TITLE:
HP StorageWorks Fabric Operating System (OS) 5.1.x

VERSION:
5.1.x

DESCRIPTION:
Fabric OS 5.1.x supports new enhancements and fixes found in previous releases, and adds support for new hardware platforms. This release also provides compatibility with XPath OS 7.4.1 running on the SilkWorm AP7420 (HP StorageWorks Multi-protocol Router).

UPDATE RECOMMENDATION:
HP strongly recommends that users upgrade to Fabric OS 5.1.x as soon as possible.

SUPERSEDES:
Fabric OS 5.0.1d released in January, 2006

EFFECTIVE DATE:
April, 2006

MODEL NAMING MATRIX
The following table lists Brocade SilkWorm and HP StorageWorks model equivalents supported at the time of this document’s release.

IMPORTANT:
Some Brocade models listed herein are not supported by HP at the time of this document’s release; please go to http://www.hp.com for the latest product availability information.
Table 1 Switch model naming matrix

<table>
<thead>
<tr>
<th>Brocade SilkWorm product models</th>
<th>Equivalent HP StorageWorks B-Series product model</th>
</tr>
</thead>
<tbody>
<tr>
<td>SilkWorm 200E switch</td>
<td>HP StorageWorks 4/8 SAN Switch or HP StorageWorks 4/16 SAN Switch</td>
</tr>
<tr>
<td>SilkWorm 3250 switch</td>
<td>HP StorageWorks SAN Switch 2/8V</td>
</tr>
<tr>
<td>SilkWorm 3850 switch</td>
<td>HP StorageWorks SAN Switch 2/16V</td>
</tr>
<tr>
<td>SilkWorm 3900 switch</td>
<td>HP StorageWorks SAN Switch 2/32</td>
</tr>
<tr>
<td>SilkWorm 4100 switch</td>
<td>HP StorageWorks SAN Switch 4/32</td>
</tr>
<tr>
<td>SilkWorm 24000 Director</td>
<td>HP StorageWorks SAN Director 2/128</td>
</tr>
<tr>
<td>SilkWorm 48000 Director</td>
<td>HP StorageWorks 4/256 SAN Director</td>
</tr>
<tr>
<td>SilkWorm AP7420</td>
<td>HP StorageWorks Multi-protocol (MP) Router</td>
</tr>
</tbody>
</table>

SUPPORTED PRODUCT MODELS:
- SilkWorm 3250
- SilkWorm 3850
- SilkWorm 3900
- SilkWorm 4100
- SilkWorm 24000
- SilkWorm 48000

UNSUPPORTED PRODUCT MODELS:
- SilkWorm 12000 (HP StorageWorks Core Switch 2/64)
- SilkWorm 4012 (Brocade 4Gb SAN Switch for HP p-Class BladeSystem)

DEVICES SUPPORTED:

OPERATING SYSTEMS:
Refer to http://www.hp.com for a list of supported operating systems.
ENHANCEMENTS:
The following sections list Fabric OS 5.1.x enhancements.

SilkWorm 200E
The Extended Fabrics feature in Fabric OS 5.1.x is now supported on the SilkWorm 200E switch. Customers must purchase the optional Extended Fabrics software license to use this feature. When enabled, Extended Fabrics supports distances over 100 km at 2 Gbit/sec. Trunking over distance also is supported on the SilkWorm 200E.

Chassis configuration options
Similar to previous Fabric OS releases, the SilkWorm 24000 and 48000 chassis running Fabric OS 5.1.x is assigned a chassis option by the user, which determines the number of domains (logical switches) on the chassis (supported only on the 24000). The FR4-18i blade is supported only using chassis option 5, which is the default setting on the SilkWorm 48000.

Chassis configuration options 3 and 4 are obsolete; if you attempt to upgrade to Fabric OS 5.1.x with chassis options 3 and 4 enabled, the upgrade will fail. With chassis options 3 and 4, one half of the director chassis has SilkWorm 12000 port blades and the other has SilkWorm 24000 port blades with SilkWorm 24000 CPs.

Device-based routing is obsolete; it was made available in Fabric OS v5.0.1 for the SilkWorm 4100 and the SilkWorm 48000 director. If device-based routing is enabled, the upgrade to Fabric OS 5.1.x will fail. You can change the type of routing using the aptPolicy command.

