



# **NVIDIA Quantum-2 Firmware Release Notes**

## **v31.2010.4402 LTS**

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## **Note**

This is a long-term support (LTS) release. LTS is the practice of maintaining a software product for an extended period of time (up to three years) to help increase product stability. LTS releases include bug fixes and security patches.

## **Release Notes Update History**

| Revision | Date          | Description                                    |
|----------|---------------|--|
| 1.0      | Nov. 29, 2023 | Initial release of this release notes version. |

## **Overview**

Firmware, which is added at the time of manufacturing, is used to run user programs on the device and can be thought of as the software that allows hardware to run. Embedded firmware is used to control the functions of various hardware devices and systems, much like a computer's operating system (OS) controls the function of software applications. Firmware may be written into read-only memory (ROM), erasable programmable read-only memory (EPROM), or flash memory.

## **Firmware Download**

Please visit [nvidia.com/en-us/networking/Support/Support/FirmwareDownload](https://www.nvidia.com/en-us/networking/Support/Support/FirmwareDownload)

## **Document Revision History**

A list of the changes made to this document are provided in [Changes and New Features](#) and [Changes and New Features History](#).

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# Firmware Compatible Products

These are the release notes for the NVIDIA Quantum™-2 firmware. This firmware complements the NVIDIA Quantum switch with a set of advanced features, allowing easy and remote management of the switch.

This firmware supports the following protocols:

- InfiniBand—SDR, EDR, HDR, NDR

## Supported Switch Systems

This firmware supports the devices listed in the table below:

| Model Number | NVIDIA SKU                               | Description  |
|--------------|--|--|
| QM9790       | 920-9B210-00FN-0D2<br>920-9B210-00FN-0D0 | NVIDIA Quantum-2 based NDR InfiniBand Switch, 64 NDR ports, 32 OSFP ports, 2 Power Supplies (AC), Standard depth |

## Firmware Interoperability

This firmware version has been validated to work against platforms with the following firmware and software versions.

| HCA/Switch       | Firmware Version |
|------------------|------------------|
| NVIDIA Quantum-2 | 31.2010.4402     |
| NVIDIA Quantum   | 27.2010.4402     |
| ConnectX-7       | 28.37.1014       |

|            |                            |
|------------|----------------------------|
| HCA/Switch | Firmware Version           |
| ConnectX-6 | 20.37.1014                 |
| MFT        | Minimal version: 4.22.1-11 |

## Supported Cables

### Warning

NVIDIA does not support InfiniBand cables or modules not qualified or approved by NVIDIA.

## Switch and HCAs InfiniBand Cable Connectivity Matrix

NVIDIA Quantum™ based switches and NVIDIA® ConnectX® HCAs support HDR (PAM4, 50Gb/s per lane) and EDR (NRZ, 25Gb/s per lane) technologies. As the ConnectX adapter cards are identified by their maximum supported throughput (e.g., ConnectX-6 VPI 100Gb/s card can support either 2-lanes of 50Gb/s or 4-lanes of 25Gb/s), the exact connectivity will be determined by the cable that is being used.

As a reference:

| Speed Mode | Speed Supported    | Number of Lanes Used |
|------------|--------------------|----------------------|
| NDR        | 400Gb/s InfiniBand | 4 lanes of 100Gb/s   |
| NDR200     | 200Gb/s InfiniBand | 2 lanes of 100Gb/s   |
| HDR        | 200Gb/s InfiniBand | 4 lanes of 50Gb/s    |
| HDR100     | 100Gb/s InfiniBand | 2 lanes of 50Gb/s    |
| EDR        | 100Gb/s InfiniBand | 4 lanes of 25Gb/s    |

The following tables present the connectivity matrix, between NVIDIA Quantum based switches, ConnectX HCA, and the cables.

