hp StorageWorks

diagnostic and system error message version 3.0.x/4.0.x reference guide

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This reference guide supports Fabric OS V3.0.x and Fabric OS V4.0.x. It provides listings of both software and hardware error messages, their formats, and how to understand them.

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Diagnostic and System Error Message Version 3.0.x/4.0.x Reference Guide
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About this Guide

This guide provides information to help you:

- Interpret system, Fabric Watch, and diagnostic error messages.
- Understand the system, Fabric Watch, and diagnostic error message formats.
- Display error messages using telnet.
- Contact technical support for additional assistance

Intended Audience

This book is intended for use by system administrators who are experienced with the following:

- *HP StorageWorks*™ Fibre Channel SAN switches
- Fabric Operating System (FOS) V3.0.x or later

Related Documentation

For a list of related documents included with this product, see the Related Documents section of the Release Notes that came with your switch.

For the latest information, documentation, and firmware releases, please visit the following StorageWorks website:

http://www.compaq.com/storage/productindexdisk.html

For information about Fibre Channel standards, visit the Fibre Channel Association website, located at http://www.fibrechannel.com.

Document Conventions

The conventions included in Table 1 apply.

Table 1: Document Conventions

Element	Convention
Cross-reference links	Blue text: Figure 1
Key names, menu items, buttons, and dialog box titles	**Bold**
File names, application names, and text emphasis	*Italics*
User input, command names, system responses (output and messages)	`Monospace font` `COMMAND NAMES` are uppercase unless they are case sensitive
Variables	*`Monospace, italic font`*
Website addresses	Sans serif font (http://thenew.hp.com)

Symbols in Text

These symbols may be found in the text of this guide. They have the following meanings.

WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or data.

IMPORTANT: Text set off in this manner presents clarifying information or specific instructions.

NOTE: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Getting Help

If you still have a question after reading this guide, contact an HP authorized service provider or access our website: http://thenew.hp.com.

HP Technical Support

In North America, call HP technical support at 1-800-652-6672, available 24 hours a day, 7 days a week.

NOTE: For continuous quality improvement, calls may be recorded or monitored.

Outside North America, call HP technical support at the nearest location. Telephone numbers for worldwide technical support are listed on the HP website: http://thenew.hp.com/country/us/eng/contact_us.html.

Be sure to have the following information available before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

HP Storage Website

The HP storage website has the latest information on this product, as well as the latest drivers. Access the HP storage website at: http://thenew.hp.com/country/us/eng/prodserv/storage.html. From this website, select the appropriate product or solution.

HP Authorized Reseller

For the name of your nearest HP Authorized Reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- Elsewhere, access the HP website at http://thenew.hp.com/country/us/eng/contact_us.html for locations and telephone numbers.

1

Introduction to Diagnostics and Error Messages

Use this chapter to understand how this document is organized and how to find the error and diagnostic message information you are looking for.

The Diagnostic and System Error Message Version 3.0.x/4.0.x Reference Guide supports Fabric OS V3.0.x and Fabric OS V4.0.x.

This chapter provides the following information:

- Software Error Messages on page 1–1
- Hardware Error Messages on page 1–1

Software Error Messages

See these sections when working with Fabric OS V3.0.x and V4.0.x system error messages:

- Background information about system error messages, their format, and how to understand them (page 2–1)
- A list of Fabric OS V3.0.x system error messages (page 3–1)
- A list of Fabric OS V4.0.x system error messages (page 4–1)

Hardware Error Messages

See these sections when working with diagnostic error messages related to Fabric OS V3.0.x and V4.0.x:

- Background information about diagnostic commands (page 5–1)
- A list of V3.0.x diagnostic messages, organized by message number (page 6–1)
- Information about diagnostic error message formats (page 7–1)
- A list of V4.0.x diagnostic messages, organized by message number (page 8–1)

2

System Error Message Formats

This chapter provides the following information:

- Displaying Error Messages Using Telnet on page 2–1
- V3.0.x System Error Message Format on page 2–2
- V4.0.x System Error Message Format on page 2–2
- Fabric Watch Error Message Format on page 2–3

Displaying Error Messages Using Telnet

To display the error messages compiled by your system, perform the following procedure:

1. Login as an admin user to the switch, using a telnet connection.
2. From the prompt, enter the `errShow` command.
   The `errShow` command displays all detected errors. Errors are listed in reverse chronological order and up to 64 messages can be held in the buffer. Once the buffer limit is exceeded, the oldest message is deleted. For more information about the `errShow` command, refer to the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.
3. To scroll through the error list, press **Enter**.
4. Scroll through error log to view the error messages. If no errors are encountered, this command displays `No Errors`.

V3.0.x System Error Message Format

Error message formats for the switch are the same whether you access the information from the local RS-232 serial port or use a remote telnet session.

NOTE: Error numbers are displayed only for diagnostic errors, and only diagnostic errors are assigned error numbers.

Example: Sample V3.0.x Error Message

```
switch:admin> errshow
Error 11
--------
0x101f8fa0 (tShell): Jul 23 15:16:57 (4)
Error ) Failed Turbo RAM dec r/w test:
phy=0x811088a0 wrd cnt=448 dec size=8 bytes
rpt=0xaaaaaaaa wpt=0x55555555 msk=0x000001ffType <CR> to continue,
Q<CR> to stop:
```

In the above sample error message:

- `0x101f8fa0` is the Task ID.
- `tShell` is the Task Name.
- `Jul 23 15:16:57 (4)` is the date, time, and number of occurrences of the error.
- `Failed Turbo RAM dec r/w test` is the error description.

V4.0.x System Error Message Format

Error message formats for the switch are the same whether you access the information from the local RS-232 serial port or use a remote telnet session.

NOTE: Only diagnostic errors are assigned error numbers.

Example: Sample V4.0.x Error Message

```
ter1_132_sw0:admin> errshow
Error 10
--------
0x2a2 (fabos): Jan 30 17:14:41
Switch: 0, Error HAM-REDUNDANT_INFO, 4,
(Heartbeat Up) System in REDUNDANT state
```

In the above sample error message:

- `0x2a2` = the task ID.
- `(fabos)` = this is not relevant to the customer.
- `Jan 30 17:14:41` = the date and time of the occurrence.
- `Switch: 0` = indication that the error is with switch 0.
- `Error HAM-REDUNDANT_INFO` = the error.
- `4` = the severity of error.
- `(Heartbeat Up) System in REDUNDANT state` = a further description of the error.

Fabric Watch Error Message Format

The Fabric Watch error message format is set up slightly different than other error message formats.

Example: Sample Fabric Watch Error Message

```
0x10e67e30 (tThad): May 30 07:54:09
 Error FW-BELOW 3, envFan002 (Env Fan 2) is below low boundary.
   current value: 3030 RPM. (faulty)
```

In the above sample error message:

- `0x10e67e30` = The opening series of letters and numbers is the message identifier.
- (`tThad`): = The item in parentheses following the identifier is information that only the processor needs; it is not relevant to the customer.
- `May 30 07:54:09` = The date and time.
- `Error FW-BELOW` = where the element is in respect to a threshold. The options are ABOVE, BELOW, EXCEEDED, CHANGED, and IN-BETWEEN.
- 3 = faulty and 4 = informational. There are no other options.
- `envFan002` = the class, area, and index number of the element that caused the error.

- (Env Fan 2) is below low boundary. current value: 3030 RPM = The problem with the element.
- (faulty) = the state that the element is in. The only options are faulty and informational.

3

V3.0.x System Error Messages

This chapter provides the following information:

- V3.0.x System Error Messages on page 3–1

V3.0.x System Error Messages

Table 3–1: V3.0.x System Error Messages (Sheet 1 of 7)

Category	Message	Description	Probable Cause	Action
OS	ASIC, MINI_BUFFER, LOG_WARNING	ASIC Failure.	Bad main board	Contact customer support
OS	CONFIG CORRUPT	The switch configuration information has become irrevocably corrupted.	OS error	The system automatically resorts to the default configuration settings.
OS	CONFIG OVERFLOW	The switch configuration information has grown too large to be saved or has an invalid size.	OS error	Contact customer support
OS	CONFIG VERSION	The switch has encountered an unrecognized version of the switch configuration.	OS error	The system automatically reverts to the default configuration settings.

Table 3–1: V3.0.x System Error Messages (Sheet 2 of 7)

Category	Message	Description	Probable Cause	Action
OS	FABRIC, SEGMENTED, LOG_WARNING	Fabric segmented.	Incompatible fabric parameters /switches Conflict zones	Reconfigure fabric or zones.
OS	FABRIC, BADILS, LOG_WARNING	Bad ISL-ELS size.	The ISL-ELS payload is wrong.	Contact customer support
OS	FABRIC, NO_ALIASID, LOG_WARNING	No free multicast alias.	Too many multicast groups in use	Remove some of the groups
OS	FANS, 1_FAILED, LOG_WARNING	Switch overheated.	Fan Failure	Contact customer support
OS	FANS, 2_FAILED, LOG_ERROR	Switch overheated.	Fan Failure	Contact customer support
OS	FANS, 3_FAILED, LOG_CRITICAL	Switch overheated.	Fan Failure	Contact customer support
OS	FANS, 4_FAILED, LOG_CRITICAL	Switch overheated.	Fan Failure	Contact customer support
OS	FANS, 5_FAILED, LOG_CRITICAL	Switch overheated.	Fan Failure	Contact customer support
OS	FANS, 6_FAILED, LOG_CRITICAL	Switch overheated.	Fan Failure	Contact customer support
OS	FCIU, IUBAD, L, S	Invalid IU.	OS error	Contact customer support
OS	FCIU, IUCOUNT, L, S	Total number of IUs Count < 0.	OS error	Contact customer support
OS	FCPH, EXCHBAD, L, S	Bad exchange.	OS error	Contact customer support
OS	FCPH, EXCHFREE, L, S	Unable to free an exchange.	OS error	Contact customer support
OS	FLANNEL, PHANTOM, LOG_WARNING	Port's PLT limit exceeded.	OS error	Contact customer support

Table 3–1: V3.0.x System Error Messages (Sheet 3 of 7)

Category	Message	Description	Probable Cause	Action
OS	FLASH, BAD_MIRROR, LOG_WARNING	The flash memory has encountered an error.	OS error	The system attempts to recover from its mirrored backup. Contact customer support.
OS	FLOOD, INVLSU, LOG_WARNING	Discard received LSU.	OS error	Contact customer support
OS	FLOOD, INVLSR, LOG_WARNING	Unknown LSR type.	OS error	Contact customer support
OS	FLOOD, LSRLEN, LOG_ERROR	Excessive LSU length.	OS error	Contact customer support
OS	FSPF, INPORT, LOG_ERROR	Input port out of range.	OS error	Contact customer support
OS	FSPF, NBRCHANGE, LOG_WARNING	Wrong neighbor ID in Hello message from port.	OS error	Contact customer support
OS	FSPF, REMDOMAIN, LOG_ERROR	Remote Domain ID out of range.	OS error	Contact customer support
OS	FSPF, SCN, LOG_WARNING	Illegal SCN.	OS error	Contact customer support
OS	FSPF, SECTION, LOG_ERROR	Wrong Section ID.	OS error	Contact customer support
OS	FSPF, VERSION, LOG_ERROR	FSPF version not supported.	OS error	Contact customer support
OS	HLO, DEADTIMEOUT, LOG_ERROR	Incompatible Inactivity time-out from port.	OS error	Contact customer support
OS	HLO, HLOTIMEOUT, LOG_ERROR	Incompatible Hello time-out from port.	OS error	Contact customer support
OS	HLO, INVHLO, LOG_ERROR	Invalid Hello received from port.	OS error	Contact customer support
OS	LSDB, LSID, LOG_ERROR	Link State ID is out of range.	OS error	Contact customer support

Table 3–1: V3.0.x System Error Messages (Sheet 4 of 7)

Category	Message	Description	Probable Cause	Action
OS	LSDB, MAXINCARN, LOG_WARNING	Local Link State Record reached max incarnation.	OS error	Contact customer support
OS	LSDB, NOLOCALENTRY, LOG_CRITICAL	No database entry for local Link State Record.	OS error	Contact customer support
OS	LSDB, NOLSR, LOG_WARNING	No Link State Record for domain.	OS error	Contact customer support
OS	MCAST, ADDBRANCH, LOG_ERROR	Add Branch failed.	OS error	Contact customer support
OS	MCAST, ADDPORT, LOG_WARNING	Add Port failed.	OS error	Contact customer support
OS	MCAST, REMBRANCH, LOG_ERROR	Remove branch failed.	OS error	Contact customer support
OS	MCAST, REMPORT, LOG_WARNING	Remove port failed.	OS error	Contact customer support
OS	MCAST, NOPARENT, LOG_ERROR	Null parent.	OS error	Contact customer support
OS	MCAST, NOPARENTLSR, LOG_ERROR	Null lsrP.	OS error	Contact customer support
OS	MQ, QWRITE, L, M	Message queue overflow.	Task blocked	Contact customer support
OS	MQ, QREAD, L, M	Message queue unread.	OS error	Contact customer support
OS	MQ, MSGTYPE, E, M	Unknown message type.	OS error	Contact customer support
OS	NBFSM, NGBRSTATE, LOG_ERROR	Wrong input to neighbor FSM.	OS error	Contact customer support

Table 3–1: V3.0.x System Error Messages (Sheet 5 of 7)

Category	Message	Description	Probable Cause	Action
OS	PANIC, TASKSPAWN, LOG_PANIC	Task creation failed.	OS error	Contact customer support
OS	PANIC, SEMCREATE, LOG_PANIC	Semaphore creation failed.	OS error	Contact customer support
OS	PANIC, SEMDELETE, LOG_PANIC	Semaphore deletion failed.	OS error	Contact customer support
OS	PANIC, QCREATE, LOG_PANIC	Message queuer failed.	OS error	Contact customer support
OS	PANIC, QDELETE, LOG_PANIC	Message queuer deletion failed.	OS error	Contact customer support
OS	PANIC, MALLOC, LOG_PANIC	Memory allocation failed.	OS error	Contact customer support
OS	PANIC, FREE, LOG_PANIC	Memory free failed.	OS error	Contact customer support
OS	PANIC, INCONSISTENT, LOG_PANIC	Data out of sync.	OS error	Contact customer support
OS	PANIC, INTCONTEXT, LOG_PANIC	Data out of sync.	OS error	Contact customer support
OS	PANIC, ZOMTIMSET, LOG_PANIC	Attempt to set a zombie timer.	OS error	Contact customer support
OS	PANIC, ZOMTIMKILL, LOG_PANIC	Zombie timer destroyed.	OS error	Contact customer support
OS	PANIC, FREETIMRLSD, LOG_PANIC	Free timer released.	OS error	Contact customer support
OS	PANIC, TIMEUSECNT, LOG_PANIC	Timer use count exceeded.	OS error	Contact customer support

Table 3–1: V3.0.x System Error Messages (Sheet 6 of 7)

Category	Message	Description	Probable Cause	Action
OS	PANIC, LSDB_CKSUM, LOG_PANIC	Link State Database checksum failed.	OS error	Contact customer support
OS	POWER, 1_FAILED, LOG_CRITICAL	Switch Power Failure.	Power Supply Failure	Contact customer support
OS	POWER, 2_FAILED, LOG_CRITICAL	Switch Power Failure.	Power Supply Failure	Contact customer support
OS	QL, QUICKLOOP PARTNER INCOMPATIBLE	The Quick loop partner switch is running a lower (than V2.1.3) version of the software.	OS error	Upgrade to a higher version of the Fabric OS.
OS	RPC, SVC_EXIT	An RPC service daemon has terminated prematurely or unexpectedly.	OS error	Contact customer support
OS	RPC, SVC_REG	An RPC service daemon could not establish service for a particular protocol handler.	OS error	Contact customer support
OS	SEMA, SEMGIVE, L, M	Unable to give a semaphore.	OS error	Contact customer support
OS	SEMA, SEMTAKE, L, M	Unable to take a semaphore.	OS error	Contact customer support
OS	SEMA, SEMFLUSH, L, M	Unable to flush a semaphore.	OS error	Contact customer support
OS	SYS, NOMEM, LOG_CRITICAL	No memory.	OS error	Contact customer support
OS	SYS, SYSCALL, LOG_ERROR	System call failed.	OS error	Contact customer support
OS	SYS, BADPTR, LOG_ERROR	Bad system pointer.	OS error	Contact customer support
OS	SYS, INTRPT, LOG_CRITICAL	Bad system interrupt.	OS error	Contact customer support

Table 3–1: V3.0.x System Error Messages (Sheet 7 of 7)

Category	Message	Description	Probable Cause	Action
OS	SYS, FLASHRD, LOG_ERROR	FLASH memory read error.	OS error	Contact customer support
OS	SYS, FLASHWR, LOG_ERROR	FLASH memory write error.	OS error	Contact customer support
OS	TEMP, 1_FAILED, LOG_WARNING	Switch overheated.	Fan Failure	Contact customer support
OS	TEMP, 2_FAILED, LOG_ERROR	Switch overheated.	Fan Failure	Contact customer support
OS	TEMP, 3_FAILED, LOG_CRITICAL	Switch overheated.	Fan Failure	Contact customer support
OS	TEMP, 4_FAILED, LOG_CRITICAL	Switch overheated.	Fan Failure	Contact customer support
OS	TEMP, 5_FAILED, LOG_CRITICAL	Switch overheated.	Fan Failure	Contact customer support
OS	TIMERS, ENQFAIL, LOG_CRITICAL	Invalid time-out value.	OS error	Contact customer support
OS	TIMERS, MSG, LOG_WARNING	Invalid message.	OS error	Contact customer support
OS	UCAST, ADDPATH, LOG_CRITICAL	Add path failed.	OS error	Contact customer support
OS	UCAST, ADDPORT, LOG_WARNING	Add port failed.	OS error	Contact customer support
OS	UCAST, REMPORT, LOG_WARNING	Remove port failed.	OS error	Contact customer support
OS	UCAST, RRTIM, LOG_CRITICAL	Invalid reroute timer ID.	OS error	Contact customer support
OS	UCAST, SPFCOST, LOG_WARNING	No minimum cost path in candidate.	OS error	Contact customer support
OS	UCAST, RELICPDB, LOG_WARNING	Relic PDB to Domain.	OS error	Contact customer support

4

V4.0.x System Error Messages

This chapter provides the following information:

- 4.0.x Zone Server Error Messages on page 4–1
- V4.0.x Management Server Error Messages on page 4–4
- V4.0.x PDM Error Messages on page 4–4
- V4.0.x Overall System Error Messages on page 4–5
- V4.0.x Security Error Messages on page 4–15

V4.0.x Zone Server Error Messages

Table 4–1: 4.0.x Zone Server Error Messages

Category	Message	Description	Probable Cause	Action
Zone Server	1) ERRDEF(ZONE, MALLOCFAIL, LOG_ERROR, 0, "Malloc() failure in module: (%s)\n");	Zoned fails to malloc the memory requested.	The system is low on memory, or has severe memory fragmentation.	
Zone Server	2) ERRDEF(ZONE, WWNSPOOF, LOG_ERROR, 0, "WWN spoofing at (d, p) = (%d,%d) Port WWN(%s,%s) NodeWWN(%s,%s)\n");	The kernel received from the WWNs do not match the WWNs mapped by the NS based on (d, p).	When a WWN host or WWN target does a PLOGI, and we have a PLOGI trap at the port where the login happens.	

