is already at the given version.

=====
Performing operation: SUN DCS gw firmware update
=====
SUN DCS gw Kontron module fw upgrade from 1.1.2-2 to 1.3.5-1:
Please reboot the system to enable firmware update of Kontron module. The
download of the Kontron firmware image
happens during reboot.

After system reboot, Kontron FW update progress can be monitored in browser using
URL [http://GWsystem] OR at OS
command line prompt by using command [telnet GWsystem 1234] where GWsystem is
the hostname or IP address of SUN DCS
GW.

Firmware update is complete.
->

```

10. Exit the Oracle ILOM CLI shell.

```

-> exit
exit
#

```

11. Reboot the gateway to enable the new firmware.

See *Gateway Administration*, restarting the entire switch.

Note – The restart process takes between 4 to 5 minutes to complete. The Oracle ILOM stack requires at least 2 minutes to become operational after a reboot.

The next time you log in to the gateway, the following message is displayed:

```
FW upgrade completed successfully on Thu Sep 5 19:17:10 IST 2013.  
For details see file /config/mon.autorun.out  
This message will be cleared on next reboot.
```

12. If previously disabled, log in as the root user and enable the Subnet Manager.

```
% ssh -l root nm2name  
root@nm2name's password: password  
# enablesm  
Starting IB Subnet Manager.                [ OK ]  
Starting partitiond daemon.                [ OK ]  
#
```

13. Verify the firmware version.

```
# version  
SUN DCS gw version: 1.3.5-1  
Build time: Sep 3 2013 13:17:44  
FPGA version: 0x34  
SP board info:  
Manufacturing Date: 2009.06.22  
Serial Number: "NCD3R0405"  
Hardware Revision: 0x0006  
Firmware Revision: 0x0102  
BIOS version: NOW1R112  
BIOS date: 04/24/2009  
#
```

In the first line of the output is SUN DCS gw version *x.y.z-w*, where *x.y.z-w* is the version of the firmware upgraded (or downgraded). For example, 1.3.5-1.

