Brocade Fabric OS v3.1.1c

Release Notes

October 10th, 2003

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General Information

Fabric OS 3.1.1c is a patch release that contains fixes to a small number of additional issues detected. Brocade software release policy is to carry forward all fixes in patches to subsequent maintenance and feature releases of Fabric OS. Aside from these changes, it is functionally identical to Fabric OS 3.1.1b. These Release Notes will refer to "Fabric OS 3.1" when making statements that apply to Fabric OS 3.1.0 and 3.1.1x.

Overview

About This Release

Fabric OS 3.1.0 represents the first major feature revision to the Fabric OS v3.0.2 firmware. It should be considered an upgrade and replacement for Fabric OS 3.0.2x, which supports SilkWorm 3200 (3534-F08) and SilkWorm 3800 (2109-F16).

Fabric OS v3.1.1c includes the following changes:

- Fixes to defects as detailed in the List Of Defects Closed Since 3.1.1b

Supported Switches

Fabric OS 3.1.1c supports SilkWorm 3200, 3200VL (3534-F08), 3800, 3800VL2, and 3800VL4 (2109-F16).

Technical Support

Contact your switch support supplier for hardware, firmware, and software support, including product repairs and part ordering. To assist your support representative, have the following three sets of information immediately available when you call:

1. General Information
- Technical Support contract number, if applicable
- switch model
- switch operating system version
- error messages received
- **supportshow** command output
- detailed description of the problem and specific questions
- description of any troubleshooting steps already performed and results

2. Switch Serial Number

The switch serial number and corresponding bar code are provided on the serial number label, as shown below.

Type 2109-F16 **S/N PPSSSSS**	**Type 3534-F08** **S/N PPSSSSS**

The serial number label is located as follows:
- *SilkWorm 2000 series (2109-S16/S08 & 3534-1RU) switches:* Bottom of chassis
- *SilkWorm 3200 (3534-F08) and 3800(2109-F16) switches: Front and bottom* of chassis
- *SilkWorm 3900 (2109-F32) switches: Front and b*ottom of chassis
- *SilkWorm 6400 and 12000 (2109-M12) switches:* Inside front of chassis, on wall to left of ports

3. World Wide Name (WWN)
- *SilkWorm 3900 (2109-F32) and 12000 (2109-M12) switches:* Provide the license ID. Use the **licenseidshow** command to display the license ID.

- *All other SilkWorm (2109 & 3534) switches:* Provide the switch WWN. Use the **wwn** command to display the switch WWN.

Documentation

Supporting Documentation

Fabric OS 3.1.1c uses the same documentation as Fabric OS 3.1.0.

In addition to these release notes, this release is supported by the following documentation:

SilkWorm switch documentation:

- *SilkWorm 3200 QuickStart Guide* (provided as hardcopy with the switch)

- *SilkWorm 3200 Hardware Reference Manual*

- *SilkWorm 3800 QuickStart Guide*

- *SilkWorm 3800 Hardware Reference Manual*

Fabric OS v3.1 software documentation:

- *Brocade Fabric OS Reference v3.1.0*

- *Brocade Fabric OS Procedures Guide v3.1.0*

- *Brocade QuickLoop User's Guide v3.1.0*

- *Brocade Advanced Zoning User's Guide v3.1.0/v4.1.0*

- *Brocade Advanced Web Tools User'sGuide v3.1.0*

- *Brocade Advanced Performance Monitoring User's Guide*

- *Brocade Distributed Fabrics User's Guide v3.1.0/v4.1.0*

- *Brocade Fabric Watch User's Guide v3.1.0*

- *Brocade ISL Trunking User's Guide v3.1.0/v4.1.0*

- *Brocade Secure Fabric OS User's Guide v3.1.0/v4.1.0*

- *Brocade MIB Reference Manual v2.6.1/v3.1.0/v4.1.0*

- *Brocade Diagnostic and System Error Message Reference Manual v3.1.0*

These documents are available in PDF format on the documentation CD-ROM provided with the switch or you can find most of the documentation at the following Web site:

http://www.storage.ibm.com/ibmsan/products/2109/library.html#support

Release Contents Summary

Brocade Fabric OS v3.1 adds the following enhancements and new features to Fabric OS v3.0.2x:

- Support for the optionally licensed Secure Fabric OS product. Secure Fabric OS includes the following features:
  - A new, centralized fabric management model in which all fabric-wide management operations must originate from the Fabric Configuration Server (trusted switch)
  - Management Access Controls to secure and limit all means of switch and fabric management