## Switch-to-Switch Connectivity

NVIDIA Quantum-2 switches come with OSFP cages. NVIDIA Quantum and Switch-IB 2 switches come with QSFP cages. The connectivity matrix below are separated into multiple tables due to the above physical differences between the switches.

| Switch           | Switch           | Cable           |             |             |             |
|------------------|------------------|-----------------|-------------|-------------|-------------|
|                  |                  | NDR Transceiver | NDR DAC/ACC | HDR DAC/AOC | EDR DAC/AOC |
| NVIDIA Quantum-2 | NVIDIA Quantum-2 | 2 × NDR         | 2 × NDR     | N/A         | N/A         |
| NVIDIA Quantum-2 | NVIDIA Quantum   | N/A             | N/A         | 2 × HDR     | 2 × EDR     |
| NVIDIA Quantum-2 | Switch-IB 2      | N/A             | N/A         | N/A         | 2 × EDR     |

## HCA-to-Switch Connectivity

| Switch                 |            | Adapter          | Cable   |         |                                     |
|------------------------|------------|------------------|---------|---------|-------------------------------------|
|                        |            |                  | HDR AOC | HDR DAC | HDR100 DAC/AOC (Copper Cables Only) |
| ConnectX-6 200Gb/s     | NDR Switch | NVIDIA Quantum-2 | 2 × HDR | 2 × HDR | 4 × HDR100                          |
| ConnectX-6 100Gb/s     |            | NVIDIA Quantum-2 | N/A     | 2 × EDR | 4 × HDR100                          |
| ConnectX-4/ ConnectX-5 |            | NVIDIA Quantum-2 | N/A     | 2 × EDR | N/A                                 |

## Supported Link Speed

The table below lists the current supported link speed.

| Speed | Cable   | Cable Length [meters] | Limitations                                |
|-------|---------|-----------------------|--|
| NDR   | Optical | Up to 30              | NDR optical cables support only NDR speed. |
|       | Copper  | Up to 2               |  |
| HDR   | Optical | Up to 30              | HDR optical cables support only HDR speed. |
|       | Copper  | Up to 2               |  |

## Validated and Supported Cables

| Speed | Cable OPN #  | Description   |
|-------|--------------|---|
| NDR   | MCP7Y50-N001 | NVIDIA passive copper splitter cable, IB NDR 800Gb/s to 4x200Gb/s, OSFP to 4xOSFP, 1m   |
| NDR   | MCP7Y50-N01A | NVIDIA passive copper splitter cable, IB NDR 800Gb/s to 4x200Gb/s, OSFP to 4xOSFP, 1.5m |
| NDR   | MCP7Y50-N002 | NVIDIA passive copper splitter cable, IB NDR 800Gb/s to 4x200Gb/s, OSFP to 4xOSFP, 2m   |
| NDR   | MCP7Y00-N001 | NVIDIA passive copper splitter cable, IB NDR 800Gb/s to 2x400Gb/s, OSFP to 2xOSFP, 1m   |
| NDR   | MCP7Y00-N01A | NVIDIA passive copper splitter cable, IB NDR 800Gb/s to 2x400Gb/s, OSFP to 2xOSFP, 1.5m |
| NDR   | MCP7Y00-N002 | NVIDIA passive copper splitter cable, IB NDR 800Gb/s to 2x400Gb/s, OSFP to 2xOSFP, 2m   |
| NDR   | MMS4X00-NL*  | NVIDIA twin port transceiver, 800Gbps, 2xNDR, OSFP, 2xMPO, 1310nm SMF, DR8, up to 30m   |
| NDR   | MCP4Y10-N00A | NVIDIA passive copper cable, IB twin port NDR, up to 800Gb/s, OSFP, 0.5m                |
| NDR   | MCP4Y10-N00B | NVIDIA passive copper cable, IB NDR, up to 800Gb/s, OSFP, 0.75m                         |

