Brocade Fabric OS v3.1.1f Release Notes_v1.0

March 15, 2004

Document History

Document Title	Summary of Changes	Publication Date
Brocade Fabric OS v3.1.1f Release Notes_v1.0	First release	March 15, 2004

TABLE OF CONTENTS

Overview

Fabric OS v3.1.1f 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, v3.1.1f is functionally identical to the last patch version, Fabric OS v3.1.1e. These Release Notes will refer to "Fabric OS v3.1" when making statements that apply to Fabric OS v3.1.0 and v3.1.1x.

About This Release

Fabric OS v3.1 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 v3.0.2, which supports SilkWorm 3200-series (3534-F08) and 3800-series (2109-F16) switches.

Fabric OS v3.1.1f includes the following changes:

- Fixes to defects as detailed in the list of Defects Closed in v3.1.1f, later in this document.

- In November 2003, Brocade started adding versioning to all Release Notes. This is a documentation format change and does not affect the actual code.

Supported Switches

Fabric OS v3.1.1f supports SilkWorm 3200, 3200VL, 3800, 3800VL2, and 3800VL4 (3534-F08 and 2109-F16) switches.

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	Type 3534-F08
S/N PPSSSSS	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 right 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.

Supporting Documentation

Fabric OS v3.1.1 uses the same documentation as Fabric OS v3.1.0.

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's Guide 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, except for the QuickStart Guide, as noted. Note that the *Brocade Diagnostic and System Error Message Reference Manual* might be provided on a separate CD-ROM from the rest of the documentation.

Note: The documentation on the CD-ROM provides information for both Fabric OS v3.1 and Fabric OS v4.1.

Release Contents Summary

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

- Support for the optionally licensed Secure Fabric OS product. Brocade Secure Fabric OS includes the following features:
  - o A new, centralized fabric-management model in which all fabric-wide management operations must originate from the Fabric Configuration Server (trusted switch)
  - o 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 which 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 Advanced 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 across reboots and power cycles

- Zoning enhancements:

  - o New commands for searching the Zoning database

  - o Improved performance

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

- External time server synchronization:

  - o Synchronized time among switches in the fabric

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

- Ability to configure ports 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, refer to the appropriate product 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. For this purpose, the following document should be reviewed as a minimum prior to starting:

- *Brocade Secure Fabric OS QuickStart Guide*

More detailed product information can be obtained from the *Brocade Secure Fabric OS User's Guide*.

Important Notes

This section includes the following topics:

- OS Requirements

- Maximizing Fabric Availability During SilkWorm 3900 (2109-F32) Hot Code Activation

- Microsoft Internet Explorer Issue

- Interpreting Ambient and Internal Temperatures

- Other Important Notes

OS Requirements

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

	2109-S08/S16 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 SilkWorm 3900s (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 (that is, set to 1) core switch PID format 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 *Brocade Fabric OS Procedures Guide.*

For more information about configuring SilkWorm 2000-series (2109-S08/S16 & 3534-1RU) or 3000-series (2109-F16 & 3534-F08) switches or the SilkWorm 6400 integrated fabric to interoperate in the same fabric with SilkWorm 3900 (2109-F32) and SilkWorm 12000 (2109-M12) switches, contact your switch provider.

Maximizing Fabric Availability During SilkWorm 3900 Hot Code Activation

During code activation on a SilkWorm 3900 (2109-F32) switch running Fabric OS v4.1.0 or later, data keeps flowing between hosts and storage devices, but 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 the SilkWorm 3900 (2109-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 *Brocade 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 Brocade Advanced Web Tools 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 running 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 running 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 the Brocade Fabric Watch product 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 shut down if room ambient is above 55° 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 temperature of the room in which the switch is placed. Power supply might shut down if room ambient is above 55° C.
Switch temperature	0° C	74° C	Switch sends warning when internal temperature is higher than 74° C.

Other Important Notes

This table lists important information you should be aware of regarding Fabric OS v3.1.

Area	Description
LTO 2 tape drive support	When using the LTO 2 tape drive, you must perform the following command on both Fabric OS v3.x and v4.x: switch> **portcfggport** *port# where drive is plugged into* This allows the tape drive to function in point-to-point mode rather than loop mode.
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 causes 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.
Two-domain fabric license	Starting with Fabric OS v3.1.1b, a minor change was implemented, allowing a two-switch fabric software license. This code change leveraged existing logic on four-switch fabric limitation detection to two-switch fabric limitation. When a two-switch fabric license is detected, the existing identifier is set accordingly.

Area	Description
Web Tools, Java bug	If a dialog box is displayed from the switch admin window of Web Tools and the user selects another dialog box 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.
Zoning	To use zoning in a non-RCS (Reliable Commit Service) mode fabric (that is, in a fabric containing switches with firmware versions other than v2.6.x, v3.1.0, and v4.1.0), install all appropriate zoning licenses on all the switches in the fabric before attempting 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.

Documentation Updates

This section provides information on last-minute additions and corrections 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 (2109-S08/S16 & 3534-1RU) 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 the maximum number of devices supported in fabrics that include SilkWorm 2000-series (2109-S08/S16 & 3534-1RU) 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 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 5 km at the full speed permitted by the link. With LWL media, the throughput begins to fall off beyond 5 km, due to normal latency effects. Brocade ISL Trunking does not support the "LE", "L1", or "L2" **portcfglongdistance** modes. For information about these modes and Brocade Extended Fabrics in general, refer to the *Distributed Fabrics User's Guide*."