Table 4–1: 4.0.x Zone Server Error Messages (Continued)

Category	Message	Description	Probable Cause	Action
Zone Server	3) ERRDEF(ZONE, WWNZONECHECK, LOG_ERROR, 0, "WWN zoneTypeCheck or zoneGroupCheck failure. rval (0x%x,0x%x)\n");	An error occurred when WWN zone type was installed or when the WWN zone group was created.	The rval should state what triggers the error.	
Zone Server	4) ERRDEF(ZONE, SOFTZONING, LOG_WARNING, 0, "WARNING - port %d zoning enforcement changed to Name Server.\n");	A port was switched from being a hard port to a soft port.	Possibly an overlap of hard WWN zone and hard port zone at the port, or ran out of CAM entries at the port.	
Zone Server	5) ERRDEF(ZONE, ENFORCEMIX, LOG_WARNING, 0, "WARNING - HARD & SOFT zones (%s,%s) definition overlap.\n");	Switched a port from a hard WWN/Port port to a soft port	An overlap of hard WWN/port zone and soft zone at the port, or an overlap of FA and Qloop zones at the port	
Zone Server	6) ERRDEF(ZONE, WWNINPORT, LOG_WARNING, 0, "WARNING - WWN(%s) in HARD PORT ZONE %s.\n");	A WWN zone intersects with a hard port zone definition	One of the WWNs in a hard WWN resides at a port covered by a hard port zone	
Zone Server	7) ERRDEF(ZONE, IOCTLFAIL, LOG_ERROR, 0, "Ioctl(%s) failure in (%s) at port (%d): err(%d) error string(%s)\n");	One of the kernel ioctls fails	The message tells us the error message returned by which ioctl, called by which zoning routine.	

Table 4–1: 4.0.x Zone Server Error Messages (Continued)

Category	Message	Description	Probable Cause	Action
Zone Server	8) ERRDEF(ZONE, DUPLICATE_ENTRY, LOG_WARNING, 0, "WARNING - Duplicate entries in zone(%s) specification.\n");	There is a duplicate zone object in the configuration	Users have entered a duplicate zone object	
Zone Server	9) ERRDEF(ZONE, PORT_NOT_PRESENT , LOG_WARNING, 0, "WARNING - Port (%d) is not present.\n");	A port is not up yet	When zoning first comes up to install CAM entries at a port, and that port is not up yet.	
Zone Server	10) ERRDEF(ZONE, ALL_PORTS_ABSENT _OR_FAIL, LOG_WARNING, 0, "WARNING - All ports are either absent or fail.\n");	All ports are not up yet	When zoning first comes up to install CAM entries at all ports covered by the zoning configuration, and none of those ports are up yet.	
Zone Server	11) ERRDEF(ZONE, QLOOP_NOT_SUPPO RTED, LOG_WARNING, 0, "Quickloop not supported.\n");	Ulysses does not allow a qloop host or target resides on the switch	zoning comes across a qloop host or target on the switch during cfgEnable	
Zone Server	12) ERRDEF(ZONE, NOLICENSE, LOG_ERROR, 0, "Missing required license - %s.\n");	Missing the zoning license	All zoning add/create/delet e/remove and cfgTransAbort commands require a zoning license.	

V4.0.x Management Server Error Messages

Table 4–2: V4.0.x Management Server Error Messages

Category	Message	Description	Probable Cause	Action
Management Server	1) ERRDEF(MS, PLDBSEG, LOG_WARNING, 0, "MS Platform Segmented port=%d(%s)\n");	Port is segmented during Platform DB exchange with Platform Service enabled in MS.	There are several reasons as to why MS segments the port during the Platform DB exchange. The reason is specified in the parenthesis.	
Management Server	2) ERRDEF(MS, INVALID_CTRESP, LOG_ERROR, 0, "MS Invalid CT Response from domain=%d\n");	MS received an invalid CT response.	MS expects either a CT accept IU or reject IU. The management server received neither, which violates the FS-GS spec.	

V4.0.x PDM Error Messages

Table 4–3: V4.0.x PDM Error Messages

Category	Message	Description	Probable Cause	Action
PDM	ERRDEF(PDM, SSPFAIL, LOG_WARNING, 0,	Snapshot to primary failed.		
PDM	ERRDEF(PDM, SSSFAIL, LOG_WARNING, 0,	Snapshot to secondary failed.		
PDM	ERRDEF(PDM, CPFAIL, LOG_WARNING, 0,	Unable to copy files over to...		
PDM	ERRDEF(PDM, GENFAIL, LOG_WARNING, 0,	Unable to increment the gen....		

Table 4–3: V4.0.x PDM Error Messages (Continued)

Category	Message	Description	Probable Cause	Action
PDM	ERRDEF(PDM, WWNFAIL, LOG_WARNING, 0,	Unable to write gen number to...		
PDM	ERRDEF(PDM, IPCFAIL, LOG_WARNING, 0,	IPC call failed (note_gen_out:...		
PDM	ERRDEF(PDM, INVCPS, LOG_WARNING, 0,	CPSlot changed! PDM needs to...		
PDM	ERRDEF(PDM, MEMERR, LOG_WARNING, 0,	Memory allocation failure! \n...		

V4.0.x System Error Messages

Table 4–4: V4.0.x Overall System Error Messages (Sheet 1 of 10)

Category	Message	Description	Probable Cause	Action
OS	BLOOM, 1RSVD_MINIBUF	Port has only one reserved mini buffer left	OS error	Contact customer support
OS	BLOOM, AVAILABLE_BUF_ OVERFLOW	Available buffer overflow	OS error	Contact customer support
OS	BLOOM, BAD_BUF_NO	Bad buffer number	OS error	Contact customer support
OS	BLOOM, BE_PORT_BUF_TO	No buffers for the backend port	OS error	Contact customer support
OS	BLOOM, BISR_FAILED	cmBisr test failed	OS error	Contact customer support
OS	BLOOM, BUF_RECLAIMED	Port re-enabled due to RX buffers becoming available	OS error	Contact customer support

Table 4–4: V4.0.x Overall System Error Messages (Sheet 2 of 10)

Category	Message	Description	Probable Cause	Action
OS	BLOOM, BUFFER_ OVERRUN	Buffer overrun	OS error	Contact customer support
OS	BLOOM, CMBISR	BISR, BIST failed	OS error	Contact customer support
OS	BLOOM, CMBISRTO	BISR, BIST time-out	OS error	Contact customer support
OS	BLOOM, CMEM_ERR	Port central memory error	OS error	Contact customer support
OS	BLOOM, CMI_ERR	CMI error	OS error	Contact customer support
OS	BLOOM, EMB_PORT_BUF_ TO	No buffers for the embedded port	OS error	Contact customer support
OS	BLOOM, EXCESSIVE_BUSY _MINI	Excessive busy mini buffer	OS error	Contact customer support
OS	BLOOM, EXCESSIVE_RCC_ VC	Excessive rcc_vc	OS error	Contact customer support
OS	BLOOM, FDET_BUFTAG		OS error	Contact customer support
OS	BLOOM, FDET_ERR	Failure detection: embedded port error	OS error	Contact customer support
OS	BLOOM, INCONSISTENT	Inconsistency in the bloom driver	OS error	Contact customer support
OS	BLOOM, INCONSISTENT_ EXT	Inconsistency in the bloom driver with extensive information printed out.	OS error	Contact customer support

Table 4–4: V4.0.x Overall System Error Messages (Sheet 3 of 10)

Category	Message	Description	Probable Cause	Action
OS	BLOOM, INVALID_LIST_ TRIGGER	Frame filtering logic, unknown list triggered	OS error	Contact customer support
OS	BLOOM, LISTD_TRIGGER	Frame filtering logic, list D triggered	OS error	Contact customer support
OS	BLOOM, MALLOC	Memory allocation failed	OS error	Contact customer support
OS	BLOOM, MALLOC_EXT	Memory allocation failed with extensive information printed out.	OS error	Contact customer support
OS	BLOOM, NO_BUFFERS	Port disabled due to lack of buffers	OS error	Contact customer support
OS	BLOOM, NULL_PTR	NULL pointer	OS error	Contact customer support
OS	BLOOM, NULL_PTR_EXT	NULL pointer with extensive information printed out	OS error	Contact customer support
OS	BLOOM, OVERRUN_INT_ RCVD	Memory overrun	OS error	Contact customer support
OS	BLOOM, PORT_INIT_STUCK	Port initialization stuck	OS error	Contact customer support
OS	BLOOM, RAM_PAR_ERR	RAM parity error	OS error	Contact customer support
OS	BLOOM, RAM_PAR_ERR_2	RAM parity error	OS error	Contact customer support
OS	BLOOM, RAMINIT_TO	Port RAM initialization failed	OS error	Contact customer support

Table 4–4: V4.0.x Overall System Error Messages (Sheet 4 of 10)

Category	Message	Description	Probable Cause	Action
OS	BLOOM, SMI_STUCK	Read mini port stuck because SMI operation still running	OS error	Contact customer support
OS	BLOOM, SUSPENDED_INT_RCVD	Interrupt suspended	OS error	Contact customer support
OS	BLOOM, TX_PAR_FDET_ERR	Failure detection: TX parity error	OS error	Contact customer support
OS	BLOOM, TX_PARITY_ERR	Port TX parity error	OS error	Contact customer support
OS	FABRIC, ASYNC	The request IU and response IU are in ASYNC state	OS error	Contact customer support
OS	FABRIC, ASYNC_COMMAND	An async command is issued	OS error	Contact customer support
OS	FABRIC, BADILS	An IU with invalid size is received	OS error	Contact customer support
OS	FABRIC, FAB_EFP_ERROR	Errors during Exchange Fabric Parameter state (cannot allocate domain list, bad EFP type)	OS error	Contact customer support
OS	FABRIC, FAB_EXCH_ERROR	Duplicate exchange ID	OS error	Contact customer support
OS	FABRIC, FAB_FWD_ERROR	Errors during Forward state (cannot cleanup the node)	OS error	Contact customer support
OS	FABRIC, FAB_IU_FREE	Failure in de-allocating an IU	OS error	Contact customer support
OS	FABRIC, FAB_LR_ERROR	Errors during Link Reset state	OS error	Contact customer support

Table 4–4: V4.0.x Overall System Error Messages (Sheet 5 of 10)

Category	Message	Description	Probable Cause	Action
OS	FABRIC, FAB_NODE_FREE	Failure in de-allocating a node	OS error	Contact customer support
OS	FABRIC, FAB_RDI_ERROR	Errors during Request Domain ID state (cannot allocate/send IU)	OS error	Contact customer support
OS	FABRIC, FAB_TYPE_ ERROR	Fabric is not in the appropriate state for a specific process	OS error	Contact customer support
OS	FABRIC, NO_ALIASID	Fabric has no more multicast aliasIDs to assign to alias server	OS error	Contact customer support
OS	FABRIC, SEGMENTED	Fabric becomes segmented	OS error	Contact customer support
OS	FABSYS, INVAL_OBJ	The object is not a valid blade, nor a valid Env unit (power supply, blower, or WWN)	OS error	Contact customer support
OS	FABSYS, MALLOC	Failure in allocating the memory	OS error	Contact customer support
OS	FABSYS, NOT_SUPPORT	Not supported by the switch	OS error	Contact customer support
OS	FABSYS, NULL_VAL	A NULL pointer is detected	OS error	Contact customer support
OS	FABSYS, SCN_TBL_FUNC	Failure on executing system-dependent control functions such as enable/disable the slot, fence the blade, etc.	OS error	Contact customer support
OS	FABSYS, SERVICE		OS error	Contact customer support

Table 4–4: V4.0.x Overall System Error Messages (Sheet 6 of 10)

Category	Message	Description	Probable Cause	Action
OS	FABSYS, SYS_CALL	Failure on system calls;	OS error	Contact customer support
OS	FCIU, IUBAD	Invalid IU	OS error	Contact customer support
OS	FCIU, IUCOUNT	IU count < 0	OS error	Contact customer support
OS	FCPH, EXCHBAD	Bad exchange ID	OS error	Contact customer support
OS	FCPH, EXCHFREE	Exchange ID freed	OS error	Contact customer support
OS	FSPF, ADDBRANCH	Add branch failed	OS error	Contact customer support
OS	FSPF, ADDPATH	Add path failed	OS error	Contact customer support
OS	FSPF, ADDPORT	Add port failed	OS error	Contact customer support
OS	FSPF, DEADTIMEOUT	Incompatible inactivity time-out	OS error	Contact customer support
OS	FSPF, DOUBLEPATH	Duplicate Path to Domain	OS error	Contact customer support
OS	FSPF, DUPEPORTSCN	Duplicate E_Port SCN	OS error	Contact customer support
OS	FSPF, HLOTIMEOUT	Incompatible Hello message time-out	OS error	Contact customer support

Table 4–4: V4.0.x Overall System Error Messages (Sheet 7 of 10)

Category	Message	Description	Probable Cause	Action
OS	FSPF, INPORT	Input port out of range	OS error	Contact customer support
OS	FSPF, INVHLO	Invalid Hello message received	OS error	Contact customer support
OS	FSPF, INVLSR	Unknown Link State Record type	OS error	Contact customer support
OS	FSPF, INVLSU	Discard received Link State Update	OS error	Contact customer support
OS	FSPF, LINKCNT	Link count exceeded in received Link State Record	OS error	Contact customer support
OS	FSPF, LSID	Link State ID out of range	OS error	Contact customer support
OS	FSPF, LSRLEN	Excessive Link State Update length	OS error	Contact customer support
OS	FSPF, MAXINCARN	Local Link State Record reached max incarnation	OS error	Contact customer support
OS	FSPF, NBRCHANGE	Wrong neighbor ID in Hello message from port	OS error	Contact customer support
OS	FSPF, NGBRSTATE	Wrong input to neighbor FSM	OS error	Contact customer support
OS	FSPF, NOLOCALENTRY	No database entry for local Link State Record	OS error	Contact customer support
OS	FSPF, NOLSR	No Link State Record for this domain	OS error	Contact customer support

Table 4–4: V4.0.x Overall System Error Messages (Sheet 8 of 10)

Category	Message	Description	Probable Cause	Action
OS	FSPF, NOPARENT	Null parent	OS error	Contact customer support
OS	FSPF, NOPARENTLSR	Null lsrP	OS error	Contact customer support
OS	FSPF, RCVDOMAIN	Invalid domain ID received	OS error	Contact customer support
OS	FSPF, RELICPDB	Relic PDB to the specific domain	OS error	Contact customer support
OS	FSPF, REMBRANCH	Remove branch failed	OS error	Contact customer support
OS	FSPF, REMDOMAIN	Remote Domain ID out of range	OS error	Contact customer support
OS	FSPF, REMPORT	Remove port failed	OS error	Contact customer support
OS	FSPF, REMPORT	Remove port failed	OS error	Contact customer support
OS	FSPF, RRTIM	Invalid reroute timer ID	OS error	Contact customer support
OS	FSPF, SCN	Illegal SCN	OS error	Contact customer support
OS	FSPF, SECTION	Wrong Section ID	OS error	Contact customer support
OS	FSPF, UNREACHABLE	No minimum cost path in candidate list	OS error	Contact customer support

Table 4–4: V4.0.x Overall System Error Messages (Sheet 9 of 10)

Category	Message	Description	Probable Cause	Action
OS	FSPF, UNREACHABLE	No minimum cost path in the candidate list	OS error	Contact customer support
OS	FSPF, VERSION	FSPF Version not supported	OS error	Contact customer support
OS	FSPF, XMITDOMAIN	Transmitting invalid domain ID	OS error	Contact customer support
OS	FSPF, XMITFLAG	DB_XMIT_SET flag not set in state	OS error	Contact customer support
OS	MQ, MSGTYPE	Message type	OS error	Contact customer support
OS	MQ, QREAD	Read from a queue	OS error	Contact customer support
OS	MQ, QTHR	Message queue threshold exceeded	OS error	Contact customer support
OS	MQ, QWRITE	Write to a message queue	OS error	Contact customer support
OS	PANIC, FREE	Failure in de-allocating the memory	OS error	Contact customer support
OS	PANIC, FREETIMRLSD	Free timer released	OS error	Contact customer support
OS	PANIC, INCONSISTENT	Inconsistency-related issues, such as different ASIC revisions found within a quad.	OS error	Contact customer support
OS	PANIC, LSDB_CKSUM	Failure in Link State Database checksum	OS error	Contact customer support

Table 4–4: V4.0.x Overall System Error Messages (Sheet 10 of 10)

Category	Message	Description	Probable Cause	Action
OS	PANIC, MALLOC	Failure in allocating the memory	OS error	Contact customer support
OS	PANIC, QCREATE	Failure in creating a message queue	OS error	Contact customer support
OS	PANIC, QDELETE	Failure in deleting a message queue	OS error	Contact customer support
OS	PANIC, SEMCREATE	Failure in creating a semaphore	OS error	Contact customer support
OS	PANIC, SEMDELETE	Failure in deleting a semaphore	OS error	Contact customer support
OS	PANIC, ZOMTIMKILL	Zombie timer destroyed	OS error	Contact customer support
OS	PANIC, ZOMTIMSET	Zombie timer set	OS error	Contact customer support
OS	SEMA, SEMFLUSH	Failure when flushing the semaphore queue	OS error	Contact customer support
OS	SEMA, SEMGIVE	Failure when releasing a semaphore	OS error	Contact customer support
OS	SEMA, SEMTAKE	Failure when taking a semaphore	OS error	Contact customer support
OS	SYS, NOMEM	Failure in allocating the memory	OS error	Contact customer support

V4.0.x Security Error Messages

Table 4–5: V4.0.x Security Error Messages

Category	Message	Description	Probable Cause	Action
Security	1) ERRDEF(TRACK, LOGIN, LOG_INFO, 0, "Successful login\n");	Login attempt to the switch using telnet or console is successful.		
Security	2) ERRDEF(TRACK, FAILED_LOGIN, LOG_INFO, 0, "Unsuccessful login\n");	Login attempt to the switch using telnet or console is unsuccessful.		
Security	3) ERRDEF(TRACK, LOGOUT, LOG_INFO, 0, "Logout\n");	A user has logged out of the switch.		
Security	4) ERRDEF(TRACK, CONFIG_CHANGE, LOG_INFO, 0, "Config file change from task:%s\n");	Switch configuration has changed.		
Security	5) ERRDEF(TRACK, TRACK_ON, LOG_INFO, 0, "Track-changes on\n");	Track Changes are set to be logged as err log messages.		
Security	6) ERRDEF(TRACK, TRACK_OFF, LOG_INFO, 0, "Track-changes off\n");	Track Changes are not to be sent as err log messages to err log daemon.		