| Speed | Cable OPN #    | Description   |
|-------|----------------|---|
| NDR   | MCP4Y10-N001   | NVIDIA passive copper cable, IB NDR, up to 800Gb/s, OSFP, 1m                              |
| NDR   | MCP4Y10-N01A   | NVIDIA passive Copper cable, IB twin port NDR, up to 800Gb/s, OSFP, 1.5m                  |
| NDR   | MCP4Y10-N002   | NVIDIA passive copper cable, IB NDR, up to 800Gb/s, OSFP, 2m                              |
| HDR   | MCP7Y70-H001   | NVIDIA passive copper splitter cable, IB HDR 400Gb/s to 4x100Gb/s, OSFP to 4xQSFP56, 1m   |
| HDR   | MCP7Y70-H01A   | NVIDIA passive copper splitter cable, IB HDR 400Gb/s to 4x100Gb/s, OSFP to 4xQSFP56, 1.5m |
| HDR   | MCP7Y70-H002   | NVIDIA passive copper splitter cable, IB HDR 400Gb/s to 4x100Gb/s, OSFP to 4xQSFP56, 2m   |
| HDR   | MFA7U10-H003** | NVIDIA active fiber splitter cable, IB HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 3m    |
| HDR   | MFA7U10-H005** | NVIDIA active fiber splitter cable, IB HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 5m    |
| HDR   | MFA7U10-H010** | NVIDIA active fiber splitter cable, IB HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 10m   |
| HDR   | MFA7U10-H015** | NVIDIA active fiber splitter cable, IB HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 15m   |
| HDR   | MFA7U10-H020** | NVIDIA active fiber splitter cable, IB HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 20m   |
| HDR   | MFA7U10-H030** | NVIDIA active fiber splitter cable, IB HDR, 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 30m   |
| HDR   | MCP7Y60-H001   | NVIDIA passive copper splitter cable, IB HDR 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 1m   |
| HDR   | MCP7Y60-H01A   | NVIDIA passive copper splitter cable, IB HDR 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 1.5m |
| EDR   | MCP7Y60-H002   | NVIDIA passive copper splitter cable, IB HDR 400Gb/s to 2x200Gb/s, OSFP to 2xQSFP56, 2m   |



## **Warning**

\*The minimal required firmware version for MMS4X00-NL-QP1 cable is 45.110.234.\*\*The minimal required firmware version for MFA7U10-H0MFA7U10-H0xx is 40.120.327 .

## **Firmware Upgrade**

Firmware upgrade may be performed directly from any previous version to this version. To upgrade firmware, please refer to the NVIDIA Firmware Tools (MFT) package at [network.nvidia.com/products/adapter-software/firmware-tools/](https://network.nvidia.com/products/adapter-software/firmware-tools/)

## **PRM Revision Compatibility**

This firmware version complies with the NVIDIA Switches Programmer's Reference Manual (PRM), Rev 1.40 or later.

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# Changes and New Features

| Keyword | Description                     |
|---------|---------------------------------|
| General | See <a href="#">Bug Fixes</a> . |

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# Bug Fixes in This Firmware Version

The following table provides a list of bugs fixed in this version. For a list of bug fixed from previous versions, see [Bug Fixes History](#).

| Internal Ref. | Issues   |
|---------------|--|
| 3483915       | <b>Description:</b> Cable Low Temperature Alarm threshold not aligned with the PRM parameters.   |
|               | <b>Keywords:</b> Hardware  |
|               | <b>Discovered in Version:</b> 31.2010.4210   |
|               | <b>Fixed in Version:</b> 31.2010.4402  |
| 3372998       | <b>Description:</b> MAD error responses might be received in libsharp when operating in dynamic trees allocation mode.   |
|               | <b>Keywords:</b> SHARP   |
|               | <b>Discovered in Version:</b> 31.2010.4210   |
|               | <b>Fixed in Version:</b> 31.2010.4402  |
| 3459209       | <b>Description:</b> On rare occasions, a 'group join' request may timeout.   |
|               | <b>Keywords:</b> SHARP   |
|               | <b>Discovered in Version:</b> 31.2010.4210   |
|               | <b>Fixed in Version:</b> 31.2010.4402  |
| 3586423       | <b>Description:</b> Credits mechanism "low priority credits" feature overloaded the links with credit packets, reducing the available bandwidth for transmitting data packets on the link. |
|               | <b>Keywords:</b> Bandwidth   |
|               | <b>Discovered in Version:</b> 31.2010.4210   |

| Internal Ref. | Issues  |
|---------------|---|
|               | <b>Fixed in Version:</b> 31.2010.4402   |
| 3677386       | <b>Description:</b> Fixed shared buffer credit management scheme that effected the overall bandwidth performance of the switch. |
|               | <b>Keywords:</b> Buffers, Performance   |
|               | <b>Discovered in Version:</b> 31.2010.4210  |
|               | <b>Fixed in Version:</b> 31.2010.4402   |

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# Known Issues

The following sections describe known issues in firmware releases and possible workarounds.