Defects Closed in Fabric OS v3.1.1f

Defects Closed In Fabric OS v3.1.1f		
Defect ID	**Severity**	**Description**
DEFECT000033809	High	Summary: NSd: device using ALPA 00 on port with multiple devices causes switch panic Customer Symptom: Switch panic with memfree Solution: Change pid hash table to accommodate alpa 0 device if it's on a multiple device port. SR#. RQST00000027856
DEFECT000033925	Med	Summary: Fabric Watch misreport Fan threshold. Customer Symptom: Observe following message at login: "WARNING: envFan001 is below threshold with 0 RPM", when all fans are OK. Solution: Use the last event index instead of the last alarmed event index to get the correct data. SR#. RQST00000024573
DEFECT000037174	Med	Summary: SilkWorm 3800 (2109-F16)/SilkWorm 3600 failing marginally due to invalid temperature warning. Customer Symptom: Observe following message: 0x101e8d60 (tThad): Mar 1 17:33:57 WARNING FW-BELOW, 3, envTemp001 (Env Temperature 1) is below low boundary. Current value: -60 C. (faulty) Solution: 1. Making sure that temperature A/D converter value is read into internal data structure before making the data available to monitoring software 2. Make sure to wait to 1.2s before pull A/D convert data during power on to accommodate worst-case sensor initialization time. SR#. RQST00000027597
DEFECT000037236	High	Summary: GID_FT request fails with certain HBA on SilkWorm 3800 (2109-F16). Customer Symptom: When HBA issues a GID_FT request and the accept response from SilkWorm 3800 (2109-F16) switch has the wrong TYPE and no Subtype. Solution: Corrected the function ctRealloc, which messed up the iu_ahdr and iu_data pointers of the iu in a corner case. SR#. RQST00000026594

Defects Closed In Fabric OS v3.1.1f		
Defect ID	**Severity**	**Description**
DEFECT000037674	High	Summary: Switch sends out a LIRP frame that does not contain all the devices on the loop. The bad LIRP precipitates a loop re-initialization. Customer Symptom: It takes over 10 seconds to initialize the loop in quick loop mode. Solution: Fix unprotected access to pltmap. SR#. RQST00000026295

DEFECT000037701	High	Summary: Switch fails to send swFabricWatchTrap.
		
		Customer Symptom: Remove and insert the ISL several times, observe that switch fails to send swFabricWatchTrap for events in the following areas:
		   - eportSync
		   - eportSignal
		   - eportState
		   - fopportLink
		   - fopportSync
		   - fopportSignal
		   - fopportState
		
		Solution: Change the interface called to get thresholds on errors for a port, as the port may be offline by the time we decide to send a trap.
		
		SR#. RQST00000026464

Defects Closed in Fabric OS v3.1.1e

Defects Closed In Fabric OS v3.1.1e		
Defect ID	**Severity**	**Description**
DEFECT000037241	High	Summary: Interoperability issue between Emulex LP952L and Fabric OS v3.1.1 Customer Symptom: When an Emulex LP952L HBA connected to a SilkWorm 3800 running Fabric OS v3.1.1c, port status (in the SilkWorm 3800 (2109-F16)) toggles between No-Sync and G_Port. When downgraded the FOS to v3.0.2, the HBA is able to perform FLOGI and PLOGI without any problem. Solution: Prevent ports from transmitting during diagnostics. Workaround: Skip diagnostics during reboot. SR #: RQST00000026690

Defects Closed In Fabric OS v3.1.1e		
Defect ID	**Severity**	**Description**
DEFECT000035819	High	Summary: HBAs do not appear in zoning applet (Emulex Solaris driver 5.02b) Customer Symptom: When a SilkWorm 3800 (2109-F16) switch connecting to Emulex HBA LP8000 (running on Solaris with driver revision 5.0.2b), some ports do not show up in the GUI in zone applet. Solution: Increase Web Tools buffer length to avoid buffer overflow. SR #: RQST00000025694
DEFECT000035811	High	Summary: Incorrect information displayed by Web Tools name server GUI Customer Symptom: When a SilkWorm 3800 (2109-F16) switch connecting to Emulex HBA LP8000 (running on Solaris with driver revision 5.0.2b), some ports do not show up in the GUI in zone applet. Sometimes switch panic occurs as well. Solution: Increase Web Tools buffer length to avoid buffer overflow. SR #: RQST00000025665

Defects Closed in Fabric OS v3.1.1d

Defects Closed In Fabric OS v3.1.1d		
Defect ID	**Severity**	**Description**
DEFECT000025903	High	Summary: Switch does not respond to ARB from a host. Symptom: Switch ignores ARB(02,02) from host result in host cannot see target. Solution: my_alpa ram did not get cleared after the port went offline. This will create a problem when the port comes online again with a device attached it using different alpa in 2G mode. My_alpa ram writing access will fail at this moment. The change is to clear my_alpa ram when port goes offline. Service Request# RQST00000026192

Defects Closed In Fabric OS v3.1.1d		
Defect ID	**Severity**	**Description**
DEFECT000034948	High	Summary: System performance tune-up in order to avoid SNMP timeouts when using ITSANM Symptom: SNMP timeouts when using ITSANM polling every 15 seconds. Solution: Added delays to zoning transactions when there are too many zoning entries to give other lower priority task a chance to run. Service Request# RQST00000024030
DEFECT000035981	High	Summary: Server lost connection to device Symptom: Storage is not visible after reboot of switch when upgraded to Fabric OS v3.1 Solution: Simply pace (add delays) the secure install certificate process a bit during the first time certificate is generated Workaround: portdisable and portenable the port connected to the storage device. Service Request# RQST00000025483

Defects Closed in Fabric OS v3.1.1c

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.

Defects Closed in Fabric OS v3.1.1b

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.
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 v3.1.1a

Defects Closed In Fabric OS v3.1.1a		
Defect ID	**Severity**	**Description**

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. |