5

General Diagnostic Error Message Information

This chapter provides the following information:

- The Purpose of Diagnostics on page 5–1
- Circuit and Functional Diagnostics on page 5–2
- Switch Initialization on page 5–3
- Port Error Conditions on page 5–3
- Additional Information about Diagnostics on page 5–3
- Displaying Diagnostic Error Messages Using Telnet on page 5–4
- Displaying Additional Diagnostic Error Message Information on page 5–4
- Resetting Bad Ports on page 5–5

The Purpose of Diagnostics

The purpose of diagnostics is to:

- Support the manufacturing process
- Instill customer confidence

The purpose of diagnostics is not to:

- Validate internal ASIC features
- Generate internal component fault coverage
- Isolate faults in the CPU support logic

NOTE: There are no specific diagnostic tests for either Ethernet or UART external communication ports.

Circuit and Functional Diagnostics

There are two kinds of diagnostic tests:

- The *circuit diagnostic test* that performs basic tests of the circuits.
  For example: bit write/read tests of the switch registers and memories. These tests must pass before the switch can be expected to be operationally or functionally tested.
- The *functional diagnostic test* that verifies the intended operational behavior of the switch by running frames through the ports.

Diagnostic tests are run *offline* with few exceptions. That means the switch must be disabled before they are executed. For more information about the these commands, refer to the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Circuit Diagnostics

The following tests perform circuit diagnostics:

- turboRamTest – DRAM address and data
- portRegTest – ASIC internal register
- centralMemoryTest – BISR and internal ASIC central memory
- cmiTest – ASIC to ASIC bus
- sramRetentionTest – SRAM data and refresh
- cmemRetentionTest – Central memory refresh

Functional Diagnostics

The following tests perform functional diagnostics:

- portLoopbackTest – Frame data validation by sending single frame back to self without leaving the ASIC
- crossPortTest – Frame data validation by sending single frame to other ports while involving Serdes and Media
- spinSilk – High speed frame passing between ports
- spinFab – ASIC trunking feature (requires two switches)
- camTest – Quickloop CAM SID translation

Switch Initialization

At power on, the boot PROM diagnostics:

- Verify CPU DRAM memory
- Initialize base OS (V3.0.x, V4.0.x)
- Initialize ASICs and front panel
- Initialize link for all ports (put online)
- Execute POST 1 and POST 2 tests
- Explore the fabric and determine the master switch
- Assign addresses to ports
- Build unicast routing tables
- Enable N-port operations

Port Error Conditions

The port error conditions are:

- NO_SYNC and NO_SEGMENT errors indicate that the port has a problem initializing. Usually due to Media of loopback device (cable or plug).
- ERRSTAT and ERRSTATS generally indicate that the port is good enough to initialize, but not good enough to sustain traffic. Usually due to signal integrity.
- PORTDIED and TIMEOUT errors indicate that frame data issues caused the low level driver or hardware to discard a frame or take a port offline.

Additional Information about Diagnostics

More information about, and help regarding diagnostics is available in:

- `diagHelp` command
  - backPort – Backplane routing and VC allocation test.
  - centralMemoryTest – Central memory diagnostic.
  - cmemRetentionTest – Central Mem Data Retention diagnostic.
  - cmiTest – CMI bus connection diagnostic.

  - camTest – Quickloop CAM diagnostic.
  - turboRamTest – Turbo speed asic SRAM diagnostic.
  - statsTest – Statistics counter diagnostic.
  - portLedTest – User Ports LED exerciser.
  - filterTest – Frame filter diagnostic.
  - backPlaneTest – Backplane connection diagnostic.
- Man pages (V4.0.x only).
- `diagCommandShow` "test" (V4.0.x only).

Displaying Diagnostic Error Messages Using Telnet

To display the error messages compiled by your system, perform the following procedure:

1. Login as an admin user to the switch, using a telnet connection.
2. From the prompt, enter the `errShow` command.
3. To scroll through the error list, press **Enter**.
4. Scroll through error log to view the error messages. If no errors are encountered, this message displays "No Errors".

For more information about the `errShow` command, refer to the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Displaying Additional Diagnostic Error Message Information

For additional, detailed information about the various parts of the diagnostic error message (V4.0.x only), use the `diagCommandShow` telnet command. For more information about the `diagCommandShow` command, refer to the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Resetting Bad Ports

If any port fails during a diagnostic test, it is marked BAD in the status display.

To retest a port which has been marked BAD, clear the port and set to OK using the `diagClearError` command. This command clears the port status only and does not clear the logs or change the port condition. The `diagClearError` command should only be used during diagnostic procedures to reset a bad port for retest. For more information about the `diagClearError` command, refer to the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

6

Diagnostic Error Message Formats

This chapter provides the following information:

- V3.0.x Diagnostic Error Message Format on page 6–1
- V4.0.x Diagnostic Error Message on page 6–2

V3.0.x Diagnostic Error Message Format

Error message formats for the switch are the same whether you are accessing the information from the local RS-232 serial port or using a remote telnet session.

The `errShow` command displays all detected errors. Errors are listed in reverse chronological order and up to 64 messages can be held in the buffer. Once the buffer limit is exceeded, the oldest message is deleted. For more information about the `errShow` command, refer to the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Example: Sample V3.0.x Diagnostic Error Message

```
switch:admin> errshow
Error 11
--------
0x101f8fa0 (tShell): Jul 23 15:16:57 (4)
Error, 1, TurboRam, pass 1,
Pt8 (Bm1.0) Failed Turbo RAM dec r/w test:
Type <CR> to continue, Q<CR> to stop:
```

In the above sample error message:

- `0x101f8fa0` = the Task ID.
- `tShell` = the Task Name.
- `Jul 23 15:16:57 (4)` = the date, time, and number of occurrences of the error.
- `Failed Turbo RAM dec r/w test` = the error description.

NOTE: Only diagnostic errors are assigned error numbers.

V4.0.x Diagnostic Error Message

Error message formats for the switch are the same whether you are accessing the information from the local RS-232 serial port or using a remote telnet session.

The `errShow` command displays all detected errors. Errors are listed in reverse chronological order and up to 64 messages can be held in the buffer. Once the buffer limit is exceeded, the oldest message is deleted. For more information about the `errShow` command, refer to the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Example: Sample V4.0.x Diagnostic Error Message Format:

```
ERROR: DIAG STATS backport, pass 2033,
Pt1/1(14) Ch1/6 FramesTx+Rx Counter Wrong, is 0 sb 14,
Err# 13B053D 010E
```

In the above sample error message:

- `ERROR: DIAG STATS` = Event_class: Generalizes the error by indicating the error is being reported by a diagnostic and that the error was found from monitoring ASIC statistic counters for the failing port.
- `backport, pass 2033,` = current test running along with pass number.
- `Pt1/1(14) Ch1/6` = Port reporting the fail (in slot #/user port #(blade port #) chip #/chip port # format).
- `FramesTx+Rx Counter Wrong, is 0 sb 14` = Text explaining the failure.
- `Err# 13B053D 010E` = Error string (error number).

NOTE: Only diagnostic errors are assigned an error string.

The Diagnostic Error String

The diagnostic error string (often referred to as the error number) is the series of numbers usually appearing at the end of the error message. The error string, when parsed, reveals additional information about the error.

Diagnostic Error String - Error Number

A diagnostic error number (ERR# xxxxxxx) appears at the beginning of the last line for each diagnostic error message. The diagnostic error number appears as a seven-digit number.

Example: Error string (for error message DIAG-CMIDATA)

Err# 13B053D 0201

where:

- **13B**053D identifies the test.
- 13B**05**3D identifies the subtest.
- 13B05**3D** identifies the error.

Diagnostic Error String - Slot and Blade Port Numbers

A number (xxxx) appears after the diagnostic error number, that indicates the slot and blade port numbers involved in the diagnostic error. The slot and blade port indicator appears as a four-digit number.

Example:

Error string (for error message DIAG-CMIDATA)

Err# 1340023 **0201**

where:

- The first two digits identify the slot number (in this case, slot 02).
- The third and fourth digits identify the 16-port card port number (in this case, port 01).

7

V3.0.x Diagnostic Error Messages by Error Number

This chapter provides the following information:

- V3.0.x Diagnostic Error Messages on page 7–1

V3.0.x Diagnostic Error Messages

Table 7–1 is organized by diagnostic error number; it lists the corresponding test that generated the error, the error message text, a description, probable cause, and the recovery action.

Test Names within this table, that are followed by an asterisk (*), are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

NOTE: If you run the `portStatsShow` or the `diagShow` command prior to running an individual test, errors may appear as a result of the normal synchronization process. These errors should be addressed if the number of errors found increases after running the `portStatsShow` command again.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 1 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
0001	n/a	DIAG-CLEAR_ERR	The port diag error flag (OK or BAD) is cleared.	Informa-tional Only	None required
0004	n/a	DIAG-POST_ SKIPPED	POST is skipped.	Informa-tional Only	None required
* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.					

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 2 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
0110	ramTest *	DIAG-MEMORY	Data read from RAM location did not match previously written data into same location.	CPU RAM failure	Replace mainboard assembly or SDRAM module
0111	ramTest *	DIAG-MEMSZ	Memory size to be tested is less than or equal to zero.	mainboard failure	Replace mainboard assembly or SDRAM module
0112	ramTest *	DIAG-MEMNULL	Test failed to malloc.	mainboard failure	Replace mainboard assembly or SDRAM module
0415	portRegTest*	DIAG-REGERR	Data read from ASIC register or ASIC SRAM did not match data previously written into same location.	ASIC failure	Replace mainboard assembly
0416	portRegTest*	DIAG-REGERR_ UNRST	Port failed to unreset despite 3 retries.	ASIC failure	Replace mainboard assembly
1020	centralMemory Test *	DIAG-CMBISRTO	The ASIC Central Memory SRAMs did not complete the BISR within the time-out period.	ASIC failure	Replace mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 3 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
1021	centralMemory Test *	DIAG-CMBISRF	The ASIC Central Memory SRAMs did not complete the BISR within the time-out period.	ASIC failure	Replace mainboard assembly
1025	centralMemory Test *	DIAG-LCMRS	Central Memory Read Short: M bytes requested but not received.	ASIC failure	Replace mainboard assembly
1026	centralMemory Test *	DIAG-LCMTO	Central Memory Time-out: Data transfer initiated did not complete within the time-out period.	ASIC failure	Replace mainboard assembly
1027	centralMemory Test *	DIAG-LCMEM	Data read from the Central Memory location did not match data previously written into the same location.	ASIC failure	Replace mainboard assembly
1028	centralMemory Test *	DIAG-LCMEMTX	Central Memory transmit path failure: ASIC 1 failed to read ASIC 2 using the transmit path.	mainboard failure	Replace mainboard assembly
1029	centralMemory Test *	DIAG-CMNOBUF	Port could not get any buffer.	ASIC failure	Replace mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 4 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
2030	cmiTest *	DIAG- BADINIT	Port received an unexpected interrupt.	ASIC failure	Replace mainboard assembly
2031	cmiTest *	DIAG-INTNIL	ASIC failed to get a CMI error (interrupt).	ASIC failure	Replace mainboard assembly
2032	cmiTest *	DIAG-CMISA1	An attempt to send a CMI message from ASIC to ASIC failed.	ASIC failure	Replace mainboard assembly
2033	cmiTest *	DIAG-CMINOCAP	CMI intended receiver ASIC failed to get CMI capture flag.	ASIC or mainboard failure	Replace mainboard assembly
2034	cmiTest *	DIAG-CMIINVCAP	Unintended ASIC erroneously got CMI capture flag.	ASIC or mainboard failure	Replace mainboard assembly
2035	cmiTest *	DIAG-CMIDATA	CMI data received did not match data transmitted.	ASIC or mainboard failure	Replace mainboard assembly
2036	cmiTest *	DIAG-CMICKSUM	CMI message received failed.	ASIC or mainboard failure	Replace mainboard assembly
2271	camTest	DIAG-XMIT	Port failed to transmit frame.	ASIC failure	Replace mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 5 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
2640	portLoopback Test *	DIAG-ERRSTAT (ENCIN)	Port Error Statistics counter is non-zero, meaning an "Encoding error, inside frame" error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
2641	portLoopback Test *	DIAG-ERRSTAT (CRC)	Port Error Statistics counter is non-zero, meaning a "Cyclic redundancy check on frame failed" error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
2642	portLoopback Test *	DIAG-ERRSTAT (TRUNC)	Port Error Statistics counter is non-zero, meaning a "Truncated frame" error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 6 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
2643	portLoopback Test *	DIAG-ERRSTAT (2LONG)	Port Error Statistics counter is non-zero, meaning a “Frame too long” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
2644	portLoopback Test *	DIAG-ERRSTAT (BADEOF)	Port Error Statistics counter is non-zero, meaning a “Bad end of file” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
2645	portLoopback Test *	DIAG-ERRSTAT (ENCOUT)	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 7 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
2646	portLoopback Test *	DIAG-ERRSTAT (BADORD)	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
2647	portLoopback Test *	DIAG-ERRSTAT (DISCC3)	Port Error Statistics counter is non-zero, meaning a “Discarded Class 3 frames” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
2660	portLoopback Test *	DIAG-STATS(FTX)	Port counter value did not match the number of frames actually transmitted.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
2661	portLoopback Test *	DIAG-STATS(FRX)	Port counter value did not match the number of frames actually transmitted.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 8 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
2662	portLoopback Test *	DIAG-STATS (C3FRX)	Port counter value did not match the number of frames actually transmitted.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
2670	portLoopback Test *	DIAG-PORTABSENT	Port is not present	ASIC or mainboard failure	Replace mainboard assembly
2671	portLoopback Test *	DIAG-XMIT	Port failed to transmit frame	ASIC failure	Replace mainboard assembly
3040	crossPortTest	DIAG-ERRSTAT (ENCIN)	Port Error Statistics counter is non-zero, meaning an “Encoding error, inside frame” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3041	portLoopback Test *	DIAG-ERRSTAT (CRL)	Port Error Statistics counter is non-zero, meaning a “Cyclic redundancy check on frame failed” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 9 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
3042	portLoopback Test *	DIAG-ERRSTAT (TRUNC)	Port Error Statistics counter is non-zero, meaning a "Truncated frame" error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3043	portLoopback Test *	DIAG-ERRSTAT (2LONG)	Port Error Statistics counter is non-zero, meaning a "Frame too long" error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3044	portLoopback Test *	DIAG-ERRSTAT (BADEOF)	Port Error Statistics counter is non-zero, meaning a "Bad end of file" error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 10 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
3045	portLoopback Test *	DIAG-ERRSTAT (ENCOUT)	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3046	portLoopback Test *	DIAG-ERRSTAT (BADORD)	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3047	portLoopback Test *	DIAG-ERRSTAT (DISC3)	Port Error Statistics counter is non-zero, meaning a “Discarded Class 3 frames” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 11 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
3060	portLoopback Test *	DIAG-STATS (FTX)	Port counter value did not match the number of frames actually transmitted. In this case, FTX = number of frames transmitted.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3061	portLoopback Test *	DIAG-STATS (FRX)	Port counter value did not match the number of frames actually transmitted. In this case, FRX = number of frames received.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3062	portLoopback Test *	DIAG-STATS (C3FRX)	Port counter value did not match the number of frames actually transmitted. In this case, C3FRX = number of Class 3 frames received	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3070	portLoopback Test *	DIAG-PORTABSENT	Port is not present.	ASIC or mainboard failure	Replace mainboard assembly
3071	portLoopback Test *	DIAG-XMIT	Port failed to transmit frame.	ASIC failure	Replace mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 12 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
3078	portLoopback Test *	DIAG-PORTWRONG	Frame erroneously received by port M instead of the intended port N.	ASIC failure	Replace mainboard assembly
3080	spinSilk	DIAG-PORTM2M	Port is found to be connected to itself (self loopback). This Port M to Port M connection is not allowed by the test.	Improper cable connection	Reconnect port (M) to another port (N) and re-execute the test
3081	spinSilk	DIAG-NOSEGMENT	Port failed to go into loopback mode.	Improper media or cable connection	Reseat media and cables then re-execute test
3840	spinSilk	DIAG-ERRSTAT (ENCIN)	Port Error Statistics counter is non-zero, meaning an “Encoding error, inside frame” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 13 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
3841	spinSilk	DIAG-ERRSTAT (CRC)	Port Error Statistics counter is non-zero, meaning a "Cyclic redundancy check on frame failed" error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3842	spinSilk	DIAG-ERRSTAT (TRUNC)	Port Error Statistics counter is non-zero, meaning a "Truncated frame" error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3843	spinSilk	DIAG-ERRSTAT (2LONG)	Port Error Statistics counter is non-zero, meaning a "Frame too long" error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 14 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
3844	spinSilk	DIAG-ERRSTAT (BADEOF)	Port Error Statistics counter is non-zero, meaning a “Bad end of file” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3845	spinSilk	DIAG-ERRSTAT (ENCOUT)	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3846	spinSilk	DIAG-ERRSTAT (BADORD)	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 15 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
3847	spinSilk	DIAG-ERRSTAT (DISCC3)	Port Error Statistics counter is non-zero, meaning a "Discarded Class 3 frames" error was detected when receiving frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3870	spinSilk	DIAG-PORTABSENT	Port is not present.	ASIC or mainboard failure	Replace mainboard assembly
3871	spinSilk	DIAG-XMIT	Port failed to transmit frame.	ASIC failure	Replace mainboard assembly
3874	spinSilk	DIAG-PORTSTOPPED	Port is no longer transmitting, as indicated by the Number Of Frames Transmitted counter being stuck at N frames.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
3880	spinSilk	DIAG-PORTM2M	Port is found to be connected to itself (self loopback). This Port M to Port M connection is not allowed by the test.	Improper cable connection	Reconnect port (M) to another port (N) and re-execute the test. Replace mainboard assembly, media or fiber cable