The aptPolicy command enables you to configure which egress port is selected for an exchange, based on a particular policy:

- Port-based path selection (paths are chosen based on ingress port and destination only). This also includes user-configured paths. (This is required for FICON)
- Exchange-based path selection (paths are chosen based on SID, DID, and OXID). This is the default and recommended setting for all non-FICON environments.

IMPORTANT:
For the SilkWorm 48000, the aptPolicy command will not be available, unless the chassis has been configured to run using option 5 described in the table below.
Table 2 SilkWorm 48000 chassis configuration options

<table>
<thead>
<tr>
<th>Option</th>
<th>Number of domains</th>
<th>Max ports per switch</th>
<th>Routing module</th>
<th>Supported CPs</th>
<th>Supported port blades</th>
<th>Implications/notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>128</td>
<td>CER</td>
<td>CP2 or CP4</td>
<td>FC2-16, FC4-16</td>
<td>CP4 will be faulted if inserted into a Universal Chassis</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>64/64</td>
<td>CER/CER</td>
<td>CP2 only</td>
<td>FC2-16 only</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>128</td>
<td>RTE</td>
<td>CP4 only</td>
<td>FC4-16, FC4-32, FR4-18i</td>
<td>CP4 will be faulted if inserted into a Universal Chassis</td>
</tr>
</tbody>
</table>

Legend

CER = Core Edge Routing. Port-based routing scheme, same as routing option supported in Fabric OS v4.2.0 and v4.4.0
RTE = Advanced Routing. Exchange-based (default) or port-based routing scheme
CP2 = SilkWorm 24000 CP blade
CP4 = Silkworm 48000 CP blade
FC2-16 = 2G, 16-port blade
FC4-16 = 4G, 16-port blade
FC4-32 = 4G, 32-port blade
FR4-18i = 4G, 16+2 routing blade

Zoning

Support for Default Zoning policies have been added to Fabric OS 5.1.x. Typically, when you issue the `cfgDisable` command in a large fabric with thousands of devices, the name server indicates to all hosts that they can communicate with each other. To ensure that all devices in a fabric do not see each other during a `cfgDisable` operation, you can activate a Default Zone with policy set to “no access”. If Default zoning policies are enabled, all `cfgEnable/Disable` commands and zoning changes must be run from a switch in the fabric running Fabric OS 5.1.x.

Fabric Scalability

Fabric OS v5.1.x supports the same fabric scalability as Fabric OS v5.0.1, that is, 2,560 ports with 50 domains.
Security-Related Enhancement

Password aging, password enforcement, and password strength/history has been added to Fabric OS 5.1.x.

FABRIC OS PREREQUISITES AND REQUIREMENTS:

The following table summarizes Fabric OS firmware versions that are supported in this release. These are the earliest recommended software versions that interoperate; however, HP recommends using the latest supported software release versions to get the most benefit from the SAN.

Table 3 Fabric OS versions supported in this release

<table>
<thead>
<tr>
<th>Model</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>SilkWorm 2000-series</td>
<td>Fabric OS 2.6.2</td>
</tr>
<tr>
<td>SilkWorm 3200, 3800</td>
<td>Fabric OS 3.2.x</td>
</tr>
<tr>
<td>SilkWorm 3250, 3850, 3900, 4100, 24000</td>
<td>Fabric OS 5.0.1</td>
</tr>
<tr>
<td>SilkWorm 200E</td>
<td>Fabric OS 5.1.x</td>
</tr>
<tr>
<td>SilkWorm AP7420</td>
<td>XPath OS 7.4.1 (required)</td>
</tr>
<tr>
<td>SilkWorm 48000</td>
<td>Fabric OS v5.1.x; XPath OS 7.4.1 required with FR4-18i blade</td>
</tr>
<tr>
<td>Fabric Manager</td>
<td>Fabric Manager 5.1.x</td>
</tr>
</tbody>
</table>

FIRMWARE UPDATES:

To access the latest Fabric OS 5.1.x firmware, configuration files and MIB files go to the following HP website:


To download:

**NOTE:**

Some product web pages may use slightly different links.

1. Locate the **IT storage Products** section of the web page.
2. Under **Networked storage**, click **SAN Infrastructure**.
3. From the **SAN Infrastructure** web page, locate the **SAN Infrastructure products** section.