| Internal Ref. | Issue   |
|---------------|---|
| 2974424       | <b>Description:</b> Currently, on cables that perform polarity inversion there is no link up.                                     |
|               | <b>Workaround:</b> N/A  |
|               | <b>Keywords:</b> Cables, Polarity Inversion   |
|               | <b>Discovered in Version:</b> 31.2010.3118  |
| 2922333       | <b>Description:</b> In some cases, MMS4X00-NL1.2 may have low BER.  |
|               | <b>Workaround:</b> N/A  |
|               | <b>Keywords:</b> Signal Integrity   |
|               | <b>Discovered in Version:</b> 31.2010.2110  |
| 2838195       | <b>Description:</b> Using NDR speed with Optical Transceivers causes bandwidth to be 350Gb/s instead of 400Gb/s in small packets. |
|               | <b>Workaround:</b> N/A  |
|               | <b>Keywords:</b> Optical Transceivers   |
|               | <b>Discovered in Version:</b> 31.2010.1310  |
| 2834238       | <b>Description:</b> When using Optical Transceiver, toggling a port in a cage may toggle the adjacent port in the cage.           |
|               | <b>Workaround:</b> N/A  |
|               | <b>Keywords:</b> Optical Transceivers, Port Toggle  |
|               | <b>Discovered in Version:</b> 31.2010.1310  |

| Internal Ref.        | Issue  |
|----------------------|--|
| 955641               | <b>Description:</b> VL_HIGH_LIMIT is not affecting the VL arbiter as expected.   |
|                      | <b>Workaround:</b> Arbitration table should be set using only the low priority VL arbitration table.                               |
|                      | <b>Keywords:</b> VL Arbitration  |
|                      | <b>Discovered in Version:</b> 31.2010.1310   |
| 1249608              | <b>Description:</b> Configuring weight "0" for VL, results in unexpected behavior.   |
|                      | <b>Workaround:</b> Arbitration table should be configured with weights other than "0".   |
|                      | <b>Keywords:</b> VL Arbitration  |
|                      | <b>Discovered in Version:</b> 31.2010.1310   |
| 2057793              | <b>Description:</b> Congestion profiles in VS-MAD PortProfileSetting support only fixed mode. Percentage mode is not supported.    |
|                      | <b>Workaround:</b> N/A   |
|                      | <b>Keywords:</b> InfiniBand Congestion Control   |
|                      | <b>Discovered in Version:</b> 31.2010.1310   |
| Unsupported Features | Features that are not yet supported in the NVIDIA Quantum-2 systems: <ul style="list-style-type: none"> <li>• IB Router</li> </ul> |

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# Changes and New Features History

| Keyword | Description                     |
|---------|---------------------------------|
|         | 31.2010.4302                    |
| General | See <a href="#">Bug fixes</a> . |

| Keyword | Description                     |
|---------|---------------------------------|
|         | 31.2010.4210                    |
| General | See <a href="#">Bug fixes</a> . |

| Keyword | Description             |
|---------|-------------------------|
|         | 31.2010.4102            |
| General | Stability improvements. |

| Keyword                    | Description   |
|----------------------------|---|
|                            | 31.2010.4010  |
| pFRN Collector             | Added support for mirroring of PFRN packets towards UFM entity (collector) in the subnet. |
| PKEY Filter for Multicast  | Added support for MulticastPKeyTrapSuppression (PKEY mismatch filtering).                 |
| Congestion Control Updates | Added support for 1kb granularity for the port congestion profiles.                       |
| SL-to-VL Mapping           | Added switch support for port mask optimization of SL-to-VL Mapping Table configuration.  |
| General                    | See <a href="#">Bug fixes</a> .   |

| Keyword            | Description  |
|--------------------|--|
| 31.2010.3118       |  |
| Hash-Based Routing | Enabled the reordering of sensitive traffic to load balance on multiple ports by using Hash-Based Routing. |
| General            | See <a href="#">Bug fixes</a> .  |

| Keyword      | Description   |
|--------------|---|
| 31.2010.3004 |   |
| Counters     | Added support for PortXmitWaitVLExtended counters.  |
| pFRN         | Added support for pFRN (Proactive Fault Routing Notification) which allows for dynamic link failure detection and route correction for topologies based on Adaptive Routing |
| General      | See <a href="#">Bug fixes</a> .   |

| Keyword      | Description   |
|--------------|---|
| 31.2010.2300 |   |
| SHARPV3      | Added GA-level support for aggregation jobs to run over parallel links. |
| General      | <a href="#">Bug fixes</a> .   |

| Keyword      | Description   |
|--------------|---|
| 31.2010.2246 |   |
| SHARPV3      | Added beta-level support for aggregation jobs to run over parallel links. |
| General      | <a href="#">Bug fixes</a> .   |