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 16 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
3881	spinSilk	DIAG-NOSEGMENT	Port failed to go into loopback mode.	Improper media or cable connection	Reseat media and cables and re-execute test. Replace mainboard assembly, media or fiber cable
040F	portRegTest *	DIAG-BUS_ TIMEOUT	ASIC register or ASIC SRAM did not respond to an ASIC data access.	ASIC failure	Replace mainboard assembly
0B0F	sramRetention Test	DIAG-BUS_ TIMEOUT	ASIC register or ASIC SRAM did not respond to an ASIC data access.	ASIC failure	Replace mainboard assembly
0B15	sramRetention Test	DIAG-REGERR	Data read from ASIC register or ASIC SRAM did not match data previously written into same location.	ASIC failure	Replace mainboard assembly
0B16	sramRetention Test	DIAG-REGERR_ UNRST	Port failed to unreset.	ASIC failure	Replace mainboard assembly
0FA1	turboRAMTest	DIAG-TBRAM_INC_ WTEST	ASIC internal registers failed write operation.	ASIC failure	Replace mainboard assembly
0FA2	turboRAMTest	DIAG-TBRAM_INC_ RWTEST	ASIC internal registers failed read-modify-write operation.	ASIC failure	Replace mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 17 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
102A	centralMemory Test *	DIAG-CMERRTYPE	Port got the wrong CMEM error type.	ASIC failure	Replace mainboard assembly
102B	centralMemory Test *	DIAG-CMERRPTN	Error detected at the wrong port.	ASIC failure	Replace mainboard assembly
102C	centralMemory Test *	DIAG-INTNOTCLR	The interrupt bit could not be cleared.	ASIC failure	Replace mainboard assembly
1030	centralMemory Test *	DIAG-BADINT	Port received an unexpected interrupt.	ASIC failure	Replace mainboard assembly
386F	centralMemory Test *	DIAG-TIMEOUT	For portLoop backTest and crossPortTest: Port failed to receive frame within time-out period For central MemoryTest: Port failed to detect an interrupt within the time-out period	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
1F25	cmemRetention Test	DIAG-LCMRS	Central Memory Read Short: M bytes requested but not received.	ASIC failure	Replace mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 18 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
1F26	cmemRetention Test	DIAG-LCMTO	Central Memory Time-out: Data transfer initiated did not complete within the time-out period.	ASIC failure	Replace mainboard assembly
1F27	cmemRetention Test	DIAG-LCMEM	Data read from the Central Memory location did not match data previously written into the same location.	ASIC failure	Replace mainboard assembly
223B	camTest *	DIAG-CAMINIT	Port failed to initialize due to one of the following reasons: Switch not disabled Diagnostic queue absent Malloc failed Chip is not present Port is not in loopback mode Port is not active	Software operational setup error or main board failure	Retry, reboot or replace mainboard assembly
223C	camTest *	DIAG-CAMSID	ASIC failed SID NO translation test.	ASIC failure	Replace mainboard assembly
233E	filterTest	DIAG-CAMFLTR	ASIC internal logic failed.	ASIC failure	Replace mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 19 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
264F	portLoopback Test *	DIAG-INIT	Port failed to go active in the loopback mode requested.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
265F	portLoopback Test *	DIAG-PORT_DIED	Port was in loopback mode and then went inactive.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
266E	portLoopback Test *	DIAG-DATA	Payload received by port did not match payload transmitted.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
266F	portLoopback Test *	DIAG-TIMEOUT	For portLoop backTest and crossPortTest: Port failed to receive frame within time-out period For central MemoryTest: Port failed to detect an interrupt within the time-out period	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
304F	crossPortTest	DIAG-INIT	Port failed to go active in the loopback mode requested.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 20 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
305F	crossPortTest	DIAG-PORTDIED	Port was in loopback mode and then went inactive.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
306E	crossPortTest	DIAG-DATA	Payload received by port did not match payload transmitted.	mainboard , media or fiber cable failure	Replace mainboard assembly, media or fiber cable
306F	crossPortTest	DIAG-TIMEOUT	For portLoop backTest and crossPortTest: Port failed to receive frame within time-out period For central MemoryTest: Port failed to detect an interrupt within the time-out period	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
384F	spinSilk	DIAG-INIT	Port failed to go active in the loopback mode requested.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly
385F	spinSilk	DIAG-PORTDIED	Port was in loopback mode and then went inactive.	Fiber cable, media, mainboard /ASIC failure	Replace fiber cable, media, or mainboard assembly

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 7–1: V3.0.x Diagnostic Error Messages Listed by Error Number (Sheet 21 of 21)

Number	Test Name	Message Text	Description	Probable Cause	Action
5A3c (CRC frames Err#)	statisticsTest	DIAG-CAMSTAT	ASIC improperly counted number frames with CRC errors.	ASIC failure	Replace mainboard assembly
5A3c (CRC frame per ALPA Err#)	statisticsTest	DIAG-CAMSTAT	ASIC improperly counted number frames with ALPA errors.	ASIC failure	Replace mainboard assembly
5A3c (LINK table receive Err#)	statisticsTest	DIAG-CAMSTAT	ASIC improperly counted number frames with link table receive errors.	ASIC failure	Replace mainboard assembly
5A3c (LINK table transmit Err#)	statisticsTest	DIAG-CAMSTAT	ASIC improperly counted number frames with link table transmit errors.	ASIC failure	Replace mainboard assembly
* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.					

8

V4.0.x Diagnostic Error Messages by Error Number

This chapter provides the following information:

- V4.0.x Diagnostic Error Messages on page 8–1

V4.0.x Diagnostic Error Messages

Table 8–1 is organized by diagnostic error number. It lists the corresponding test that generated the error, the error message text, a description, probable cause, and the recovery action.

Test Names within this table, that are followed by an asterisk (*), are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

NOTE: If you run the `portStatsShow` or the `diagShow` command prior to running an individual test, errors may appear as a result of the normal synchronization process. These errors should be addressed if the number of errors found increases after running the `portStatsShow` command again.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 1 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
	n/a	DIAG-CLEAR_ERR	Port's diag error flag (OK or BAD) is cleared.	Informational Only	None required
	n/a	DIAG-POST_ SKIPPED	POST is skipped.	Informational Only	None required
* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.					

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 2 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1110021 1110121 1110221 1110321 1110421	portRegt Test	REG_ERR	Data read from ASIC register or ASIC SRAM did not match data previously written into same location.	ASIC failure	Replace 16-port card
1110022 1110122 1110222 1110322 1110422	portRegt Test	REG_ERR_UNRST	Port failed to unreset despite 3 retries.	ASIC failure	Replace 16-port card
1120020 1120120 1120220 1120320 1120420	sram Retention Test	BUS_TIMEOUT	ASIC register or ASIC SRAM did not respond to an ASIC data access.	ASIC failure	Replace 16-port card
1120021 1120121 1120221 1120321 1120421	sram Retention Test	REG_ERR	Data read from ASIC register or ASIC SRAM did not match data previously written into same location.	ASIC failure	Replace 16-port card
1120022 1120122 1120222 1120322 1120422	sram Retention Test	REG_ERR_UNRST	Port failed to unreset.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 3 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1200020 1200120 1200220 1200320 1200420 1200520 1200620 1200720 1200820 1200920 1200a20	central Memory Test	LCMEM_ERR	Data read from the Central Memory location did not match data previously written into the same location.	ASIC failure	Replace 16-port card
1200021 1200121 1200221 1200321 1200421 1200521 1200621 1200721 1200821 1200921 1200a21	central Memory Test	LCMEMTX_ERR	Central Memory transmit path failure: ASIC 1 failed to read ASIC 2 using the transmit path.	16-port card failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 4 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1200022 1200122 1200222 1200322 1200422 1200522 1200622 1200722 1200822 1200922 1200a22	central Memory Test	LCMRS_ERR	Central Memory Read Short: M bytes requested but not received.	ASIC failure	Replace 16-port card
1200023 1200123 1200223 1200323 1200423 1200523 1200623 1200723 1200823 1200923 1200a23	central Memory Test	CMTO_ERR	Central Memory Time-out: Data transfer initiated did not complete within the time-out period.	ASIC failure	Replace 16-port card
* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.					

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 5 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1200024 1200124 1200224 1200324 1200424 1200524 1200624 1200724 1200824 1200924 1200a24	central Memory Test	LCMTO_ERR	Central Memory Time-out: Data transfer initiated did not complete within the time-out period.	ASIC failure	Replace 16-port card
1200025 1200125 1200225 1200325 1200425 1200525 1200625 1200725 1200825 1200925 1200a25	central Memory Test	PORT_ABSENT	Port is not present.	ASIC or 16-port card failure	Replace 16-port card
* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.					

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 6 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1200026 1200126 1200226 1200326 1200426 1200526 1200626 1200726 1200826 1200926 1200a26	central Memory Test	BAD_INT	Port received an unexpected interrupt.	ASIC failure	Replace 16-port card
1200027 1200127 1200227 1200327 1200427 1200527 1200627 1200727 1200827 1200927 1200a27	central Memory Test	INT_NOT_CLR	The interrupt bit could not be cleared.	ASIC failure	Replace 16-port card
* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.					

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 7 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1200028 1200128 1200228 1200328 1200428 1200528 1200628 1200728 1200828 1200928 1200a28	central Memory Test	CM_ERR_TYPE	Port got the wrong CMEM error type.	ASIC failure	Replace 16-port card
1200029 1200129 1200229 1200329 1200429 1200529 1200629 1200729 1200829 1200929 1200a29	central Memory Test	CM_ERR_PTN	Error detected at the wrong port.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 8 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
120002a 120012a 120022a 120032a 120042a 120052a 120062a 120072a 120082a 120092a 1200a2a	central Memory Test	CM_BISR_TO	ASIC's Central Memory SRAMs did not complete the BISR within the time-out period.	ASIC failure	Replace 16-port card
120002b 120012b 120022b 120032b 120042b 120052b 120062b 120072b 120082b 120092b 1200a2b	central Memory Test	CM_BISR_F	ASIC's Central Memory SRAMs did not complete the BISR within the time-out period.	ASIC failure	Replace 16-port card
* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.					

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 9 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
120002c 120012c 120022c 120032c 120042c 120052c 120062c 120072c 120082c 120092c 1200a2c	central Memory Test	CM_NO_BUF	Port could not get any buffer.	ASIC failure	Replace 16-port card
120002d 120012d 120022d 120032d 120042d 120052d 120062d 120072d 120082d 120092d 1200a2d	central Memory Test	SMI_STUCK			

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 10 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
120002e 120012e 120022e 120032e 120042e 120052e 120062e 120072e 120082e 120092e 1200a2e	central Memory Test	TIMEOUT	For port Loopback Test and crossPort Test: Port failed to receive frame within time-out period For central MemoryTest: Port failed to detect an interrupt within the time-out period	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
120002f 120012f 120022f 120032f 120042f 120052f 120062f 120072f 120082f 120092f 1200a2f	central Memory Test	CM_RW_PERR	A parity error was detected during a read/write operation to central memory.	ASIC failure	Replace 16-port card
* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.					

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 11 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1210020 1210120 1210220 1210320 1210420 1210520 1210620 1210720 1210820 1210920 1210a20	cmem Retention Test	LCMEM_ERR	Data read from the Central Memory location did not match data previously written into the same location.	ASIC failure	Replace 16-port card
1210021 1210121 1210221 1210321 1210421 1210521 1210621 1210721 1210821 1210921 1210a21	cmem Retention Test	LCMEMTX_ERR	Central Memory transmit path failure: ASIC 1 failed to read ASIC 2 using the transmit path.	16-port card failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 12 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1210022 1210122 1210222 1210322 1210422 1210522 1210622 1210722 1210822 1210922 1210a22	cmem Retention Test	LCMRS_ERR	Central Memory Read Short: M bytes requested but not received.	ASIC failure	Replace 16-port card
1210023 1210123 1210223 1210323 1210423 1210523 1210623 1210723 1210823 1210923 1210a23	cmem Retention Test	CMTO_ERR	Central Memory Time-out: Data transfer initiated did not complete within the time-out period.	ASIC failure	Replace 16-port card
* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.					

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 13 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1210024 1210124 1210224 1210324 1210424 1210524 1210624 1210724 1210824 1210924 1210a24	cmem Retention Test	LCMTO_ERR	Central Memory Time-out: Data transfer initiated did not complete within the time-out period.	ASIC failure	Replace 16-port card
1210025 1210125 1210225 1210325 1210425 1210525 1210625 1210725 1210825 1210925 1210a25	cmem Retention Test	PORT_ABSENT	Port is not present.	ASIC or 16-port card failure	Replace 16-port card
* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.					

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 14 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1210026 1210126 1210226 1210326 1210426 1210526 1210626 1210726 1210826 1210926 1210a26	cmem Retention Test	BAD_INT	Port received an unexpected interrupt.	ASIC failure	Replace 16-port card
1210027 1210127 1210227 1210327 1210427 1210527 1210627 1210727 1210827 1210927 1210a27	cmem Retention Test	INT_NOT_CLR	The interrupt bit could not be cleared.	ASIC failure	Replace 16-port card
* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.					

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 15 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1210028 1210128 1210228 1210328 1210428 1210528 1210628 1210728 1210828 1210928 1210a28	cmem Retention Test	CM_ERR_TYPE	Port got the wrong CMEM error type.	ASIC failure	Replace 16-port card
1210029 1210129 1210229 1210329 1210429 1210529 1210629 1210729 1210829 1210929 1210a29	cmem Retention Test	CM_ERR_PTN	Error detected at the wrong port.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 16 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
121002a 121012a 121022a 121032a 121042a 121052a 121062a 121072a 121082a 121092a 1210a2a	cmem Retention Test	CM_BISR_TO	ASIC's Central Memory SRAMs did not complete the BISR within the time-out period.	ASIC failure	Replace 16-port card
121002b 121012b 121022b 121032b 121042b 121052b 121062b 121072b 121082b 121092b 1210a2b	cmem Retention Test	CM_BISR_F	ASIC's Central Memory SRAMs did not complete the BISR within the time-out period.	ASIC failure	Replace 16-port card
* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.					