4. Depending on your product, click **Fibre Channel Switches or Multi-protocol Routers & Gateways**.

5. To access Fabric OS 5.1.x firmware and supporting files, click the appropriate B-Series product. The product overview page displays.

6. Go to the **Product information** section, located on the far right side of the web page.
   a. Go to the **Tasks for HP StorageWorks...** product section. Select **Download drivers and software**.
   b. Go to the **Select your product** section. Select the appropriate product.
   c. Go to the **Select operating system** section. Select **Cross operating system (BIOS, Firmware, Diagnostics, etc.)**
   d. Scroll down to the **Firmware** section of the web page and select the appropriate firmware version.
   e. Click on the appropriate product description and then on **Installation Instructions** for how to install the firmware.
   f. Click the **Download** button and follow the prompts in the **File Download** dialog box.

**IMPORTANT NOTES:**

The following sections list important notes.

**FICON update**

HP does not currently support IBM Fibre Connections (FICON). Please refer to [http://www.hp.com](http://www.hp.com) for a list of current supported features.

**Fibre Channel routing update**

HP does not currently support Fibre Channel routing. Please refer to [http://www.hp.com](http://www.hp.com) for a list of current supported features.

**NPIV update**

HP does not currently support N-Port ID Virtualization (NPIV). Please refer to [http://www.hp.com](http://www.hp.com) for a list of current supported features.
Firmware upgrades and downgrades

HP does not support upgrading from more than two previous releases, for example, upgrading from Fabric OS 4.4.x to v5.1.x is supported but upgrading from Fabric OS v4.2.x or a previous release directly to v5.1.x is not. In other words, to upgrade a switch from Fabric OS v4.2.x or a previous release to v5.1.x requires a two-step process: first upgrade to v4.4.x or v5.0.1 and then upgrade to v5.1.x.

Old password: hpstorageworks
New password: iscsiport

The new password becomes iscsiportworks to account for the missing number of characters.

PKI certification

As of May 15, 2005, Brocade no longer includes a PKI Certificate as part of the installed Secure Fabric OS. If you wish to activate Secure Fabric OS on a supported Director or switch, you must contact Brocade to obtain a PKI certificate.


Unsupported commands

The slotOff and slowOn commands are now obsolete; use slotPowerOff and slotPowerOn instead. The portLogPortShow command is also now obsolete.

SilkWorm 48000–CP Failover/Replacement

Before moving the slider UP on a CP that is being activated, observe that amber LED is not ON for the active CP for at least 5 seconds and all LEDs are off on new inserted CP.

SilkWorm 48000–FDMI Hostname Support

If you have HBAs that support FDMI exposure of host names in a fabric you will need v3.2.0a and v4.4.0d to ensure that the host names are properly propagated to 5.1.x switches.
SilkWorm 48000–Power-cycling

The additional ports (128 to 255) require updates to certain Fabric OS versions: a) when you are running PID-2 format with a SilkWorm 4800 in the fabric and b) for a Secure Fabric OS fabric with a SilkWorm 48000 in the fabric and port numbers higher than 127 specified in DCC policies.

The minimum Fabric OS requirements are: v2.6.2d, v3.2.0a, and v4.4.0d.

SilkWorm 48000–CProxy switches

If you are using a Fabric OS v4.x switch as in API or SMI-S proxy to manage a 5.1.x switch, you must be running Fabric OS v4.4.0d, as a minimum requirement.

Fabric OS–Diagnostics backport test

The backport test passes only in a) a pure SilkWorm 24000 director or b) a SilkWorm 24000 system with no FC4-16 blades and under Option 5.

Do not run backport tests in any configuration other than the two listed above; use the minicycle test instead.

Fabric OS–Diagnostics spinsilk Test

The following configurations will pass the spinsilk test:

• Pure SilkWorm 24000 director (only CP2 and FC-16 blades)
• Pure SilkWorm 48000 director, option 5
• Pure SilkWorm 48000 director, option 5 (with FC4-16 blades)

The following configurations will fail the spinsilk test; use the minicycle test instead:

• Mixed SilkWorm 24000 director (with either CP4 or FC4-16 blades)
• Pure SilkWorm 48000, option 1
  “Pure SilkWorm 48000” refers to a director with CP4 and FC4-16 blades only.
### IMPORTANT NOTES AND WORKAROUNDS:

The following table lists important notes and workarounds.