| Keyword      | Description  |
|--------------|--|
| 31.2010.2110 |  |
| SHARPV3      | Added GA-level support for SHARPV3 on Quantum-2 systems. |
| General      | <a href="#">Bug fixes</a> .                              |



| Keyword               | Description   |
|-----------------------|---|
| 31.2010.2036          |   |
| Systems               | Added power and system monitoring optimizations.                        |
| SHARP V3              | Added beta-level support for SHARP V3 on Quantum-2 systems.             |
| Hash Based Forwarding | Added alpha-level support for Hash Based Forwarding Routing Capability. |
| Security              | Added security enhancements to QM9790 system.                           |

| Keyword   | Description   |
|---|---|
| 31.2010.1310  |   |
| Systems   | Added GA-level support for NVIDIA Quantum-2-based switch QM9790.                        |
| Congestion Control  | Added ES-level support for congestion control class key.                                |
| Vendor Key  | Added ES-level support for vendor class key.  |
| Hierarchy Information   | Added support for Hierarchy Information mad.  |
| Remote Debug Token  | Added support for Remote Debug Token.   |
| NVIDIA® Scalable Hierarchical Aggregation and Reduction Protocol (SHARP)™ | Added GA-level support for SHARPV2 for NVIDIA Quantum-2 systems.                        |
| Counters  | Added support for PortVLXmitFlowCtlUpdateErrors counters.                               |
| Security  | Added support for Secure Firmware and Secure Firmware Boot on NVIDIA Quantum-2 systems. |

# Bug Fixes History

The following table provides a list of bugs fixed in previous versions. For a list of bug fixed from the current version, see [Bug Fixes](#).

| v31.2010.4302 |   |
|---------------|---|
| Internal Ref. | Issues  |
| 3404837       | <b>Description:</b> On rare occasions, SHARP semaphore may remain locked on a port following an event of port link down.  |
|               | <b>Keywords:</b> Counters   |
|               | <b>Discovered in Version:</b> 31.2010.4210  |
|               | <b>Fixed in Version:</b> 31.2010.4302   |
| 3301825       | <b>Description:</b> The firmware does not return values for the counters "PortSwLifetimeLimitDiscards" and "PortSwHOQLifetimeLimitDiscards". Support has now been added for the counters.   |
|               | <b>Keywords:</b> Counters   |
|               | <b>Discovered in Version:</b> 31.2010.3118  |
|               | <b>Fixed in Version:</b> 31.2010.4302   |
| 3435346       | <b>Description:</b> In QM9700 systems, the flint burning firmware process might take longer than expected, possibly leading to timeouts in SM and logical links drops by the SM, which, in turn, may lead to failure of the flint burn command. |
|               | <b>Keywords:</b> SM, Timeout, Flint, Failure  |
|               | <b>Discovered in Version:</b> 31.2010.4210  |
|               | <b>Fixed in Version:</b> 31.2010.4302   |
| 3459209       | <b>Description:</b> On rare occasions, a 'group join' request may reach a timeout.  |
|               | <b>Keywords:</b> SHARP  |

| v31.2010.4302 |   |
|---------------|---|
|               | <b>Discovered in Version:</b> 31.2010.4210  |
|               | <b>Fixed in Version:</b> 31.2010.4302   |
| 3459209       | <b>Description:</b> On rare occasions, a 'group join' request may reach a timeout.  |
|               | <b>Keywords:</b> SHARP  |
|               | <b>Discovered in Version:</b> 31.2010.4210  |
|               | <b>Fixed in Version:</b> 31.2010.4302   |
| 3412574       | <b>Description:</b> Bandwidth is lower than expected on MMS4X00-NL-QP1 cable.   |
|               | <b>Keywords:</b> MMS4X00-NL-QP1, Bandwidth  |
|               | <b>Discovered in Version:</b> 31.2010.4210  |
|               | <b>Fixed in Version:</b> 31.2010.4302   |
| 3365516       | <b>Description:</b> In rare cases that involves stress of traffic, unexpected hardware fast path behavior may occur, which, when toggling the port, could lead to the firmware hanging. |
|               | <b>Keywords:</b> Port, Turbo Path   |
|               | <b>Discovered in Version:</b> 31.2010.4210  |
|               | <b>Fixed in Version:</b> 31.2010.4302   |