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 17 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
121002c 121012c 121022c 121032c 121042c 121052c 121062c 121072c 121082c 121092c 1210a2c	cmem Retention Test	CM_NO_BUF	Port could not get any buffer.	ASIC failure	Replace 16-port card
121002d 121012d 121022d 121032d 121042d 121052d 121062d 121072d 121082d 121092d 1210a2d	cmem Retention Test	SMI_STUCK	ASIC special memory interface has a stuck status indicator.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 18 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
121002e 121012e 121022e 121032e 121042e 121052e 121062e 121072e 121082e 121092e 1210a2e	cmem Retention Test	TIMEOUT	Port failed to detect an interrupt within the time-out period	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
121002f 121012f 121022f 121032f 121042f 121052f 121062f 121072f 121082f 121092f 1210a2f	cmem Retention Test	CM_RW_PERR	A parity error was detected during a read/write operation to central memory.	ASIC failure	Replace 16-port card
1260120 1260220 1260320 1260420 1260520	turbo RAMTest	TBRAM_WTEST	ASIC internal registers failed write operation.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 19 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1260121 1260221 1260321 1260421 1260521	turbo RAMTest	TBRAM_INC_ RWTEST	ASIC internal registers failed read-modify-write operation.	ASIC failure	Replace 16-port card
1260122 1260222 1260322 1260422 1260522	turbo RAMTest	TBRAM_DEC_ RWTEST	ASIC internal registers failed read-modify-write operation.	ASIC failure	Replace 16-port card
1260123 1260223 1260323 1260423 1260523	turbo RAMTest	RAMINIT_TO	ASIC internal RAM initialization circuit timed out.	ASIC failure	Replace 16-port card
1300020 1300120 1300220 1300320 1300420 1300520	spinSilk	ERR_STAT_ENCIN	Port Error Statistics counter is non-zero, meaning an “Encoding error, inside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300021 1300121 1300221 1300321 1300421 1300521	spinSilk	ERR_STAT_CRC	Port Error Statistics counter is non-zero, meaning a “Cyclic redundancy check on frame failed” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 20 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1300022 1300122 1300222 1300322 1300422 1300522	spinSilk	ERR_STAT_TRUNC	Port Error Statistics counter is non-zero, meaning a “Truncated frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300023 1300123 1300223 1300323 1300423 1300523	spinSilk	ERR_STAT_2LONG	Port Error Statistics counter is non-zero, meaning a “Frame too long” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300024 1300124 1300224 1300324 1300424 1300524	spinSilk	ERR_STAT_ BADEOF	Port Error Statistics counter is non-zero, meaning a “Bad end of file” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300025 1300125 1300225 1300325 1300425 1300525	spinSilk	ERR_STAT_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300026 1300126 1300226 1300326 1300426 1300526	spinSilk	ERR_STAT_BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 21 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1300027 1300127 1300227 1300327 1300427 1300527	spinSilk	ERR_STAT_C3DISC	Port Error Statistics counter is non-zero, meaning a "Discarded Class 3 frames" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300028 1300128 1300228 1300328 1300428 1300528	spinSilk	ERR_STAT	One of the ASIC internal counters detected an error.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300029 1300129 1300229 1300329 1300429 1300529	spinSilk	XMIT	Port failed to transmit frame.	ASIC failure	Replace 16-port card
130002a 130012a 130022a 130032a 130042a 130052a	spinSilk	PORT_M2M	Port is found to be connected to itself (self loopback). This Port M to Port M connection is not allowed by the test.	Improper cable connection	Re-connect port (M) to another port (N) and re-execute the test
130002b 130012b 130022b 130032b 130042b 130052b	spinSilk	PORT_ABSENT	Port is not present.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 22 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
130002c 130012c 130022c 130032c 130042c 130052c	spinSilk	PORT_DIED	Port was in loopback mode and then went inactive.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
130002d 130012d 130022d 130032d 130042d 130052d	spinSilk	PORT_ENABLE	ASIC driver detected an error when attempting to bring the port online.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
130002e 130012e 130022e 130032e 130042e 130052e	spinSilk	PORT_STOPPED	Port is no longer transmitting, as indicated by the Number Of Frames Transmitted counter being stuck at N frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
130002f 130012f 130022f 130032f 130042f 130052f	spinSilk	PORT_WRONG	Frame erroneously received by port M instead of the intended port N.	ASIC failure	Replace 16-port card
1300030 1300130 1300230 1300330 1300430 1300530	spinSilk	ERR_STATS_ ENCIN	Port Error Statistics counter is non-zero, meaning an “Encoding error, inside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 23 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1300031 1300131 1300231 1300331 1300431 1300531	spinSilk	ERR_STATS_CRC	Port Error Statistics counter is non-zero, meaning a “Cyclic redundancy check on frame failed” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300032 1300132 1300232 1300332 1300432 1300532	spinSilk	ERR_STATS_ TRUNC	Port Error Statistics counter is non-zero, meaning a “Truncated frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300033 1300133 1300233 1300333 1300433 1300533	spinSilk	ERR_STATS_ 2LONG	Port Error Statistics counter is non-zero, meaning a “Frame too long” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300034 1300134 1300234 1300334 1300434 1300534	spinSilk	ERR_STATS_ BADEOF	Port Error Statistics counter is non-zero, meaning a “Bad end of file” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300035 1300135 1300235 1300335 1300435 1300535	spinSilk	ERR_STATS_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 24 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1300036 1300136 1300236 1300336 1300436 1300536	spinSilk	ERR_STATS_ BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300037 1300137 1300237 1300337 1300437 1300537	spinSilk	ERR_STATS_ C3DISC	Port Error Statistics counter is non-zero, meaning a “Discarded Class 3 frames” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300038 1300138 1300238 1300338 1300438 1300538	spinSilk	ERR_STATS	ASIC internal error counters detected an error condition.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1300039 1300139 1300239 1300339 1300439 1300539	spinSilk	TIMEOUT	Port failed to detect an interrupt within the time-out period	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
130003a 130013a 130023a 130033a 130043a 130053a	spinSilk	INIT	Port failed to go active in the loopback mode requested.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 25 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
130003b 130013b 130023b 130033b 130043b 130053b	spinSilk	DATA	Payload received by port did not match payload. transmitted	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
130003c 130013c 130023c 130033c 130043c 130053c	spinSilk	NO_SEGMENT	Port failed to go into loopback mode.	Improper media or cable connection	Reseat media and cables then re-execute test
130003d 130013d 130023d 130033d 130043d 130053d	spinSilk	STATS_FTX	Port counter value did not match the number of frames actually transmitted. In this case, FTX = number of frames transmitted.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
130003e 130013e 130023e 130033e 130043e 130053e	spinSilk	STATS_FRX	Port counter value did not match the number of frames actually transmitted. In this case, FRX = number of frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
130003f 130013f 130023f 130033f 130043f 130053f	spinSilk	STATS_C3FRX	Port counter value did not match the number of frames actually transmitted. In this case, C3FRX = number of Class 3 frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 26 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1300040 1300140 1300240 1300340 1300440 1300540	spinSilk	STATS	An ASIC internal statistics counter incremented incorrectly.	ASIC failure	Replace 16-port card
1300041 1300141 1300241 1300341 1300441 1300541	spinSilk	MBUF_STATE_ERR	Minibuffer state checking error.	ASIC failure	Replace 16-port card
1300042 1300142 1300242 1300342 1300442 1300542	spinSilk	FINISH_MSG_ERR	Error detected by the ASIC frame finish message handling logic.	ASIC failure	Replace 16-port card
1300043 1300143 1300243 1300343 1300443 1300543	spinSilk	RXQ_RAM_PERR	A parity error was detected in the receive queing RAM of the ASIC.	ASIC failure	Replace 16-port card
1300044 1300144 1300244 1300344 1300444 1300544	spinSilk	RXQ_FRAME_ERR	A data error was detected in the receive port queing memory.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 27 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1300045 1300145 1300245 1300345 1300445 1300545	spinSilk	FDET_PERR	ASIC internal failure detect memory found a parity error.	ASIC failure	Replace 16-port card
1300046 1300146 1300246 1300346 1300446 1300546	spinSilk	MBUF_STATUS_ ERR	If in force failure mode, bad minisate buffer status found.	ASIC failure	Replace 16-port card
1300047 1300147 1300247 1300347 1300447 1300547	spinSilk	EPI1_STATUS_ ERR	If in force failure mode, RX port interrupt has bad finish message errors status.	ASIC failure	Replace 16-port card
1300048 1300148 1300248 1300348 1300448 1300548	spinSilk	LESSN_STATUS_ ERR	If in force failure mode, less_n register has bad buffer tags error status.	ASIC failure	Replace 16-port card
1300049 1300149 1300249 1300349 1300449 1300549	spinSilk	FTPRT_STATUS_ ERR	If in force failure mode, incorrect frame tracking port status found.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 28 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
130004a 130014a 130024a 130034a 130044a 130054a	spinSilk	TST_INIT	Error detected by the software during the test initialization sequence.	ASIC failure	Replace 16-port card
1320020	crossPort Test	ERR_STAT_ENCIN	Port Error Statistics counter is non-zero, meaning an "Encoding error, inside frame" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320021	crossPort Test	ERR_STAT_CRC	Port Error Statistics counter is non-zero, meaning a "Cyclic redundancy check on frame failed" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320022	crossPort Test	ERR_STAT_TRUNC	Port Error Statistics counter is non-zero, meaning a "Truncated frame" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320023	crossPort Test	ERR_STAT_2LONG	Port Error Statistics counter is non-zero, meaning a "Frame too long" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 29 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1320024	crossPort Test	ERR_STAT_ BADEOF	Port Error Statistics counter is non-zero, meaning a “Bad end of file” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320025	crossPort Test	ERR_STAT_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320026	crossPort Test	ERR_STAT_BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320027	crossPort Test	ERR_STAT_C3DISC	Port Error Statistics counter is non-zero, meaning a “Discarded Class 3 frames” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320028	crossPort Test	ERR_STAT	One of the ASIC internal counters detected an error.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 30 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1320029	crossPort Test	XMIT	Port failed to transmit frame.	ASIC failure	Replace 16-port card
132002a	crossPort Test	PORT_M2M	Port is found to be connected to itself (self loopback). This Port M to Port M connection is not allowed by the test.	Improper cable connection	Re-connect port (M) to another port (N) and re-execute the test
132002b	crossPort Test	PORT_ABSENT	Port is not present.	ASIC or 16-port card failure	Replace 16-port card
132002c	crossPort Test	PORT_DIED	Port was in loopback mode and then went inactive.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
132002d	crossPort Test	PORT_ENABLE	ASIC driver detected an error when attempting to bring the port online.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
132002e	crossPort Test	PORT_STOPPED	Port is no longer transmitting, as indicated by the Number Of Frames Transmitted counter being stuck at N frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 31 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
132002f	crossPort Test	PORT_WRONG	Frame erroneously received by port M instead of the intended port N.	ASIC failure	Replace 16-port card
1320030	crossPort Test	ERR_STATS_ ENCIN	Port Error Statistics counter is non-zero, meaning an “Encoding error, inside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320031	crossPort Test	ERR_STATS_CRC	Port Error Statistics counter is non-zero, meaning a “Cyclic redundancy check on frame failed” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320032	crossPort Test	ERR_STATS_ TRUNC	Port Error Statistics counter is non-zero, meaning a “Truncated frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320033	crossPort Test	ERR_STATS_ 2LONG	Port Error Statistics counter is non-zero, meaning a “Frame too long” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 32 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1320034	crossPort Test	ERR_STATS_ BADEOF	Port Error Statistics counter is non-zero, meaning a “Bad end of file” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320035	crossPort Test	ERR_STATS_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320036	crossPort Test	ERR_STATS_ BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320037	crossPort Test	ERR_STATS_ C3DISC	Port Error Statistics counter is non-zero, meaning a “Discarded Class 3 frames” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320038	crossPort Test	ERR_STATS	ASIC internal error counters detected an error condition.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 33 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1320039	crossPort Test	TIMEOUT	Port failed to receive frame within time-out period	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
132003a	crossPort Test	INIT	Port failed to go active in the loopback mode requested.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
132003b	crossPort Test	DATA	Payload received by port did not match payload. transmitted	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
132003c	crossPort Test	NO_SEGMENT	Port failed to go into loopback mode.	Improper media or cable connection	Reseat media and cables then re-execute test
132003d	crossPort Test	STATS_FTX	Port counter value did not match the number of frames actually transmitted. In this case, FTX = number of frames transmitted.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 34 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
132003e	crossPort Test	STATS_FRX	Port counter value did not match the number of frames actually transmitted. In this case, FRX = number of frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
132003f	crossPort Test	STATS_C3FRX	Port counter value did not match the number of frames actually transmitted. In this case, C3FRX = number of Class 3 frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1320040	crossPort Test	STATS	An ASIC internal statistics counter incremented incorrectly.	ASIC failure	Replace 16-port card
1320041	crossPort Test	MBUF_STATE_ERR	Minibuffer state checking error.	ASIC failure	Replace 16-port card
1320042	crossPort Test	FINISH_MSG_ERR	Error detected by the ASIC frame finish message handling logic.	ASIC failure	Replace 16-port card
1320043	crossPort Test	RXQ_RAM_PERR	A parity error was detected in the receive queing RAM of the ASIC.	ASIC failure	Replace 16-port card
1320044	crossPort Test	RXQ_FRAME_ERR	A data error was detected in the receive port queing memory.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 35 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1320045	crossPort Test	FDET_PERR	ASIC internal failure detect memory found a parity error.	ASIC failure	Replace 16-port card
1320046	crossPort Test	MBUF_STATUS_ ERR	If in force failure mode, bad minisate buffer status found.	ASIC failure	Replace 16-port card
1320047	crossPort Test	EPI1_STATUS_ERR	If in force failure mode, RX port interrupt has bad finish message errors status.	ASIC failure	Replace 16-port card
1320048	crossPort Test	LESSN_STATUS_ ERR	If in force failure mode, less_n register has bad buffer tags error status.	ASIC failure	Replace 16-port card
1320049	crossPort Test	FTPRT_STATUS_ ERR	If in force failure mode, incorrect frame tracking port status found.	ASIC failure	Replace 16-port card
132004a	crossPort Test	TST_INIT	Error detected by the software during the test initialization sequence.	ASIC failure	Replace 16-port card
1340020	cmiTest	CMI_SA1	CMI Self-Test Start.	ASIC failure	Replace 16-port card
1340021	cmiTest	CMI_NOCAP	No CMI capture flag.	ASIC or 16-port card failure	Replace 16-port card
1340022	cmiTest	CMI_INVCAP	Erroneously got CMI capture flag.	ASIC or 16-port card failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 36 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1340023	cmiTest	CMI_DATA	RX Data is 0xf0c3 sb 0xf0c3 er 0x0000.	ASIC or 16-port card failure	Replace 16-port card
1340024	cmiTest	CMI_CKSUM	Bad CHKSUM test.	ASIC or 16-port card failure	Replace 16-port card
1340025	cmiTest	INT_NIL	ASIC failed to get a CMI error (interrupt).	ASIC failure	Replace 16-port card
1340026	cmiTest	BAD_INT	Port received an unexpected interrupt.	ASIC failure	Replace 16-port card
1360020	camTest	1_INIT	Port failed to initialize due to one of the following reasons: Switch not disabled Diagnostic queue absent Malloc failed Chip is not present Port is not in loopback mode Port is not active	Software operational setup error or main board failure	Retry, reboot or replace 16-port card
1360021	camTest	CAM_SID	ASIC failed SID NO translation test.	ASIC failure	Replace 16-port card
1360022	camTest	CAM_STAT	Error detected by the ASIC internal CAM statistics logic.	ASIC failure	Replace 16-port card
1360023	camTest	CAM_FLTR	Error detected by the ASIC internal CAM filtering logic.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 37 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1360024	camTest	CANT_XMIT	Port failed to transmit frame.	ASIC failure	Replace 16-port card
1360025	camTest	CANT_RCV	Timed out without receiving a message in the port RX message queue or returned a bad receive buffer status.	ASIC failure	Replace 16-port card
1380020 1380120 1380220 1380320 1380420 1380520	portLoop backTest	ERR_STAT_ENCIN	Port Error Statistics counter is non-zero, meaning an "Encoding error, inside frame" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380021 1380121 1380221 1380321 1380421 1380521	portLoop backTest	ERR_STAT_CRC	Port Error Statistics counter is non-zero, meaning a "Cyclic redundancy check on frame failed" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380022 1380122 1380222 1380322 1380422 1380522	portLoop backTest	ERR_STAT_TRUNC	Port Error Statistics counter is non-zero, meaning a "Truncated frame" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 38 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1380023 1380123 1380223 1380323 1380423 1380523	portLoop backTest	ERR_STAT_2LONG	Port Error Statistics counter is non-zero, meaning a “Frame too long” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380024 1380124 1380224 1380324 1380424 1380524	portLoop backTest	ERR_STAT_ BADEOF	Port Error Statistics counter is non-zero, meaning a “Bad end of file” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380025 1380125 1380225 1380325 1380425 1380525	portLoop backTest	ERR_STAT_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380026 1380126 1380226 1380326 1380426 1380526	portLoop backTest	ERR_STAT_BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380027 1380127 1380227 1380327 1380427 1380527	portLoop backTest	ERR_STAT_C3DISC	Port Error Statistics counter is non-zero, meaning a “Discarded Class 3 frames” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 39 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1380028 1380128 1380228 1380328 1380428 1380528	portLoop backTest	ERR_STAT	One of the ASIC internal counters detected an error.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380029 1380129 1380229 1380329 1380429 1380529	portLoop backTest	XMIT	Port failed to transmit frame.	ASIC failure	Replace 16-port card
138002a 138012a 138022a 138032a 138042a 138052a	portLoop backTest	PORT_M2M	Port is found to be connected to itself (self loopback). This Port M to Port M connection is not allowed by the test.	Improper cable connection	Re-connect port (M) to another port (N) and re-execute the test
138002b 138012b 138022b 138032b 138042b 138052b	portLoop backTest	PORT_ABSENT	Port is not present.	ASIC or 16-port card failure	Replace 16-port card
138002c 138012c 138022c 138032c 138042c 138052c	portLoop backTest	PORT_DIED	Port was in loopback mode and then went inactive.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 40 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
138002d 138012d 138022d 138032d 138042d 138052d	portLoop backTest	PORT_ENABLE	ASIC driver detected an error when attempting to bring the port online.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
138002e 138012e 138022e 138032e 138042e 138052e	portLoop backTest	PORT_STOPPED	Port is no longer transmitting, as indicated by the Number Of Frames Transmitted counter being stuck at N frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
138002f 138012f 138022f 138032f 138042f 138052f	portLoop backTest	PORT_WRONG	Frame erroneously received by port M instead of the intended port N.	ASIC failure	Replace 16-port card
1380030 1380130 1380230 1380330 1380430 1380530	portLoop backTest	ERR_STATS_ ENCIN	Port Error Statistics counter is non-zero, meaning an “Encoding error, inside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380031 1380131 1380231 1380331 1380431 1380531	portLoop backTest	ERR_STATS_CRC	Port Error Statistics counter is non-zero, meaning a “Cyclic redundancy check on frame failed” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 41 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1380032 1380132 1380232 1380332 1380432 1380532	portLoop backTest	ERR_STATS_ TRUNC	Port Error Statistics counter is non-zero, meaning a “Truncated frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380033 1380133 1380233 1380333 1380433 1380533	portLoop backTest	ERR_STATS_ 2LONG	Port Error Statistics counter is non-zero, meaning a “Frame too long” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380034 1380134 1380234 1380334 1380434 1380534	portLoop backTest	ERR_STATS_ BADEOF	Port Error Statistics counter is non-zero, meaning a “Bad end of file” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380035 1380135 1380235 1380335 1380435 1380535	portLoop backTest	ERR_STATS_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380036 1380136 1380236 1380336 1380436 1380536	portLoop backTest	ERR_STATS_ BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 42 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1380037 1380137 1380237 1380337 1380437 1380537	portLoop backTest	ERR_STATS_ C3DISC	Port Error Statistics counter is non-zero, meaning a "Discarded Class 3 frames" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380038 1380138 1380238 1380338 1380438 1380538	portLoop backTest	ERR_STATS	ASIC internal error counters detected an error condition.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380039 1380139 1380239 1380339 1380439 1380539	portLoop backTest	TIMEOUT	Port failed to receive frame within time-out period	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
138003a 138013a 138023a 138033a 138043a 138053a	portLoop backTest	INIT	Port failed to go active in the loopback mode requested.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
138003b 138013b 138023b 138033b 138043b 138053b	portLoop backTest	DATA	Payload received by port did not match payload transmitted.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 43 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
138003c 138013c 138023c 138033c 138043c 138053c	portLoop backTest	NO_SEGMENT	Port failed to go into loopback mode.	Improper media or cable connection	Reseat media and cables then re-execute test
138003d 138013d 138023d 138033d 138043d 138053d	portLoop backTest	STATS_FTX	Port counter value did not match the number of frames actually transmitted. In this case, FTX = number of frames transmitted.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
138003e 138013e 138023e 138033e 138043e 138053e	portLoop backTest	STATS_FRX	Port counter value did not match the number of frames actually transmitted. In this case, FRX = number of frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
138003f 138013f 138023f 138033f 138043f 138053f	portLoop backTest	STATS_C3FRX	Port counter value did not match the number of frames actually transmitted. In this case, C3FRX = number of Class 3 frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1380040 1380140 1380240 1380340 1380440 1380540	portLoop backTest	STATS	An ASIC internal statistics counter incremented incorrectly.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 44 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1380041 1380141 1380241 1380341 1380441 1380541	portLoop backTest	MBUF_STATE_ERR	Minibuffer state checking error.	ASIC failure	Replace 16-port card
1380042 1380142 1380242 1380342 1380442 1380542	portLoop backTest	FINISH_MSG_ERR	Error detected by the ASIC frame finish message handling logic.	ASIC failure	Replace 16-port card
1380043 1380143 1380243 1380343 1380443 1380543	portLoop backTest	RXQ_RAM_PERR	A parity error was detected in the receive queing RAM of the ASIC.	ASIC failure	Replace 16-port card
1380044 1380144 1380244 1380344 1380444 1380544	portLoop backTest	RXQ_FRAME_ERR	A data error was detected in the receive port queing memory.	ASIC failure	Replace 16-port card
1380045 1380145 1380245 1380345 1380445 1380545	portLoop backTest	FDET_PERR	ASIC internal failure detect memory found a parity error.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 45 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1380046 1380146 1380246 1380346 1380446 1380546	portLoop backTest	MBUF_STATUS_ ERR	If in force failure mode, bad minisate buffer status found.	ASIC failure	Replace 16-port card
1380047 1380147 1380247 1380347 1380447 1380547	portLoop backTest	EPI1_STATUS_ ERR	If in force failure mode, RX port interrupt has bad finish message errors status.	ASIC failure	Replace 16-port card
1380048 1380148 1380248 1380348 1380448 1380548	portLoop backTest	LESSN_STATUS_ ERR	If in force failure mode, less_n register has bad buffer tags error status.	ASIC failure	Replace 16-port card
1380049 1380149 1380249 1380349 1380449 1380549	portLoop backTest	FTPRT_STATUS_ ERR	If in force failure mode, incorrect frame tracking port status found.	ASIC failure	Replace 16-port card
138004a 138014a 138024a 138034a 138044a 138054a	portLoop backTest	TST_INIT	Error detected by the software during the test initialization sequence.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 46 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1390020 1390120 1390220 1390320 1390420 1390520	txdpath	ERR_STAT_ENCIN	Port Error Statistics counter is non-zero, meaning an "Encoding error, inside frame" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390021 1390121 1390221 1390321 1390421 1390521	txdpath	ERR_STAT_CRC	Port Error Statistics counter is non-zero, meaning a "Cyclic redundancy check on frame failed" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390022 1390122 1390222 1390322 1390422 1390522	txdpath	ERR_STAT_TRUNC	Port Error Statistics counter is non-zero, meaning a "Truncated frame" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390023 1390123 1390223 1390323 1390423 1390523	txdpath	ERR_STAT_2LONG	Port Error Statistics counter is non-zero, meaning a "Frame too long" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390024 1390124 1390224 1390324 1390424 1390524	txdpath	ERR_STAT_ BADEOF	Port Error Statistics counter is non-zero, meaning a "Bad end of file" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 47 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1390025 1390125 1390225 1390325 1390425 1390525	txdpath	ERR_STAT_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390026 1390126 1390226 1390326 1390426 1390526	txdpath	ERR_STAT_BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390027 1390127 1390227 1390327 1390427 1390527	txdpath	ERR_STAT_C3DISC	Port Error Statistics counter is non-zero, meaning a “Discarded Class 3 frames” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390028 1390128 1390228 1390328 1390428 1390528	txdpath	ERR_STAT	One of the ASIC internal counters detected an error.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390029 1390129 1390229 1390329 1390429 1390529	txdpath	XMIT	Port failed to transmit frame.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 48 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
139002a 139012a 139022a 139032a 139042a 139052a	txdpath	PORT_M2M	Port is found to be connected to itself (self loopback). This Port M to Port M connection is not allowed by the test.	Improper cable connection	Re-connect port (M) to another port (N) and re-execute the test
139002b 139012b 139022b 139032b 139042b 139052b	txdpath	PORT_ABSENT	Port is not present.	ASIC or 16-port card failure	Replace 16-port card
139002c 139012c 139022c 139032c 139042c 139052c	txdpath	PORT_DIED	Port was in loopback mode and then went inactive.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
139002d 139012d 139022d 139032d 139042d 139052d	txdpath	PORT_ENABLE	ASIC driver detected an error when attempting to bring the port online.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
139002e 139012e 139022e 139032e 139042e 139052e	txdpath	PORT_STOPPED	Port is no longer transmitting, as indicated by the Number Of Frames Transmitted counter being stuck at N frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 49 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
139002f 139012f 139022f 139032f 139042f 139052f	txdpath	PORT_WRONG	Frame erroneously received by port M instead of the intended port N.	ASIC failure	Replace 16-port card
1390030 1390130 1390230 1390330 1390430 1390530	txdpath	ERR_STATS_ ENCIN	Port Error Statistics counter is non-zero, meaning an “Encoding error, inside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390031 1390131 1390231 1390331 1390431 1390531	txdpath	ERR_STATS_CRC	Port Error Statistics counter is non-zero, meaning a “Cyclic redundancy check on frame failed” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390032 1390132 1390232 1390332 1390432 1390532	txdpath	ERR_STATS_ TRUNC	Port Error Statistics counter is non-zero, meaning a “Truncated frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390033 1390133 1390233 1390333 1390433 1390533	txdpath	ERR_STATS_ 2LONG	Port Error Statistics counter is non-zero, meaning a “Frame too long” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 50 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1390034 1390134 1390234 1390334 1390434 1390534	txdpath	ERR_STATS_ BADEOF	Port Error Statistics counter is non-zero, meaning a “Bad end of file” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390035 1390135 1390235 1390335 1390435 1390535	txdpath	ERR_STATS_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390036 1390136 1390236 1390336 1390436 1390536	txdpath	ERR_STATS_ BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390037 1390137 1390237 1390337 1390437 1390537	txdpath	ERR_STATS_ C3DISC	Port Error Statistics counter is non-zero, meaning a “Discarded Class 3 frames” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390038 1390138 1390238 1390338 1390438 1390538	txdpath	ERR_STATS	ASIC internal error counters detected an error condition.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 51 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1390039 1390139 1390239 1390339 1390439 1390539	txdpath	TIMEOUT	Port failed to receive frame within timeout period	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
139003a 139013a 139023a 139033a 139043a 139053a	txdpath	INIT	Port failed to go active in the loopback mode requested.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
139003b 139013b 139023b 139033b 139043b 139053b	txdpath	DATA	Payload received by port did not match payload. transmitted	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
139003c 139013c 139023c 139033c 139043c 139053c	txdpath	NO_SEGMENT	Port failed to go into loopback mode.	Improper media or cable connection	Reseat media and cables then re-execute test
139003d 139013d 139023d 139033d 139043d 139053d	txdpath	STATS_FTX	Port counter value did not match the number of frames actually transmitted. In this case, FTX = number of frames transmitted.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 52 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
139003e 139013e 139023e 139033e 139043e 139053e	txdpath	STATS_FRX	Port counter value did not match the number of frames actually transmitted. In this case, FRX = number of frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
139003f 139013f 139023f 139033f 139043f 139053f	txdpath	STATS_C3FRX	Port counter value did not match the number of frames actually transmitted. In this case, C3FRX = number of Class 3 frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
1390040 1390140 1390240 1390340 1390440 1390540	txdpath	STATS	An ASIC internal statistics counter incremented incorrectly.	ASIC failure	Replace 16-port card
1390041 1390141 1390241 1390341 1390441 1390541	txdpath	MBUF_STATE_ERR	Minibuffer state checking error.	ASIC failure	Replace 16-port card
1390042 1390142 1390242 1390342 1390442 1390542	txdpath	FINISH_MSG_ERR	Error detected by the ASIC frame finish message handling logic.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 53 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1390043 1390143 1390243 1390343 1390443 1390543	txdpath	RXQ_RAM_PERR	A parity error was detected in the receive queuing RAM of the ASIC.	ASIC failure	Replace 16-port card
1390044 1390144 1390244 1390344 1390444 1390544	txdpath	RXQ_FRAME_ERR	A data error was detected in the receive port queuing memory.	ASIC failure	Replace 16-port card
1390045 1390145 1390245 1390345 1390445 1390545	txdpath	FDET_PERR	ASIC internal failure detect memory found a parity error.	ASIC failure	Replace 16-port card
1390046 1390146 1390246 1390346 1390446 1390546	txdpath	MBUF_STATUS_ ERR	If in force failure mode, bad minisate buffer status found.	ASIC failure	Replace 16-port card
1390047 1390147 1390247 1390347 1390447 1390547	txdpath	EPI1_STATUS_ERR	If in force failure mode, RX port interrupt has bad finish message errors status.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 54 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
1390048 1390148 1390248 1390348 1390448 1390548	txdpath	LESSN_STATUS_ ERR	If in force failure mode, less_n register has bad buffer tags error status.	ASIC failure	Replace 16-port card
1390049 1390149 1390249 1390349 1390449 1390549	txdpath	FTPRT_STATUS_ ERR	If in force failure mode, incorrect frame tracking port status found.	ASIC failure	Replace 16-port card
139004a 139014a 139024a 139034a 139044a 139054a	txdpath	TST_INIT	Error detected by the software during the test initialization sequence.	ASIC failure	Replace 16-port card
13a0020	spinFab	ERR_STAT_ENCIN	Port Error Statistics counter is non-zero, meaning an “Encoding error, inside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0021	spinFab	ERR_STAT_CRC	Port Error Statistics counter is non-zero, meaning a “Cyclic redundancy check on frame failed” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 55 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13a0022	spinFab	ERR_STAT_TRUNC	Port Error Statistics counter is non-zero, meaning a “Truncated frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0023	spinFab	ERR_STAT_2LONG	Port Error Statistics counter is non-zero, meaning a “Frame too long” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0024	spinFab	ERR_STAT_ BADEOF	Port Error Statistics counter is non-zero, meaning a “Bad end of file” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0025	spinFab	ERR_STAT_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0026	spinFab	ERR_STAT_BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 56 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13a0027	spinFab	ERR_STAT_C3DISC	Port Error Statistics counter is non-zero, meaning a "Discarded Class 3 frames" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0028	spinFab	ERR_STAT	One of the ASIC internal counters detected an error.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0029	spinFab	XMIT	Port failed to transmit frame.	ASIC failure	Replace 16-port card
13a002a	spinFab	PORT_M2M	Port is found to be connected to itself (self loopback). This Port M to Port M connection is not allowed by the test.	Improper cable connection	Re-connect port (M) to another port (N) and re-execute the test
13a002b	spinFab	PORT_ABSENT	Port is not present.	ASIC or 16-port card failure	Replace 16-port card
13a002c	spinFab	PORT_DIED	Port was in loopback mode and then went inactive.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 57 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13a002d	spinFab	PORT_ENABLE	ASIC driver detected an error when attempting to bring the port online.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a002e	spinFab	PORT_STOPPED	Port is no longer transmitting, as indicated by the Number Of Frames Transmitted counter being stuck at N frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a002f	spinFab	PORT_WRONG	Frame erroneously received by port M instead of the intended port N.	ASIC failure	Replace 16-port card
13a0030	spinFab	ERR_STATS_ ENCIN	Port Error Statistics counter is non-zero, meaning an “Encoding error, inside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0031	spinFab	ERR_STATS_CRC	Port Error Statistics counter is non-zero, meaning a “Cyclic redundancy check on frame failed” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 58 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13a0032	spinFab	ERR_STATS_ TRUNC	Port Error Statistics counter is non-zero, meaning a “Truncated frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0033	spinFab	ERR_STATS_ 2LONG	Port Error Statistics counter is non-zero, meaning a “Frame too long” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0034	spinFab	ERR_STATS_ BADEOF	Port Error Statistics counter is non-zero, meaning a “Bad end of file” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0035	spinFab	ERR_STATS_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0036	spinFab	ERR_STATS_ BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 59 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13a0037	spinFab	ERR_STATS_ C3DISC	Port Error Statistics counter is non-zero, meaning a "Discarded Class 3 frames" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0038	spinFab	ERR_STATS	ASIC internal error counters detected an error condition.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0039	spinFab	TIMEOUT	Port failed to receive frame within time-out period	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a003a	spinFab	INIT	Port failed to go active in the loopback mode requested.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a003b	spinFab	DATA	Payload received by port did not match payload. transmitted	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 60 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13a003c	spinFab	NO_SEGMENT	Port failed to go into loopback mode.	Improper media or cable connection	Reseat media and cables then re-execute test
13a003d	spinFab	STATS_FTX	Port counter value did not match the number of frames actually transmitted. In this case, FTX = number of frames transmitted.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a003e	spinFab	STATS_FRX	Port counter value did not match the number of frames actually transmitted. In this case, FRX = number of frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a003f	spinFab	STATS_C3FRX	Port counter value did not match the number of frames actually transmitted. In this case, C3FRX = number of Class 3 frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13a0040	spinFab	STATS	An ASIC internal statistics counter incremented incorrectly.	ASIC failure	Replace 16-port card
13a0041	spinFab	MBUF_STATE_ERR	Minibuffer state checking error.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 61 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13a0042	spinFab	FINISH_MSG_ERR	Error detected by the ASIC frame finish message handling logic.	ASIC failure	Replace 16-port card
13a0043	spinFab	RXQ_RAM_PERR	A parity error was detected in the receive queuing RAM of the ASIC.	ASIC failure	Replace 16-port card
13a0044	spinFab	RXQ_FRAME_ERR	A data error was detected in the receive port queuing memory.	ASIC failure	Replace 16-port card
13a0045	spinFab	FDET_PERR	ASIC internal failure detect memory found a parity error.	ASIC failure	Replace 16-port card
13a0046	spinFab	MBUF_STATUS_ ERR	If in force failure mode, bad minisate buffer status found.	ASIC failure	Replace 16-port card
13a0047	spinFab	EPI1_STATUS_ERR	If in force failure mode, RX port interrupt has bad finish message errors status.	ASIC failure	Replace 16-port card
13a0048	spinFab	LESSN_STATUS_ ERR	If in force failure mode, less_n register has bad buffer tags error status.	ASIC failure	Replace 16-port card
13a0049	spinFab	FTPRT_STATUS_ ERR	If in force failure mode, incorrect frame tracking port status found.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 62 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13a004a	spinFab	TST_INIT	Error detected by the software during the test initialization sequence.	ASIC failure	Replace 16-port card
13b0020 13b0120 13b0220 13b0320 13b0420 13b0520	backPort	ERR_STAT_ENCIN	Port Error Statistics counter is non-zero, meaning an "Encoding error, inside frame" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0021 13b0121 13b0221 13b0321 13b0421 13b0521	backPort	ERR_STAT_CRC	Port Error Statistics counter is non-zero, meaning a "Cyclic redundancy check on frame failed" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0022 13b0122 13b0222 13b0322 13b0422 13b0522	backPort	ERR_STAT_TRUNC	Port Error Statistics counter is non-zero, meaning a "Truncated frame" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0023 13b0123 13b0223 13b0323 13b0423 13b0523	backPort	ERR_STAT_2LONG	Port Error Statistics counter is non-zero, meaning a "Frame too long" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 63 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13b0024 13b0124 13b0224 13b0324 13b0424 13b0524	backPort	ERR_STAT_ BADEOF	Port Error Statistics counter is non-zero, meaning a “Bad end of file” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0025 13b0125 13b0225 13b0325 13b0425 13b0525	backPort	ERR_STAT_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0026 13b0126 13b0226 13b0326 13b0426 13b0526	backPort	ERR_STAT_ BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0027 13b0127 13b0227 13b0327 13b0427 13b0527	backPort	ERR_STAT_C3DISC	Port Error Statistics counter is non-zero, meaning a “Discarded Class 3 frames” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0028 13b0128 13b0228 13b0328 13b0428 13b0528	backPort	ERR_STAT	One of the ASIC internal counters detected an error.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 64 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13b0029 13b0129 13b0229 13b0329 13b0429 13b0529	backPort	XMIT	Port failed to transmit frame.	ASIC failure	Replace 16-port card
13b002a 13b012a 13b022a 13b032a 13b042a 13b052a	backPort	PORT_M2M	Port is found to be connected to itself (self loopback). This Port M to Port M connection is not allowed by the test.	Improper cable connection	Re-connect port (M) to another port (N) and re-execute the test
13b002b 13b012b 13b022b 13b032b 13b042b 13b052b	backPort	PORT_ABSENT	Port is not present.	ASIC or 16-port card failure	Replace 16-port card
13b002c 13b012c 13b022c 13b032c 13b042c 13b052c	backPort	PORT_DIED	Port was in loopback mode and then went inactive.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b002d 13b012d 13b022d 13b032d 13b042d 13b052d	backPort	PORT_ENABLE	ASIC driver detected an error when attempting to bring the port online.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 65 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13b002e 13b012e 13b022e 13b032e 13b042e 13b052e	backPort	PORT_STOPPED	Port is no longer transmitting, as indicated by the Number Of Frames Transmitted counter being stuck at N frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b002f 13b012f 13b022f 13b032f 13b042f 13b052f	backPort	PORT_WRONG	Frame erroneously received by port M instead of the intended port N.	ASIC failure	Replace 16-port card
13b0030 13b0130 13b0230 13b0330 13b0430 13b0530	backPort	ERR_STATS_ ENCIN	Port Error Statistics counter is non-zero, meaning an “Encoding error, inside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0031 13b0131 13b0231 13b0331 13b0431 13b0531	backPort	ERR_STATS_CRC	Port Error Statistics counter is non-zero, meaning a “Cyclic redundancy check on frame failed” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0032 13b0132 13b0232 13b0332 13b0432 13b0532	backPort	ERR_STATS_ TRUNC	Port Error Statistics counter is non-zero, meaning a “Truncated frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 66 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13b0033 13b0133 13b0233 13b0333 13b0433 13b0533	backPort	ERR_STATS_ 2LONG	Port Error Statistics counter is non-zero, meaning a “Frame too long” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0034 13b0134 13b0234 13b0334 13b0434 13b0534	backPort	ERR_STATS_ BADEOF	Port Error Statistics counter is non-zero, meaning a “Bad end of file” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0035 13b0135 13b0235 13b0335 13b0435 13b0535	backPort	ERR_STATS_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0036 13b0136 13b0236 13b0336 13b0436 13b0536	backPort	ERR_STATS_ BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0037 13b0137 13b0237 13b0337 13b0437 13b0537	backPort	ERR_STATS_ C3DISC	Port Error Statistics counter is non-zero, meaning a “Discarded Class 3 frames” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 67 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13b0038 13b0138 13b0238 13b0338 13b0438 13b0538	backPort	ERR_STATS	ASIC internal error counters detected an error condition.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0039 13b0139 13b0239 13b0339 13b0439 13b0539	backPort	TIMEOUT	Port failed to detect an interrupt within the time-out period	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b003a 13b013a 13b023a 13b033a 13b043a 13b053a	backPort	INIT	Port failed to go active in the loopback mode requested.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b003b 13b013b 13b023b 13b033b 13b043b 13b053b	backPort	DATA	Payload received by port did not match payload. transmitted	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b003c 13b013c 13b023c 13b033c 13b043c 13b053c	backPort	NO_SEGMENT	Port failed to go into loopback mode.	Improper media or cable connection	Reseat media and cables then re-execute test