**Table 4 Important notes and workarounds**

<table>
<thead>
<tr>
<th>Important notes</th>
<th>Workaround</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not all Fabric OS services are available when the prompt becomes available during boot up.</td>
<td>Wait for all the services to come up before using the switch or performing zoning actions.</td>
</tr>
<tr>
<td>FW_FRU_INSERTED message is displayed twice when a power supply FRU is inserted and powered on.</td>
<td>No functional impact.</td>
</tr>
<tr>
<td>Scalability: MS Platform Database not supported in large fabrics.</td>
<td>In large fabrics with more than 1,000 ports, it is recommended that the MS Platform Database is disabled, it is also required that the Platform DB be disabled before downgrading to previous versions of Fabric OS. This can be done using the msPLMgmtDeactivate command.</td>
</tr>
<tr>
<td>If the user tries to save move than 512 monitors using the perfCfgSave command, some of the monitors may be lost.</td>
<td>Do not issue the perfCfgSave command when running more than 512 monitors.</td>
</tr>
<tr>
<td>Scalability: When the cfgDisable command is executed, access is enabled between all devices. This can cause issues with some HBAs.</td>
<td>Enable default zoning using the defzone --noaccess command.</td>
</tr>
<tr>
<td>Do not try to merge fabrics with conflicting domain IDs over a VE_Port.</td>
<td>Before merging two fabrics over FC-IP with VE_Ports at each end, it is recommended that all domain ID and zoning conflicts are resolved.</td>
</tr>
<tr>
<td>If there is an already segmented port and backbone devices are exported to an edge fabric, a build fabric / fabric reconfiguration can occur after running haFailover</td>
<td>Ensure that there are no segmented ports before upgrading firmware.</td>
</tr>
<tr>
<td>When you use the diagnostic commands systemVerification and diagSetBurnin, the switch or blade will fault when the burn-in error log is full.</td>
<td>Clear the burn-in log before running systemVerification or diagSetBurnin.</td>
</tr>
<tr>
<td>No offline diagnostics command are HA safe.</td>
<td>All offline diagnostics commands should be used only when the switch is disabled.</td>
</tr>
<tr>
<td>Description</td>
<td>Details</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SFPs should not be inserted while running Power-On Self Test (POST).</td>
<td>POST can fail if new SFPs are added during POST. SFPs should only be added while the switch is “online” or if the switch is powered off.</td>
</tr>
<tr>
<td>Password policies should be changed before downgrading to versions previous to Fabric OS 5.1</td>
<td>Remove any password enforced expiration of admin or root accounts before downgrading firmware to 5.0.1 or lower versions.</td>
</tr>
<tr>
<td>fcrDisable command behavior when AP7420 is present in the backbone fabric.</td>
<td>If an AP7420 is present in the backbone fabric, the command fcrDisable may take up to 8 minutes to complete. If the AP7420 is replaced by a FR4-18i or a SilkWorm 7500, the command completes immediately.</td>
</tr>
<tr>
<td>Spinfab issues with E_Ports</td>
<td>If there are ISLs present on the switch that are not used for routing (due to them having higher linkcosts), disable the links before running spinfab.</td>
</tr>
<tr>
<td>Cannot add more than six license keys in SilkWorm 48000, as 6th license key is overwritten by any new license keys added.</td>
<td>Follow this procedure when changing the WWN card: 1. Remove all the licenses using the licenseremove command before the WWN card is replaced. 2. Install new licenses for the new license ID using the licenseadd command after the WWN card is swapped.</td>
</tr>
<tr>
<td>Standby CP IP address may not be reachable after it is set to new IP address from Web Tools.</td>
<td>Change the IP addresses from the command-line interface.</td>
</tr>
<tr>
<td>The system attempts a cold recovery as expected, but does not start. System is then out of sync &amp; FOS is down.</td>
<td>Reboot the standby CP as instructed by the resulting error message.</td>
</tr>
<tr>