| v31.2010.4210 |  |
|---------------|--|
| Internal Ref. | Issues   |
| 3261861       | <b>Description:</b> Connecting an HDR device to an NDR device with Optical cables longer than 30m causes degradation in the bandwidth. |
|               | <b>Keywords:</b> HDR-to-NDR  |
|               | <b>Discovered in Version:</b> 31.2010.4102   |
|               | <b>Fixed in Version:</b> 31.2010.4210  |
| 3335002       | <b>Description:</b> pFRN mirror v1 header pad count showed an invalid padding size.  |

| v31.2010.4210 |   |
|---------------|---|
|               | <b>Keywords:</b> PFRN   |
|               | <b>Discovered in Version:</b> 31.2010.4010  |
|               | <b>Fixed in Version:</b> 31.2010.4210   |
| 3199650       | <b>Description:</b> A physical link failure between switches while a SHARP job is running and utilizing the link can cause one of the switches to become invalid for further SHARP jobs. This can result in either a "No resource" response for new SHARP job requests or in jobs getting stuck.<br>The bug fix requires SHARP version 3.2. |
|               | <b>Keywords:</b> SHARP  |
|               | <b>Discovered in Version:</b> 31.2010.4010  |
|               | <b>Fixed in Version:</b> 31.2010.4102   |
| 3245821       | <b>Description:</b> In case of an AR group table set request, the ARN mask is flushed for group that has an active pFRN timer.  |
|               | <b>Keywords:</b> PFRN   |
|               | <b>Discovered in Version:</b> 31.2010.4010  |
|               | <b>Fixed in Version:</b> 31.2010.4102   |
| 3253717       | <b>Description:</b> mask_force_clear_timeout timer in pFRN feature was not functional (the mask was not cleared when the timer expired).  |
|               | <b>Keywords:</b> PFRN   |
|               | <b>Discovered in Version:</b> 31.2010.4010  |
|               | <b>Fixed in Version:</b> 31.2010.4102   |
| 3242209       | <b>Description:</b> Set PFRN mad did not return error on wrong inputs in mask_clear_timer and mask_force_clear_timer fields.  |
|               | <b>Keywords:</b> PFRN   |
|               | <b>Discovered in Version:</b> 31.2010.4010  |
|               | <b>Fixed in Version:</b> 31.2010.4102   |
| 3174239       | <b>Description:</b> On rare occasions, traps were not properly repressed, which caused redundant traps to be sent multiple times.   |

| v31.2010.4210 |  |
|---------------|--|
|               | <b>Keywords:</b> Traps   |
|               | <b>Discovered in Version:</b> 31.2010.3118   |
|               | <b>Fixed in Version:</b> 31.2010.4010  |
| 3002314       | <b>Description:</b> On rare occasion, when port is configured to mloop toggle may cause link to not rise.  |
|               | <b>Keywords:</b> Optic in Mloop  |
|               | <b>Discovered in Version:</b> 31.2010.2110   |
|               | <b>Fixed in Version:</b> 31.2010.3118  |
| 3127727       | <b>Description:</b> On rare occasion, when egress port is split to two, the egress port may get stuck due to wrong Fast Path configuration.  |
|               | <b>Keywords:</b> Switch Hang, Fast Path, Split   |
|               | <b>Discovered in Version:</b> 31.2010.3004   |
|               | <b>Fixed in Version:</b> 31.2010.3118  |
| 3082569       | <b>Description:</b> In some traffic patterns involving small packets, the PortRcvErrors counter may mistakenly count events of local physical errors due to an internal flow in the hardware that involves link packets. |
|               | <b>Keywords:</b> Counters  |
|               | <b>Discovered in Version:</b> 31.2010.2246   |
|               | <b>Fixed in Version:</b> 31.2010.3004  |
| 3085427       | <b>Description:</b> On rare occasions, SHARP semaphore may remain locked on a port following an event of a port link down or an application crash.   |
|               | <b>Keywords:</b> SHARPV3   |
|               | <b>Discovered in Version:</b> 31.2010.2036   |
|               | <b>Fixed in Version:</b> 31.2010.3004  |
| 3011581       | <b>Description:</b> On rare occasions, job failures with SharpError trap may be experienced as a result of previous jobs that have failed.   |
|               | <b>Keywords:</b> SHARPV3   |