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 68 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13b003d 13b013d 13b023d 13b033d 13b043d 13b053d	backPort	STATS_FTX	Port counter value did not match the number of frames actually transmitted. In this case, FTX = number of frames transmitted.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b003e 13b013e 13b023e 13b033e 13b043e 13b053e	backPort	STATS_FRX	Port counter value did not match the number of frames actually transmitted. In this case, FRX = number of frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b003f 13b013f 13b023f 13b033f 13b043f 13b053f	backPort	STATS_C3FRX	Port counter value did not match the number of frames actually transmitted. In this case, C3FRX = number of Class 3 frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13b0040 13b0140 13b0240 13b0340 13b0440 13b0540	backPort	STATS	An ASIC internal statistics counter incremented incorrectly.	ASIC failure	Replace 16-port card
13b0041 13b0141 13b0241 13b0341 13b0441 13b0541	backPort	MBUF_STATE_ERR	Minibuffer state checking error.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 69 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13b0042 13b0142 13b0242 13b0342 13b0442 13b0542	backPort	FINISH_MSG_ERR	Error detected by the ASIC frame finish message handling logic.	ASIC failure	Replace 16-port card
13b0043 13b0143 13b0243 13b0343 13b0443 13b0543	backPort	RXQ_RAM_PERR	A parity error was detected in the receive queuing RAM of the ASIC.	ASIC failure	Replace 16-port card
13b0044 13b0144 13b0244 13b0344 13b0444 13b0544	backPort	RXQ_FRAME_ERR	A data error was detected in the receive port queuing memory.	ASIC failure	Replace 16-port card
13b0045 13b0145 13b0245 13b0345 13b0445 13b0545	backPort	FDET_PERR	ASIC internal failure detect memory found a parity error.	ASIC failure	Replace 16-port card
13b0046 13b0146 13b0246 13b0346 13b0446 13b0546	backPort	MBUF_STATUS_ ERR	If in force failure mode, bad minisate buffer status found.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 70 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13b0047 13b0147 13b0247 13b0347 13b0447 13b0547	backPort	EPI1_STATUS_ERR	If in force failure mode, RX port interrupt has bad finish message errors status.	ASIC failure	Replace 16-port card
13b0048 13b0148 13b0248 13b0348 13b0448 13b0548	backPort	LESSN_STATUS_ ERR	If in force failure mode, less_n register has bad buffer tags error status.	ASIC failure	Replace 16-port card
13b0049 13b0149 13b0249 13b0349 13b0449 13b0549	backPort	FTPRT_STATUS_ ERR	If in force failure mode, incorrect frame tracking port status found.	ASIC failure	Replace 16-port card
13b004a 13b014a 13b024a 13b034a 13b044a 13b054a	backPort	TST_INIT	Error detected by the software during the test initialization sequence.	ASIC failure	Replace 16-port card
13c0020	statsTest	STS_INIT	Either space for frames could not be allocated or the port failed to initialize.	ASIC failure	Replace 16-port card
13c0021	statsTest	STS_NULL	Error sending data or bad port number called for.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 71 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13c0022	statsTest	STS_SID	Incorrect SID found in frame.	ASIC failure	Replace 16-port card
13c0023	statsTest	STS_XMIT	Error detected when attempting to send a frame.	ASIC failure	Replace 16-port card
13c0024	statsTest	STS_RCV	Expecting receive data but timed out without receiving a message.	ASIC failure	Replace 16-port card
13c0025	statsTest	STS_FRMCNT	Verify the correct number of frames were received.	ASIC failure	Replace 16-port card
13c0026	statsTest	STS_WRDCNT	Verify the correct number of words were sent.	ASIC failure	Replace 16-port card
13c0027	statsTest	STS_ALPACNT	Incorrect ALPA count found.	ASIC failure	Replace 16-port card
13d0020	filterTest	FLT_INIT	Error detected when attempting top initialize a port.	ASIC failure	Replace 16-port card
13d0021	filterTest	FLT_XMIT	Error detected when attempting to send a frame.	ASIC failure	Replace 16-port card
13d0022	filterTest	FLT_RCV	Error detected in the port receive logic.	ASIC failure	Replace 16-port card
13d0023	filterTest	FLT_ACT	Wrong filter action code detected.	ASIC failure	Replace 16-port card
13d0024	filterTest	FLT_NUM	Wrong filter number changed state during test.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 72 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13e0020	backplane test	ERR_STAT_ENCIN	Port Error Statistics counter is non-zero, meaning an "Encoding error, inside frame" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0021	backplane test	ERR_STAT_CRC	Port Error Statistics counter is non-zero, meaning a "Cyclic redundancy check on frame failed" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0022	backplane test	ERR_STAT_TRUNC	Port Error Statistics counter is non-zero, meaning a "Truncated frame" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0023	backplane test	ERR_STAT_2LONG	Port Error Statistics counter is non-zero, meaning a "Frame too long" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0024	backPlane Test	ERR_STAT_ BADEOF	Port Error Statistics counter is non-zero, meaning a "Bad end of file" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 73 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13e0025	backPlane Test	ERR_STAT_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0026	backPlane Test	ERR_STAT_BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0027	backPlane Test	ERR_STAT_C3DISC	Port Error Statistics counter is non-zero, meaning a “Discarded Class 3 frames” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0028	backPlane Test	ERR_STAT	One of the ASIC internal counters detected an error.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0029	backPlane Test	XMIT	Port failed to transmit frame.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 74 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13e002a	backPlane Test	PORT_M2M	Port is found to be connected to itself (self loopback). This Port M to Port M connection is not allowed by the test.	Improper cable connection	Recon-nect port (M) to another port (N) and re-execute the test
13e002b	backPlane Test	PORT_ABSENT	Port is not present.	ASIC or 16-port card failure	Replace 16-port card
13e002c	backPlane Test	PORT_DIED	Port was in loopback mode and then went inactive.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e002d	backPlane Test	PORT_ENABLE	ASIC driver detected an error when attempting to bring the port online.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e002e	backPlane Test	PORT_STOPPED	Port is no longer transmitting, as indicated by the Number Of Frames Transmitted counter being stuck at N frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e002f	backPlane Test	PORT_WRONG	Frame erroneously received by port M instead of the intended port N.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 75 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13e0030	backPlane Test	ERR_STATS_ ENCIN	Port Error Statistics counter is non-zero, meaning an "Encoding error, inside frame" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0031	backPlane Test	ERR_STATS_CRC	Port Error Statistics counter is non-zero, meaning a "Cyclic redundancy check on frame failed" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0032	backPlane Test	ERR_STATS_ TRUNC	Port Error Statistics counter is non-zero, meaning a "Truncated frame" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0033	backPlane Test	ERR_STATS_ 2LONG	Port Error Statistics counter is non-zero, meaning a "Frame too long" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0034	backPlane Test	ERR_STATS_ BADEOF	Port Error Statistics counter is non-zero, meaning a "Bad end of file" error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 76 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13e0035	backPlane Test	ERR_STATS_ ENCOUT	Port Error Statistics counter is non-zero, meaning an ”Encoding error, outside frame” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0036	backPlane Test	ERR_STATS_ BADOS	Port Error Statistics counter is non-zero, meaning a “Bad symbol on fiber-optic cable” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0037	backPlane Test	ERR_STATS_ C3DISC	Port Error Statistics counter is non-zero, meaning a “Discarded Class 3 frames” error was detected when receiving frames.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0038	backPlane Test	ERR_STATS	ASIC internal error counters detected an error condition.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0039	backPlane Test	TIMEOUT	Port failed to detect an interrupt within the time-out period	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.					