- o Switch Connection Controls and Device Connection Controls, which strictly control what switches and devices, can participate in the fabric

- o Standards-based authentication using digital certificates and PKI (Public Key Infrastructure) of all switches in the fabric, to prevent unauthorized switches from joining the fabric

- o A workstation-based utility, PKICERT, to acquire and install digital certificates for all switches in the fabric that do not already have them. The digital certificates are required to enable secure mode

- Enhanced manageability

  - o Port naming

  - o New Web Tools switch explorer GUI. Replacement of the Fabric View panel with a "switch explorer" tree – an approach that allows Web Tools to handle larger fabrics more efficiently

  - o Fabric Watch security and health monitoring. Improved reporting of port and switch uptime statistics

  - o API support

  - o FDMI (Fabric Device Management Interface). Support for the Fabric Device Management Interface, allowing centralized management of some host bus adapters through the fabric, including the download of new HBA firmware to the HBAs through the fabric

  - o Disabling and enabling of ports and of entire switches can now be made persistent across reboots and power cycles

- Zoning enhancements:

  - o New commands for searching the Zoning data base

  - o Improved performance

  - o More selective SCNs, now sent only to devices in zones where there has been a status change among the online members of those zones

- External time server synchronization

  - o Synchronizes time among switches in the fabric

  - o Fabric time can be set from a CLI session or obtained from an external NTP server

- Ports can be configured to negotiate directly to R_RDY flow control mode, simplifying operations by allowing the connection of many WAN gateway products without a remote switch license

For more details of these features, please refer to the user's guides.

Information About Secure Fabric OS

Brocade Secure Fabric OS is a comprehensive security product that requires some planning and specific steps to set up and configure. For this purpose, the following document should be reviewed as a minimum of preparation prior to getting started:

- *Secure Fabric OS Quick Start Guide*

For more detailed product information, refer to the *Secure Fabric OS User's Guide*.

Important Notes

OS Requirements

The following table summarizes the versions of Brocade firmware and software supported in this release:

	2109-S16/S08 & 3534-1RU	2109-F16 & 3534-F08	2109-F32 & 2109-M12	Fabric Manager
General compatibility	2.6.0c or later	3.0.2c or later	4.0.0c or later	3.0.2c or later
With Secure Fabric OS enabled	2.6.1 or later	3.1.0 or later	4.1.0 or later	3.0.2c or later
Recommended adjacent to SW 3900s (2109-F32) running 4.1.0 or later	2.6.1 or later	3.1.0 or later	4.1.0 or later	3.0.2c or later

Note: For Fabric OS v2.x or Fabric OS v3.x switches, you must enable core switch PID format (that is, set to 1) using the **configure** command before it can interconnect with SilkWorm 3900 (2109-F32) and SilkWorm 12000 (2109-M12). For more information on core switch PID format, refer to "Updating the Core PID Format" in the *Fabric OS Procedures Guide*.

For more information about configuring SilkWorm 2000 (1RU/S08/S16) series, SilkWorm 3000 (F08/F16) series, or SilkWorm 6400 integrated fabric to interoperate in the same fabric with SilkWorm 3900 (F32) and SilkWorm 12000 (M12) switches, contact your switch provider.

SilkWorm 2000 Series Scalability Support

Exhaustive testing has demonstrated that SilkWorm 2000 (1RU/S08/S16) series switches should not be deployed in fabrics that exceed 728 SAN devices.

Maximizing Fabric Availability During SW3900 (F32) Hot Code Activation

During code activation on a SilkWorm 3900 (F32) switch running Fabric OS 4.1.0 or later, data keeps flowing between hosts and storage devices. However, fabric services are unavailable for a period of approximately 50-55 seconds. Possible disruption of the fabric can be minimized by ensuring that switches logically adjacent to SilkWorm 3900 (F32 directly connected through an ISL) are running Fabric OS 2.6.1 or later, 3.1.0 or later, or 4.1.0 or later. More information is available in the "Firmware Download" section of the *Fabric OS Procedures Guide*.

Microsoft Internet Explorer Issue

There is an issue with Microsoft Internet Explorer 5.0 and 5.5 running on Windows NT 4.0. Normally, when you launch a copy of the Switch Explorer applet, the left panel displays a tree of switches in your fabric. Clicking a tree node causes the right panels to refresh to the currently selected switch; however, under NT/4.0 and IE 5.0/5.5, the right panel does *not* update the second and subsequent instances of Switch Explorer.