<td>Firmware downgraded to 4.2.2b from 5.0.1 may cause all ports to be disabled on most switches.</td>
<td>1. For bladed switches (12k, 24k, 48k etc) using disruptive firmwaredownload to downgrade FW, i.e., type firmwaredownload -s on both CP reboot both CP after firmwaredownload completes. 2. For non-bladed switches, reboot switch second time after firmwaredownload completes.</td>
</tr>
<tr>
<td>When switch names with characters other than alphanumeric and underscore _ are used, you cannot access Web Tools subwindows for those switches, such as ZoneAdmin and SwitchAdmin.</td>
<td>1) Rename the switch to avoid the special characters. OR 2) Use the switch IP in the URL to access Web Tools, instead of using the switch name.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Issue</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The <code>cfgdisable</code> command turns off zone enforcement, which generates a lot of fabric activity and is likely to be very disruptive to devices in a large fabric. During <code>cfgDisable</code>, all devices have access to each other. In a big fabric with many devices, doing a <code>cfgDisable</code> will cause a lot of RSCN and queries, which can be disruptive.</td>
<td>Enable a dummy cfg instead of <code>cfgDisable</code>, which will disable access among the unzoned devices.</td>
</tr>
<tr>
<td>Content of help (man) pages for particular commands may not be consistent across different Fabric OS releases.</td>
<td>Use the help (man) pages specific to the release you are working on.</td>
</tr>
<tr>
<td>Faulty power supply causes continuous removal and insertion error/info messages</td>
<td>Replace the faulty power supply.</td>
</tr>
<tr>
<td>Inconsistent blade status between <code>slotshow</code> and <code>switchshow after failover</code></td>
<td>Run <code>bladedisable/enable</code> on the affected blade.</td>
</tr>
<tr>
<td><code>Firmwarerestore</code> operation does not log results in either the <code>firmwaredownloadstatus</code> area or the system error log, even though the user may expect some indication that the <code>firmwarerestore</code> command operation was triggered.</td>
<td>Run <code>firmwarerestore</code>, and <code>firmwareshow</code> to make sure the firmware has been restored properly.</td>
</tr>
<tr>
<td>Warning message in console log doesn’t reflect a new area port # in switch PID format 2</td>
<td>To locate the failed port, use a formula to convert the port # shown in the error message to the new area as displayed in <code>switchshow</code>.</td>
</tr>
<tr>
<td>Port with 2G SFP negotiated and mistakenly came up at 4G.</td>
<td>Run <code>portdisable/portenable</code> on this particular port and it should come up at 2G again. If trunking is enabled, it will join the trunk group as a trunk port.</td>
</tr>
<tr>
<td>Commands using Linux command <code>/usr/bin/less</code> not handling page continuation properly with space bar prompt to continue.</td>
<td>Use the <code>portlogdump</code> command instead.</td>
</tr>
<tr>
<td>Diagnostics: Backport test fails with error message in a mix-bladed chassis</td>
<td>Do NOT run a backport test in any configuration other than a pure SW24000 system or a SW48000 system with no FC4-32 blades and under Option 5. Use a minicycle test instead.</td>
</tr>
<tr>
<td>Tags in older RLIR events replaced with incorrect tags from the latest RLIR event in the Events table</td>
<td>Use the <code>ficonShow RLIR</code> command in the command-line interface to get RLIR data.</td>
</tr>
<tr>
<td>Issue</td>
<td>Resolution</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Using 3rd party test software, F-ports and L-ports connected to SW200E disabled after login process right after port reset.</td>
<td>Disable the switch and then enable it.</td>
</tr>
<tr>
<td>SilkWorm 4100 unlicensed POD ports blinking in place of LED being turned off.</td>
<td>Run <code>portdisable</code> on wrongfully (unlicensed) blinking ports to stop the blinking.</td>
</tr>
<tr>
<td>Fan removal and insertion on SilkWorm 4100 causes FAN-1 to appear faulty if insertion rate or force is not steady.</td>