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 77 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13e003a	backPlane Test	INIT	Port failed to go active in the loopback mode requested.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e003b	backPlane Test	DATA	Payload received by port did not match payload. transmitted	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e003c	backPlane Test	NO_SEGMENT	Port failed to go into loopback mode.	Improper media or cable connection	Reseat media and cables then re-execute test
13e003d	backPlane Test	STATS_FTX	Port counter value did not match the number of frames actually transmitted. In this case, FTX = number of frames transmitted.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e003e	backPlane Test	STATS_FRX	Port counter value did not match the number of frames actually transmitted. In this case, FRX = number of frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 78 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13e003f	backPlane Test	STATS_C3FRX	Port counter value did not match the number of frames actually transmitted. In this case, C3FRX = number of Class 3 frames received.	Fiber cable, media, or 16-port card/ASIC failure	Replace fiber cable, media, 16-port card
13e0040	backPlane Test	STATS	An ASIC internal statistics counter incremented incorrectly.	ASIC failure	Replace 16-port card
13e0041	backPlane Test	MBUF_STATE_ERR	Minibuffer state checking error.	ASIC failure	Replace 16-port card
13e0042	backPlane Test	FINISH_MSG_ERR	Error detected by the ASIC frame finish message handling logic.	ASIC failure	Replace 16-port card
13e0043	backPlane Test	RXQ_RAM_PERR	A parity error was detected in the receive queing RAM of the ASIC.	ASIC failure	Replace 16-port card
13e0044	backPlane Test	RXQ_FRAME_ERR	A data error was detected in the receive port queing memory.	ASIC failure	Replace 16-port card
13e0045	backPlane Test	FDET_PERR	ASIC internal failure detect memory found a parity error.	ASIC failure	Replace 16-port card
13e0046	backPlane Test	MBUF_STATUS_ ERR	If in force failure mode, bad minisate buffer status found.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Table 8–1: V4.0.x Diagnostic Error Messages Listed by Error Number (Sheet 79 of 79)

Number	Test Name	Message Text	Description	Probable Cause	Action
13e0047	backPlane Test	EPI1_STATUS_ERR	If in force failure mode, RX port interrupt has bad finish message errors status.	ASIC failure	Replace 16-port card
13e0048	backPlane Test	LESSN_STATUS_ ERR	If in force failure mode, less_n register has bad buffer tags error status.	ASIC failure	Replace 16-port card
13e0049	backPlane Test	FTPRT_STATUS_ ERR	If in force failure mode, incorrect frame tracking port status found.	ASIC failure	Replace 16-port card
13e004a	backPlane Test	TST_INIT	Error detected by the software during the test initialization sequence.	ASIC failure	Replace 16-port card

* These tests are run during the power-on-self-test (POST). For more information about these tests, refer to the individual command descriptions in the *HP StorageWorks Fabric OS Version 3.0.x/4.0.x Reference Guide*.

Glossary

This glossary defines terms used in this guide or related to this product and is not a comprehensive glossary of computer terms.

16-port card
The Fibre Channel port card provided with the StorageWorks Core switch. Contains 16 Fibre Channel ports and the corresponding LEDs indicating port status and speed.

See also port card.

8b/10b Encoding
An encoding scheme that converts each 8-bit byte into 10 bits. Used to balance ones and zeros in high-speed transports.

Access Control List
Enables an organization to bind a specific WWN to a specific switch port or set of ports, preventing a port in another physical location from assuming the identity of a real WWN. May also refer to a list of the Read/Write access of a particular community string.

See also device connection controls.

Account Level Switches
Refers to switches that have four login accounts into the operating system (in descending order): root, factory, admin, and user.

See also root account, factory account, admin account, and user account.

Address Identifier
A 24-bit or 8-bit value used to identify the source or destination of a frame.

Admin Account
A login account intended for use by the customer to control switch operation.

See also account level switches.

AL_PA
Arbitrated Loop Physical Address. A unique 8-bit value assigned during loop initialization to a port in an arbitrated loop.

Alias
An alternate name for an element or group of elements in the fabric. Aliases can be used to simplify the entry of port numbers and WWNs when creating zones.

Alias Address Identifier
An address identifier recognized by a port in addition to its standard identifier. An alias address identifier may be shared by multiple ports.

See also alias.

Alias AL_PA
An AL_PA value recognized by an L_Port in addition to the AL_PA assigned to the port.

See also AL_PA.

Alias Server
A fabric software facility that supports multicast group management.

ANSI
American National Standards Institute. The governing body for Fibre Channel standards in the U.S.A.

API
Application Programming Interface. Defined protocol that allows applications to interface with a set of services.

Arbitrated Loop
A shared 100 or 200 MBps Fibre Channel transport structured as a loop. Can support up to 126 devices and one fabric attachment.

See also topology.

Arbitrating State
The state in which a port has become the loop master. This state is only available from the Open state.

Area Number
A number assigned to each potential port location in the StorageWorks Core switch. Used to distinguish StorageWorks Core switch ports that have the same port number but are on different port Blades.

ASIC
Application Specific Integrated Circuit.

ATM
Asynchronous Transfer Mode. A transport used for transmitting data over LANs or WANs that transmit fixed-length units of data. Provides any-to-any connectivity, and allows nodes to transmit simultaneously.

Auto-negotiate Speed
Process that allows two devices at either end of a link segment to negotiate common features, speed (e.g., 1 or 2 Gbps) and functions.

Autosense
Process during which a network device automatically senses the speed of another device.

AW_TOV
Arbitration Wait Time-out Value. The minimum time an arbitrating L_Port waits for a response before beginning loop initialization.

Backup FCS Switch
Backup fabric configuration server switch. The switch or switches assigned as backup in case the primary FCS switch fails.

See also FCS switch, primary FCS switch.

Bandwidth
The total transmission capacity of a cable, link, or system. Usually measured in bps (bits per second). May also refer to the range of transmission frequencies available to a network.

See also throughput.

BB_Credit
Buffer-to-buffer credit. The number of frames that can be transmitted to a directly connected recipient or within an arbitrated loop. Determined by the number of receive buffers available.

See also Buffer-to-buffer Flow Control, EE_Credit.

Beacon
When all the port LEDs on a switch are set to flash from one side of the switch to the other, to enable identification of an individual switch in a large fabric. A switch can be set to beacon by telnet command or through Web Tools.

Beaconing
The state of the switches LEDs when the switch is set to Beacon.

See also Beacon.

Beginning Running Disparity
The disparity at the transmitter or receiver when the special character associated with an ordered set is encoded or decoded.

See also disparity.

BER
Bit Error Rate. The rate at which bits are expected to be received in error. Expressed as the ratio of error bits to total bits transmitted.

See also error.

Bit Synchronization
See BER.

Blade
See 16-port card.

Blind-mate Connector
A two-way connector used in some switches to provide a connection between the motherboard and the power supply.

Block
As applies to Fibre Channel, upper-level application data that is transferred in a single sequence.

Blower Assembly
A fan that prevents a switch (or individual elements within a switch) from overheating.

Boot Flash
Flash memory that stores the boot code and boot parameters. The processor executes its first instructions from boot flash. Data is cached in RAM.

Boot Monitor
Code used to initialize the CP (control processor) environment after powering on. Identifies the amount of memory available and how to access it, and retrieves information about system buses.

Broadcast
The transmission of data from a single source to all devices in the fabric, regardless of zoning.

See also multicast, unicast.

Buffer-to-buffer Flow Control
Management of the frame transmission rate in either a point-to-point topology or in an arbitrated loop.

See also BB_Credit.

Cascade
Two or more interconnected Fibre Channel switches. StorageWorks 1 Gb SAN switches (running Fabric OS V2) and later can be cascaded up to 239 switches, with a recommended maximum of seven interswitch links (no path longer than eight switches).

See also fabric, ISL.

Chassis
The metal frame in which the switch and switch components are mounted.

Circuit
An established communication path between two ports. Consists of two virtual circuits capable of transmitting in opposite directions.

See also link.

Class 1
Service that provides a dedicated connection between two ports (also called connection-oriented service), with notification of delivery or nondelivery.

Class 2
Service that provides multiplex and connectionless frame switching service between two ports, with notification of delivery or nondelivery.

Class 3
Service that provides a connectionless frame switching service between two ports, without notification of delivery or nondelivery of data. This service can also be used to provide a multicast connection between the originator and recipients, with notification of delivery or nondelivery.

Class F
Connectionless service for control traffic between switches, with notification of delivery or nondelivery of data between the E_Ports.

Class of Service
A specified set of delivery characteristics and attributes for frame delivery.

CLI
Command line interface. Interface that depends entirely on the use of commands, such as through telnet or SNMP, and does not involve a Graphic User Interface (GUI).

CLS
Close Primitive Signal. Only in an Arbitrated Loop; sent by an L_Port that is currently communicating on the loop, to close communication to an other L_Port.

Comma
A unique pattern (either 1100000 or 0011111) used in 8b/10b encoding to specify character alignment within a data stream.

See also K28.5.

Community (SNMP)
A relationship between a group of SNMP managers and an SNMP agent, in which authentication, access control, and proxy characteristics are defined.

See also SNMP.

Compact Flash
Flash memory that stores the run-time operating system and is used like hard disk storage. Not visible within the processor's memory space. Data is stored in file system format.

Configuration
How a system is set up. May refer to hardware or software.

- Hardware: The number, type, and arrangement of components that make up a system or network.
- Software: The set of parameters that guide switch operation. May include general system parameters, IP address information, domain ID, and other information. Modifiable by any login with administrative privileges.

May also refer to a set of zones.

See also zone configuration.

Connection Initiator
A port that has originated a Class 1 dedicated connection and received a response from the recipient.

Connection Recipient
A port that has received a Class 1 dedicated connection request and transmitted a response to the originator.

Control Panel
Refers to the left-side panel of Web Tools, which accesses fabric-wide functions such as Zoning and Events.

Core Switch
A switch whose main task is to interconnect other switches.

See also SAN switch.

CP Card
Control Processor Card. The central processing unit of the StorageWorks Core switch, which contains two CP Card slots to provide redundancy. Provides Ethernet, serial, and modem ports with the corresponding LEDs.

CRC
Cyclic Redundancy Check. A check for transmission errors included in every data frame.

Credit
As applies to Fibre Channel, the number of receive buffers available for transmission of frames between ports.

See also BB_Credit, EE_Credit.

CT_HDR
Common Transport Header. A header that conforms to the Fibre Channel Common Transport (FC_CT) protocol.

CT_IU
Common Transport Information Unit. An information unit that conforms to the Fibre Channel Common Transport (FC_CT) protocol.

Current Fill Word
The fill word currently selected by the LPSM.

See also fill word, LPSM.

Cut-through
A switching technique that allows the route for a frame to be selected as soon as the destination address is received.

See also route.

Data Word
Type of transmission word that occurs within frames. The frame header, data field, and CRC all consist of data words.

See also frame, ordered set, transmission word.

DB-9 connector
A 9-pin version of the RS-232C port interface. May be either the male of female interface.

See also RS-232 port.

dBm
Logarithmic unit of power used in electronics. Indicates signal strength in decibels above the reference level, which is 1 milliwatt for dBm. An increase of 10 dBm or represents a 10-fold increase in power.

DCE port
A data communications equipment port capable of interfacing between a DTE (data terminal equipment) port and a transmission circuit. DTE devices with an RS-232 (or EIA-232) port interface transmit on pin 3, and receive on pin 2.

See also DTE port, RS-232 port.

Defined Zone Configuration
The set of all zone objects defined in the fabric. May include multiple zone configurations.

See also enabled zone configuration, zone configuration.

Device Connection Controls
Enables organizations to bind an individual device port to a set of one or more switch ports. Device ports are specified by a WWN and typically represent HBAs (servers).

See also access control lists.

Device
A disk, a RAID, or an HBA.

Disparity
The relationship of ones and zeros in an encoded character. "Neutral disparity" means an equal number of each, "positive disparity" means a majority of ones, and "negative disparity" means a majority of zeros.

DLS
Dynamic Load Sharing. Dynamic distribution of traffic over available paths. Allows for recomputing of routes when an Fx_Port or E_Port changes status.

Domain ID
As applies to HP StorageWorks switches, a unique number between 1 and 239 that identifies the switch to the fabric and is used in routing frames. Usually automatically assigned by the switch, but can be manually assigned.