Microsoft addresses the issue at: http://support.microsoft.com/default.aspx?scid=KB;en-us;242167&.

There are two workarounds:
1. Always use a single instance of Switch Explorer on NT/4.0 and IE 5.0/5.5
2. Install IE 6.0 SP1

Alternatively, you could obtain a workaround directly from Microsoft. Contact Microsoft support and supply them the information in the defect, as described in the previous URL.

Interpreting Ambient and Internal Temperatures

Brocade SilkWorm fabric switches are instrumented with temperature sensors to monitor the operating characteristics of products and their environment. Ambient temperature (environmental temperature) is the recommended room temperature for the switch, through the chassis air intake. Individual components within the switch might have a higher range. The command **tempShow** and Fabric Watch both show the temperature for of all components within the switch. The following table shows acceptable ambient and internal switch temperature ranges.

Sensor	Minimum	Maximum	Comments
SilkWorm 3200 (3534-F08)			
Ambient temperature	0° C	40° C	Recommended temperature of the room in which the switch is placed. Power supply might shutdown if room ambient is above 65° C.
Switch temperature	0° C	74° C	Switch sends warning when internal temperature is higher than 74° C.
SilkWorm 3800 (2109-F16)			
Ambient temperature	0° C	40° C	Recommended room temperature at which the switch is placed. Power supply may shutdown if room ambient is above 55° C.
Switch temperature	0° C	74° C	Switch sends warning at internal temperature above 74° C.

Other Important Notes

This table lists important information you should be aware of regarding Fabric OS v3.1.0.

Area	Description
LTO 2 Tape Drive Support	When using the LTO 2 Tape Drive, you must perform the following command on both Fabric OS 3.x and 4.x: switch> portcfggport *port# where drive is plugged into* This allows the tape drive to function in point-to-point mode rather than in loop.
Security, PKICERT utility	Before using the PKICERT utility to prepare a Certificate Signing Request (CSR), ensure that there are no spaces in the switch names of any switches in the fabric. The Web site that processes the CSRs and generates the digital certificates does not accept switch names containing spaces; any CSRs that do not conform to this requirement will be rejected.
Security, Secure mode, **passwd telnet**	Using the **passwd telnet** command in Secure mode to change the password results in all sessions using that password to be logged out, including the session that changed the session. This is expected behavior. The session terminates if you change the password in Secure mode.
Web Tools, Java bug	If a dialog is displayed from the switch admin window of Web Tools and the user selects another dialog from Web Tools, a windows display error results. This is a known defect in Java 1.3, documented at www.java.sun.com, bug ID 4763605. To avoid the display error, open only one dialog box at a time or launch another switch admin session in a separate window.

Area	Description
Zoning	To use Zoning in a non-RCS (Reliable Commit Service) –mode fabric (that is, in a fabric containing switches with firmware version other than v2.6.x, v3.1.0 and v4.1.0) all appropriate Zoning licenses should be installed on all the switches in the fabric before you attempt to bring a switch in to the fabric. Furthermore, if the Zoning license is to be removed, you must make sure it is reinstalled properly on the affected switch before attempting **cfgenable** zoning operation. Failure to follow these steps can cause inconsistency of Zoning configuration on the affected switches should a zoning operation be attempted from a remote switch in the fabric. On the affected switches, an error message appears on the console or telnet session (also visible if you enter **errShow** or **errDump**) indicating that the zoning license was missing.
Two domain fabric license	Starting with Fabric OS v3.1.1b, a minor change was implemented allowing two-switch fabric software license. This code change leveraged existing logic on 4-switch fabric limitation detection to 2-switch fabric limitation. When a 2-switch fabric license is detected, the existing identifier is set accordingly.

Documentation Addendum

This section provides information on last minute additions to the documentation.

Brocade Fabric OS v3.1.0 and v3.1.1 Release Notes

In Fabric OS v3.1.0 and v3.1.1 Release Notes, the SilkWorm 2xxx Scalability Limit section specifies that fabrics containing Fabric OS v2.6.1 or later should not exceed 500 user (non-ISL) ports or devices. Brocade has increased to 728 devices as the maximum number of devices supported in fabrics that include SilkWorm 2000 (1RU/S08/S16) series switches running Fabric OS v2.6.1 or later. This is only a change to the documentation. There is no change to the Fabric OS.