<td>If a fan is marked as faulty (amber flashing lamp on fan assembly) within a few seconds after insertion, it is possible that this is a false failure indication due to a momentary disconnection caused by uneven insertion (contact bounce). Restore the fan to an operational status using the following procedure: 1) Pull the fan assembly out half way 2) Re-insert the fan at a moderate pace with a steady application of moderate force until the fan assembly seats securely.</td>
</tr>
<tr>
<td>FWD daemon no longer running after <code>firmwaredownload</code> observed when <code>switchstatusshow</code> was run, the following message was displayed among other messages: Fabric Watch Daemon is not running (maybe it hasn’t finished its initialization..)</td>
<td>Reboot the switch to start Fabric Watch.</td>
</tr>
<tr>
<td>Fully-loaded SilkWorm 48000, a few E-Ports and F-Ports stay in Mod_Val mode for &gt; 11 minutes after fastboot.</td>
<td>Disable and enable the port which is stuck in Mod-Val state.</td>
</tr>
<tr>
<td>All trunk ports of a 4-port trunk group on both sides of the links between a SilkWorm 48000 and 24000 stuck in unknown E-port state after failover.</td>
<td><code>bladedisable/enable</code> the affected port blade.</td>
</tr>
<tr>
<td>Ports were faulted on many E-ports from <code>switchshow</code> after running the hafailover script on SW48000s overnight. Error messages displayed on the console as follows: CDR-1002], 32019,, WARNING, C48K_142055, Port 231 chip faulted due to internal error. Perform slotpoweroff and slotpoweron to recover the port.</td>
<td>Perform <code>slotpower off/on</code> to recover those ports.</td>
</tr>
<tr>
<td>Standby CP keeps rebooting with error: Failed to retrieve current chassis configuration option, ret=-29. System of SilkWorm 24000 CPs, chassis config option 2.</td>
<td>Power cycle the chassis to bring up both CPs in sync.</td>
</tr>
<tr>
<td>After invoking Add all ports and then removing some individually, you cannot restore missing ports by invoking Add all ports again.</td>
<td>Close the Switch Throughput Utilization dialog and reopen it to perform the action again.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>May get a secure switch stuck in error state if a secFCSFailover is attempted while a fabric is busy. This will prevent sec commands from completing on the fabric - secpolicysave for example.</td>
<td>To prevent this problem, do not attempt a secure failover while the fabric is busy for any reason. Wait for the fabric to settle down before issuing secFCSFailover. To recover from the problem, issue secversionreset on the switch in error state and then merge it back into the fabric.</td>
</tr>
<tr>
<td>The fanshow command correctly shows the fan as faulty, but the Fabric Watch monitor may report both Healthy and Marginal status for the fan because the motor is still attempting to spin at the correct RPM.</td>
<td>Use the fanshow command to provide the correct status for the fan.</td>
</tr>
<tr>
<td>Numerous Exchange allocation error!! messages on console, ‘msd’ unexpectedly terminates then kSWD reboots the switch during continuous reboot of core switches.</td>
<td>Ensure that the principle switch is always one of the high port count core switches.</td>
</tr>
<tr>
<td>RNID has switch Model Number of NA should be 200.</td>
<td>Use the link incident PID to find the switch that generated it.</td>
</tr>
<tr>
<td>WWN card side LED behavior does not match with actual blade LED when blade displays FAULTY (51).</td>
<td>replace the faulty blade and reset CP it show faulty(51).</td>
</tr>
<tr>
<td>In a fully loaded SW48000 switch with all 256 F/FL ports in a single zone, the switchenable operation takes 15 to 30 minutes to complete.</td>
<td>Instead of using switchdisable/enable, bring down and up one slot at a time with a time gap in between.</td>
</tr>
<tr>
<td>Using dnsconfig command, Domain Name field should not accept spaces since only the characters up to the first space are accepted as new domain name.</td>
<td>Re-enter the domain name without space characters.</td>
</tr>
</tbody>
</table>