|               |   |
|---------------|---|
| v31.2010.4210 |   |
|               | <b>Discovered in Version:</b> 31.2010.2036  |
|               | <b>Fixed in Version:</b> 31.2010.3004   |
| 3000602       | <b>Description:</b> After disconnecting MMS4X00-NL* cable and connecting Ultrason cable to the same port, ports fails to link up.   |
|               | <b>Keywords:</b> Cables   |
|               | <b>Discovered in Version:</b> 31.2010.2110  |
|               | <b>Fixed in Version:</b> 31.2010.2300   |
| 3060122       | <b>Description:</b> In the event of link fault of a link between root switch and non-root switch during the run of a job, the next job run on the non-root switch may fail. |
|               | <b>Keywords:</b> SHARPV3  |
|               | <b>Discovered in Version:</b> 31.2010.2036  |
|               | <b>Fixed in Version:</b> 31.2010.2300   |
| 2923464       | <b>Description:</b> When using MMS4X00-NL Optical module, on rare occasions port that is in NDR speed may get stuck and stay in Polling state.                              |
|               | <b>Keywords:</b> NDR, Optical Module  |
|               | <b>Discovered in Version:</b> 31.2010.1404  |
|               | <b>Fixed in Version:</b> 31.2010.2246   |
| 2859363       | <b>Description:</b> When using NVIDIA Quantum-2 systems in Auto-Neg mode, NDR speed in one lane (1x) is not supported.  |
|               | <b>Keywords:</b> Auto-Negotiation   |
|               | <b>Discovered in Version:</b> 31.2010.1310  |
|               | <b>Fixed in Version:</b> 31.2010.2246   |
| 3033131       | <b>Description:</b> The number of flows changed from 2 to 1, as intended.   |
|               | <b>Keywords:</b> SHARPV3  |
|               | <b>Discovered in Version:</b> 31.2010.2110  |

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| v31.2010.4210 |  |
|               | <b>Fixed in Version:</b> 31.2010.2246  |
| 2972388       | <b>Description:</b> Running of concurrent jobs may lead to states where jobs unexpectedly terminate or get stuck.  |
|               | <b>Keywords:</b> SHARPV3   |
|               | <b>Discovered in Version:</b> 31.2010.2036   |
|               | <b>Fixed in Version:</b> 31.2010.2110  |
| 2982113       | <b>Description:</b> On rare occasions, job resource cleanup may fail.  |
|               | <b>Keywords:</b> SHARPV3   |
|               | <b>Discovered in Version:</b> 31.2010.2036   |
|               | <b>Fixed in Version:</b> 31.2010.2110  |
| 2971339       | <b>Description:</b> During high load scenarios, performance degradation may be experienced.  |
|               | <b>Keywords:</b> SHARPV3   |
|               | <b>Discovered in Version:</b> 31.2010.2036   |
|               | <b>Fixed in Version:</b> 31.2010.2110  |
| 2849215       | <b>Description:</b> On NVIDIA Quantum-2 switches, when working with MFA7U10-H0xx cables, if one of the ports in a cage is disabled at the time of initialization by user configuration, reenabling the port will require toggling the link (i.e. enable disable enable). |
|               | <b>Keywords:</b> NVIDIA Quantum-2, Cables  |
|               | <b>Discovered in Version:</b> 31.2010.1310   |
|               | <b>Fixed in Version:</b> 31.2010.2036  |
| 2890632       | <b>Description:</b> On NVIDIA Quantum-2 systems, changing the Optical module rate was not allowed.   |
|               | <b>Keywords:</b> Optical Modules   |
|               | <b>Discovered in Version:</b> 31.2010.1310   |
|               | <b>Fixed in Version:</b> 31.2010.2036  |

| v31.2010.4210 |  |
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| 2885798       | <b>Description:</b> In NVIDIA Quantum-2 systems, effective errors may occur with short Copper cable MCP4Y10-N00B.                                    |
|               | <b>Workaround:</b> N/A   |
|               | <b>Discovered in Version:</b> 31.2010.1310   |
|               | <b>Fixed in Version:</b> 31.2010.2036  |
| 2910161       | <b>Description:</b> In auto-negotiation flow, using copper cables when toggling both port's sides may cause the port to get stuck on rare occasions. |
|               | <b>Keywords:</b> Auto-Negotiation, Copper Cables   |
|               | <b>Discovered in Version:</b> 31.2010.1310   |
|               | <b>Fixed in Version:</b> 31.2010.2036  |

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