SilkWorm 3800 (F16) Hardware Reference Manual
(publication number 53-0001576-06)

The following statement should be added to the Port Status LED information for when the port status is "offline" in Table 3-1 "Port Side LED Patterns During Normal Operation", on page 3-2.

"When a Port Status LED indicator light is off, another possible hardware status is offline."

Brocade ISL Trunking User's Guide, v3.1.0/4.1.0
(publication number 53-0000520-02)

Page 1-3 of the Brocade ISL Trunking User's Guide, v3.1.0/4.1.0 contains the following statement:

 "... ISL Trunking does not support the "LE", "L1", or "L2" **portcfglongdistance** modes. For information about these modes and Extended Fabrics in general, refer to the *Distributed Fabrics User's Guide*."

 This statement should be modified to say the following:

"...Trunking is supported for normal E_Ports (referred to as L0 in the **portcfglongdistance** command) with LWL media up to 5km at the full speed permitted by the link. With LWL media, the throughput begins to fall

off beyond 5km, due to normal latency effects. ISL Trunking does not support the "LE", "L1", or "L2" **portcfglongdistance** modes. For information about these modes and Extended Fabrics in general, refer to the *Distributed Fabrics User's Guide*."

Defects Closed In Fabric OS 3.1.1a

Defects Closed In Fabric OS v3.1.1a		
Defect ID	**Severity**	**Description**
DEFECT000026279	Critical	Summary: 3800 (2109-F16) switch port is left INSYNC after a reboot of the array Symptom: issue with the v3.0.2m firmware and the v3.1.1 firmware where after an SP reboot the switch port is left in the INSYNC state. Removing and inserting the cable or disabling and enabling the switch port allows the array to login successfully. Solution: Enable the LPSM_OPEN_INIT_RCVD interrupt when appropriate, to prevent the port from hanging during port initialization.

Defects Closed In Fabric OS 3.1.1b

Defects Closed In Fabric OS v3.1.1b		
Defect ID	**Severity**	**Description**
DEFECT000026551	Critical	Summary: Fabric 2 Reboot - StorOS Agent stopped Symptom: The switch reboots after 13 hours with SYS-NOMEM error when using BrocadeAgent running on a Solaris management station to poll the switches. Solution: While a command is in progress and is interrupted, memory could be lost as the command ungracefully aborts. This fix allows completion and de-allocation of resources before shutting the session down.
DEFECT000026398	High	Summary: The servers in the SAN failed to recover any drives when many drivers are power up at the same time. Symptom: In a fabric with zoning turned on, the LTO tape subsystem was powered down. After the SAN stabilized, the LTO was powered up. After 8 to 10 minutes, the servers that connected to the switch (Fabric OS v4.0.0x) with the tape subsystem successfully recovered all drives. However, the servers that connected to other switches in the SAN failed to recover any drives. Solution: From the traces, it shows that many PLOGIs were sent from the server after receiving the RSCNs, but only three of the PLOGI ACC were received back, other ACC to the PLOGI were dropped. The PLOGI and ACC were trapped by different filters. The solution is to update and synchronize the different filters to avoid this issue.

Defects Closed In Fabric OS v3.1.1b		
Defect ID	**Severity**	**Description**
DEFECT000033224	High	Summary: Support for 2-switch limit Symptom: 2-domain fabric is not enforced. Solution: A minor change supports two-switch fabric software license. This change leverages existing logic on 4-switch fabric limitation detection to 2-switch fabric limitation. When a 2-switch fabric license is detected, the existing identifier is set accordingly.

Defects Closed In Fabric OS 3.1.1c

Defects Closed In Fabric OS v3.1.1c		
Defect ID	**Severity**	**Description**
DEFECT000034534	High	Summary: Switch gets into hung state via telnet/shell interaction v3.1.1. Solution: Telnet/shell interactions had synchronization problems. It was possible to get the shell into a loop that would not allow communications to continue. Also, a 'double exit' internally on telnet may exist which would crash the shell, and cause flash corruption. This is fixed in this release. Brocade strongly suggests that users who have high telnet usage upgrade to this release.
DEFECT000034887	High	Summary: Switch Panic: INCONSISTENT - pt 6: RX/TX FIFO under/overflow. buf_error=a0160000 Solution: If there is CMEM RX overrun, the code finds out which port had the error, and recover the port by restart loop init and link reset.
DEFECT000035037	High	Summary: switch watchdog and keep rebooting after download firmware Solution: Avoid reading configuration parameter from flash in interrupt context, as it takes too long. Note: The field is not exposed to this problem. This is an internal defect during development phase.