**FIXES:**

Fabric OS 5.1.x integrates the following improvements:

- Creating NPIV devices greater than 127 does not cause NS coredumps in switches running 4.2.2.
- Switch does not panic with out of memory (OOM) panic after Fabric Watch monitor change. After firmware download from FOS v5.0.1 to v4.4.1a on a SW12000, FOS v4.4.1a no longer panics with OOM kill when there is a change in the Fabric Watch configuration to set thresholds in fabric class and SFT state. Configuring
an email alert upon any change in SFP voltage caused an excessive number
of emails to be generated at a rate greater than the SW12000 CPU could
process and deliver.

• Common Access Layer Daemon (CALD) not stopped by software watchdog when
faulty devices are connected to the fabric.

• Reboot of a SilkWorm 48000 does not cause the psd to stop if there is no timely
reply to the kSWD.

• Out of Memory (OOM) error does not display on SilkWorm 12000 switches
when collecting APM (Advanced Performance Monitor) data for a long time.

• Edge SW200E got ASSERT and does not reboot during switchdisable/
enable of one core switch in eighteen switches dual core (core-edge) fabric.

• On a SW12000, if SNMP setting and community string is changed from the
standard string during an upgrade from 4.1.1 to 4.4.0b, the string is reset to
default and customer settings are not lost.

• MSd does not panic while processing a bad frame sent by a remote switch
that is out of memory.

• firmwareDownload finishes with the message Verification succeeded. No 8
rpm packages are generated during install.

• HBA logs into a 4G switch during auto topology discovery.

• Model Number in Sense ID data displays correctly.

• Running in Interopmode while downgrading the firmware on one CP to
4.4.x/4.2.x, while leaving the other CP at 5.0.1, does not cause a panic after
the failover operation is complete.

• The Duplex mode of Ethernet port will not reset to autonegotiation mode after
changing the IP address or subnet mask using ipaddrset.

• Telnet to switch does not fail during firmwaredownload w/wo option -s.

• On Silkworm 4100 and 4800, host sees target in PID 2 format.

• pLOGIN/pLOGIN ACC frames do not get lost in the fabric for bloom based
switches.

• After firmware upgrade/downgrade on a SilkWorm 3900 and SilkWorm
12000, a host reboot/shutdown no longer causes the other host sharing the
same internal route to lose the device connection.

• Wrong zoning entries in the zoning database are not created when SilkWorm
24000 (v4.2.2b) and SilkWorm 48000 (v5.0.1) are merged and new zone is
created.

• Access password that contains colon (:) character from Web Tools or Fabric
Manager.

• If trace dump is empty, supportsave does not create duplicate trace dump
and both are transferred to FTP server.

• After the Web Tools Performance Monitor is refreshed, graphs are laid out
properly.
• No issue with the Cascade command in Performance Management in Web Tools Performance Monitor.
• Output text in supportsave telnet session logs no longer overwritten in part of the formatted output.
• Fabric Watch - Threshold value of HIGH is no longer accepting beyond the boundary value when referred with threshold value of LOW.
• Error no longer displays on several SAN Switch 4/32s in a large fabric during switch bootup after doing reboot.
• After upgrading to v4.4.0b, previous error log entries are not discarded.
• Amber LEDs indicate a marginal state even though the CPs are working fine on four different SW24000s.
• When changing chassisconfig or when configremoveall is executed an error no longer displays on the console indicating incorrect SNMP configuration.
• SNMP: connUnitUrl doesn't show updated value after changing IP address of a Fabric OS switch.
• After creating a zone with ports from an AP7420 from a Fabric OS 3.x switch and then viewing the same zone from a Fabric OS 5.x switch, the ports of the AP7420 are shown online. Even though the ports in an AP7420 are not allowed in a Fabric OS 5.x switch, they should still display as online.
• When an event window is minimized and you use right-click from the toolbar minimized icon to display a menu and select Maximize, the event window changes to the maximized size.
• Refresh operations in Web Tools Switch View, Name Server, Switch Events, and Fabric Events reflected in Last Updated status messages.
• Web Tools Switch View - Power supply LED correctly changes color from green to steady yellow when switch is disabled.
• If switch is rebooted before being enabled, switch will no longer segment with requested domain ID.
• Problems with MsPlat is left enabled when Interopmode is set. This cause fabric segmentation until we run msplmgmtdeactive.
• SCSI Read/Write on a Lun per port Setup function in APM(WEBTOOL) only functions when column 2 in Enter Lun number(Hex): is used. Other columns, such as 1 and 3, do not display any statistics in the graph.
• Web Tools EZ recognizes the factory default zoning for SW 200E switch.
• Active selection field for radio buttons in Admin tabs of WebTools no longer extend too far to the right.
• SwitchShow and nsshow commands do not show device logged in as Loop port.
• Setting the Domain ID to 238 in Interopmode no longer causes a POSTerror.
• PCI errors are not reported while POST is running.
• portlog event settings are persistent across reboots when setting all values at the same time.