DTE port
A data terminal equipment port capable of interfacing to a transmission circuit through a connection to a DCE (data communications equipment) port. DTE devices with an RS-232 (or EIA-232) port interface transmit on pin 3, and receive on pin 2 in a 9-pin connector (reversed in 25-pin connectors).

See also DCE port, RS-232 port.

DWDM
Dense Wavelength Multiplexing. A means to concurrently transmit more than one stream of data through a single fiber by modulating each stream of data onto a different wavelength of light.

E_D_TOV
Error Detect Time-out Value. The minimum amount of time a target waits for a sequence to complete before initiating recovery. Can also be defined as the maximum time allowed for a round-trip transmission before an error condition is declared.

See also R_A_TOV, RR_TOV.

E_Port
Expansion Port. A type of switch port that can be connected to an E_Port on another switch to create an ISL.

See also ISL.

EE_Credit
End-to-end Credit. The number of receive buffers allocated by a recipient port to an originating port. Used by Class 1 and 2 services to manage the exchange of frames across the fabric between source and destination.

See also End-to-end Flow Control, BB_Credit.

EIA Rack
A storage rack that meets the standards set by the Electronics Industry Association.

ELWL
Extra Long Wave Length. Laser light with a periodic length greater than 1300 nm (e.g., 1420 or 1550). ELWL lasers are used to transmit Fibre Channel data over distances greater than 10 Km.

Also known as XLWL.

Enabled Zone Configuration
The currently enabled zone configuration. Only one configuration can be enabled at a time.

See also defined zone configuration, zone configuration.

End-to-end Flow Control
Governs flow of class 1 and 2 frames between N_Ports.

See also EE_Credit.

Entry Fabric
Basic HP license that allows one E_Port per switch. Not supported by StorageWorks Core switches.

Error
As applies to Fibre Channel, a missing or corrupted frame, time-out, loss of synchronization, or loss of signal (link errors).

See also loop failure.

ESD
Electrostatic Discharge.

Exchange
The highest level Fibre Channel mechanism used for communication between N_Ports. Composed of one or more related sequences, and can work in either one or both directions.

Extended Fabric
An HP product that runs on Fabric OS and allows creation of a Fibre Channel fabric interconnected over distances of up to 100 kilometers.

Extended Fabric is a means of allowing the implementation and management of SANs over extended distances. This is achieved by adjusting the Buffer-to-Buffer Credits to guaranteed allocation of buffers to specific ports.

F_Port
Fabric Port. A port that is able to transmit under fabric protocol and interface over links. Can be used to connect an N_Port to a switch.

See also FL_Port, Fx_Port.

Fabric
A Fibre Channel network containing two or more interconnected switches in addition to hosts and devices. May also be referred to as a switched fabric.

See also topology, SAN, cascade.

Fabric Access
An HP product that consists of a set of APIs that allow third party applications to interface with Fabric OS.

Fabric Access allows the application to control the fabric directly for functions such as discovery, access (zoning), management, performance, and switch control. Consists of a host-based library that interfaces the application to switches in the fabric over an out-of-band TCP/IP connection or in-band using an IP-capable Host Bus Adapter (HBA).

Fabric Assist
An HP feature that enables private and public hosts to access public targets anywhere on the fabric, provided they are in the same Fabric Assist zone. This feature is available only when both QuickLoop and Zoning are installed on the switch.

Fabric Assist is a means of allowing private hosts to communicate with public targets across a switched fabric. Fabric Assist also allows private hosts to communicate with private targets that are not resident on the same switch across a switched fabric.

See also QuickLoop.

Fabric Configuration Server
One or more designated HP switches that store and manage the configuration parameters for all other switches in the fabric. These switches are designated by WWN, and the list of designated switches is known fabric-wide.

Fabric Manager
An HP product that works in conjunction with Web Tools to provide a graphical user interface for managing switch groups (such as the SAN Switch Integrated/32) as a single unit, instead of as separate switches. Fabric Manager is installed on and run from a computer workstation.

Fabric Name
The unique identifier assigned to a fabric and communicated during login and port discovery.

Fabric OS
The proprietary operating system on HP StorageWorks switches.

Fabric Watch
An HP product that runs on Fabric OS and allows monitoring and configuration of fabric and switch elements.

Allows the SAN manager to monitor key fabric and switch elements, making it easy to quickly identify and escalate potential problems. It monitors each element for out-of-boundary values or counters and provides notification when defined boundaries are exceeded. The SAN manager can configure which elements, such as error, status, and performance counters, are monitored within an HP switch.

See also Fabric Manager.

Factory Account
A login used during manufacturing to initialize and test a switch and is not intended for customer use.

See also account level switches.

Failover
The act that causes control to pass from one redundant unit to another. In the StorageWorks Core switch one may failover from the currently Active Control Processor (CP) to the Standby CP.

FAN
Fabric access notification. Retains the AL_PA and fabric address when loop re-initializes (if the switch supports FAN).

FC-AL-3
The Fibre Channel Arbitrated Loop standard defined by ANSI. Defined on top of the FC-PH standards.

FC-FLA
The Fibre Channel Fabric Loop Attach standard defined by ANSI.

FCIA
Fibre Channel Industry Association. An international organization of Fibre Channel industry professionals. Among other things, provides oversight of ANSI and industry developed standards.

FCP
Fibre Channel Protocol. Mapping of protocols onto the Fibre Channel standard protocols. For example, SCSI FCP maps SCSI-3 onto Fibre Channel.

FC-PH-1, 2, 3
The Fibre Channel Physical and Signaling Interface standards defined by ANSI.

FC-PI
The Fibre Channel Physical Interface standard defined by ANSI.

FC-PLDA
The Fibre Channel Private Loop Direct Attach standard defined by ANSI. Applies to the operation of peripheral devices on a private loop.

FCS switch
Fabric configuration server switch. One or more designated HP switches that store and manage the configuration parameters for all switches in the fabric. FCS switches are designated by WWN, and the list of designated switches is communicated fabric-wide.

See also backup FCS switch, primary FCS switch.

FC-SW-2
The second generation of the Fibre Channel Switch Fabric standard defined by ANSI. Specifies tools and algorithms for the interconnection and initialization of Fibre Channel switches in order to create a multi-switch Fibre Channel fabric.

Fibre Channel Transport
A protocol service that supports communication between Fibre Channel service providers.

See also FSP.

FIFO
First In, First Out. May also refer to a data buffer that follows the first in, first out rule.

Fill Word
An IDLE or ARB ordered set that is transmitted during breaks between data frames to keep the Fibre Channel link active.

Firmware Download
Loading firmware down from a server into a switch.

Firmware
The basic operating system provided with the hardware.

FL_Port
Fabric Loop Port. A port that is able to transmit under fabric protocol and also has arbitrated loop capabilities. Can be used to connect an NL_Port to a switch.

See also F_Port, Fx_Port.

Flash Partition
Two redundant usable areas, called “partitions,” into which firmware can be downloaded in the StorageWorks Core switch.

Flash
Programmable NVRAM memory that maintains its contents.

FLOGI
Fabric Login. The process by which an N_Port determines whether a fabric is present, and if so, exchanges service parameters with it.

See also PLOGI.

Frame
The Fibre Channel structure used to transmit data between ports. Consists of a start-of-frame delimiter, header, any optional headers, the data payload, a cyclic redundancy check (CRC), and an end-of-frame delimiter. There are two types of frames: Link control frames (transmission acknowledgements, etc.) and data frames.

See also Data Word.

FRU
Field Replaceable Unit. A component that can be replaced on site.

FS_ACC
Fibre Channel Services Accept. The information unit used to indicate acceptance of a request for a Fibre Channel service.

FS_IU
Fibre Channel Services Information Unit. An information unit that has been defined by a Fibre Channel service.

FS_REQ
Fibre Channel Services Request. A request for a Fibre Channel services function, or notification of a fabric condition or event.

FS_RJT
Fibre Channel Services Reject. An indication that a request for Fibre Channel services could not be processed.

FS
Fibre Channel Service. A service that is defined by Fibre Channel standards and exists at a well-known address. For example, the Simple Name Server is a Fibre Channel service.

See also FSP.

FSPF
Fabric Shortest Path First. HP routing protocol for Fibre Channel switches.

FSP
Fibre Channel Service Protocol. The common protocol for all fabric services, transparent to the fabric type or topology.

See also FS.

Full Fabric
The HP license that allows multiple E_Ports on a switch, making it possible to create multiple ISL links.

Full-duplex
A mode of communication that allows the same port to simultaneously transmit and receive frames.

See also half-duplex.

Fx_Port
A fabric port that can operate as either an F_Port or FL_Port.

See also F_Port, FL_Port.

G_Port
Generic Port. A port that can operate as either an E_Port or F_Port. A port is defined as a G_Port when it is not yet connected or has not yet assumed a specific function in the fabric.

Gateway
Hardware that connects incompatible networks by providing translation for both hardware and software. For example, an ATM gateway can be used to connect a Fibre Channel link to an ATM connection.

GBIC
Gigabit interface converter. A removable serial transceiver module that allows gigabaud physical-level transport for Fibre Channel and gigabit Ethernet. Typically refers only to the SC-form factor transceivers.

See also SFP.

Gbps
Gigabits per second (1,062,500,000 bits/second).

GBps
Gigabytes per second (1,062,500,000 bytes/second).

Half-duplex
A mode of communication that allows a port to either transmit or receive frames at any time, but not simultaneously (with the exception of link control frames, which can be transmitted at any time).

See also full-duplex.

Hard Address
The AL_PA that an NL_Port attempts to acquire during loop initialization.

Hardware Translative Mode
A method for achieving address translation. The following two hardware translative modes are available to a QuickLoop-enabled switch:

- Standard Translative Mode: Allows public devices to communicate with private devices that are directly connected to the fabric.
- QuickLoop Mode: Allows initiator devices to communicate with private or public devices that are not in the same loop.

HBA
Host Bus Adapter. The interface card between a server or workstation bus and the Fibre Channel network.

High Availability
An attribute of equipment that identifies it as being capable of conducting customer operations well in excess of 99% of the time. Typically High Availability is identified by the number of nines in that percentage. “Five Nines” means the equipment is rated as being capable of conducting customer operations 99.999% of the time without failure.

Host
A computer that accesses storage devices over the fabric. May also be referred to as a server.

See also workstation.

Hot Pluggable
A FRU capability that indicates it may be extracted or installed while customer data is otherwise flowing in the chassis.

Hub
A Fibre Channel wiring concentrator that collapses a loop topology into a physical star topology. Nodes are automatically added to the loop when active and removed when inactive.

IBTA
The InfiniBand Trade Association (IBTA). The IBTA is an industry consortium of more than 200 companies working together to develop a new common I/O specification designed to bring greater scalability and performance to server I/O. InfiniBand defines a new channel based, switched-fabric technology for server-to-server and server-to-I/O interconnection that is expected to improve scalability and performance over existing PCI Bus technologies.

Idle
Continuous transmission of an ordered set over a Fibre Channel link when no data is being transmitted, to keep the link active and maintain bit, byte, and word synchronization.

Infiniband
See IBTA.

Initiator
A server or workstation on a Fibre Channel network that initiates communications with storage devices.

See also Target.

Integrated Fabric
The fabric created by a SAN Switch Integrated/32 and SAN Switch Integrated/64, consisting of six SAN Switch 16-EL switches cabled together and configured to handle traffic as a seamless group.

IOD
In-order Delivery. A parameter that, when set, guarantees that frames are either delivered in order or dropped.

IPA
Initial Process Associator. An identifier associated with a process at an N_Port.

Isolated E_Port
An E_Port that is online but not operational due to overlapping domain IDs or nonidentical parameters (such as E_D_TOVs).

See also E_Port.

ISL
Interswitch Link. a Fibre Channel link from the E_Port of one switch to the E_Port of another.

See also E_Port, cascade, ISL trunking.

ISL Trunking
An HP feature that enables distribution of traffic over the combined bandwidth of up to four ISLs (between adjacent switches), while preserving in-order delivery. A set of trunked ISLs is called a trunking group; each port employed in a trunking group is called a trunking port.

See also Master Port.

IU
Information Unit. A set of information as defined by either upper-level process protocol definition or upper-level protocol mapping.

JBOD
Just a Bunch Of Disks. Indicates a number of disks connected in a single chassis to one or more controllers.

See also RAID.

K28.5
A special 10-bit character used to indicate the beginning of a transmission word that performs Fibre Channel control and signaling functions. The first seven bits of the character are the comma pattern.

See also comma.

Kernel Flash
lash memory that stores the bootable kernel code and is visible within the processor's memory space. Data is stored as raw bits.

Key Pair
In public key cryptography, a pair of keys consisting of an entity's public and private key. The public key can be publicized, but the private key must be kept secret.

L_Port
Loop Port. A node port (NL_Port) or fabric port (FL_Port) that has arbitrated loop capabilities. An L_Port can be in one of two modes:

- *Fabric mode.* Connected to a port that is not loop capable, and using fabric protocol.
- *Loop mode.* In an arbitrated loop and using loop protocol. An L_Port in loop mode can also be in participating mode or non-participating mode.

See also Non-participating Mode, Participating Mode.

Latency
The period of time required to transmit a frame, from the time it is sent until it arrives. Together, latency and bandwidth define the speed and capacity of a link or system.

LED
Light Emitting Diode. Used on HP switches to indicate the status of various switch elements.

Link Services
A protocol for link-related actions.

Link
As applies to Fibre Channel, a physical connection between two ports, consisting of both transmit and receive fibers.

See also Circuit.

LIP
Loop Initialization Primitive. The signal used to begin initialization in a loop. Indicates either loop failure or resetting of a node.

LIS_HOLD_TIME
Loop Initialization Sequence Hold Time. The maximum period of time for a node to forward a loop initialization sequence**.**

LM_TOV
Loop Master Time-out Value. The minimum time that the loop master waits for a loop initialization sequence to return.

Login BB_Credit
The number of receive buffers a receiving L_Port has available when a circuit is first established.

See also BB_Credit.

Loop Circuit
A temporary bidirectional communication path established between L_Ports.

Loop Failure
Loss of signal within a loop for any period of time, or loss of synchronization for longer than the time-out value.

See also error.

Loop Initialization
The logical procedure used by an L_Port to discover its environment. Can be used to assign AL_PA addresses, detect loop failure, or reset a node.

Loop_ID
A hex value representing one of the 127 possible AL_PA values in an arbitrated loop.

Looplet
A set of devices connected in a loop to a port that is a member of another loop.

LPSM
Loop Port State Machine. The logical entity that performs arbitrated loop protocols and defines the behavior of L_Ports when they require access to an arbitrated loop.

LWL
Long Wavelength. A type of fiber optic cabling that is based on 1300-mm lasers and supports link speeds of 1.0625 Gbps. May also refer to the type of GBIC or SFP.

See also SWL.

Master Port
As relates to trunking, the port that determines the routing paths for all traffic flowing through the trunking group. One of the ports in the first ISL in the trunking group is designated as the master port for that group.

See also ISL Trunking.

Media
See transceiver.

MIB
Management Information Base. An SNMP structure to help with device management, providing configuration and device information.

Modem Serial Port
The upper serial port on the CP Card of the StorageWorks Core switch. Can be used to connect the CP Card to a modem with a standard 9-pin modem cable. Consists of a DB-9 connector wired as a RS-232 device, and can be connected by serial cable to a DCE device. A Hayes-compatible modem or Hayes-emulation is required. The device name is ttyS1.

See also DB-9 connector, DCE port, terminal serial port.

Monitoring State
The state in which a port is monitoring the flow of information for data relevant to the port.

Multicast
The transmission of data from a single source to multiple specified N_Ports (as opposed to all the ports on the network).

See also broadcast, unicast.

Multimode
A fiber optic cabling specification that allows up to 500 meters between devices for 1 Gb, or 300 meters between devices for 2 Gb.

N_Port
Node Port. A port on a node that can connect to a Fibre Channel port or to another N_Port in a point-to-point connection.

See also NL_Port, Nx_Port.

NAA
Network Address Authority. An identifier that indicates the format of a network address.

Name Server
Frequently used to indicate Simple Name Server.

See also SNS.

Native Address Identifier
A unique, 64-bit address is assigned to each port, and is referred to as its World-Wide Name (WWN). If a port connects to an arbitrated loop, it will also be assigned a dynamic 8-bit address, referred to as its arbitrated loop physical address, or AL_PA. If it connects to a fabric, it will be assigned a dynamic 24-bit address, referred to as its Native Address Identifier.

Negotiate
See auto-negotiate speed and autosense.

NL_Port
Node Loop Port. A node port that has arbitrated loop capabilities. Used to connect an equipment port to the fabric in a loop configuration through an FL_Port.

See also N_Port, Nx_Port.

Node Name
The unique identifier for a node, communicated during login and port discovery.

Node
A Fibre Channel device that contains an N_Port or NL_Port.

Non-participating Mode
A mode in which an L_Port in a loop is inactive and cannot arbitrate or send frames, but can retransmit any received transmissions. This mode is entered if there are more than 127 devices in a loop and an AL_PA cannot be acquired.

See also L_Port, Participating Mode.

Nx_Port
A node port that can operate as either an N_Port or NL_Port.

Open Originator
The L_Port that wins arbitration in an arbitrated loop and sends an OPN ordered set to the destination port, then enters the Open state.

Open Recipient
The L_Port that receives the OPN ordered set from the open originator, and then enters the Open state.

Open State
The state in which a port can establish a circuit with another port. A port must be in the Open state before it can arbitrate.

OPN
Open Primitive Signal.

Ordered Set
A transmission word that uses 8B/10B mapping and begins with the K28.5 character. Ordered sets occur outside of frames, and include the following items:

- *Frame delimiters.* Mark frame boundaries and describe frame contents.
- *Primitive signals*. Indicate events.
- *Primitive sequences.* Indicate or initiate port states.

Ordered sets are used to differentiate Fibre Channel control information from data frames and to manage the transport of frames.

Packet
A set of information transmitted across a network.

See also Frame.

Participating Mode
A mode in which an L_Port in a loop has a valid AL_PA and can arbitrate, send frames, and retransmit received transmissions.

See also L_Port, Non-participating Mode.

Path Selection
The selection of a transmission path through the fabric. HP StorageWorks switches use the FSPF protocol.

Performance Monitor
Comprehensive HP tool for monitoring the performance of networked storage resources.

Performance Monitoring
An HP product that provides error and performance information to the administrator and end user for use in storage management.

Phantom Address
An AL_PA value that is assigned to an device that is not physically in the loop.

Also known as phantom AL_PA.

Phantom Device
A device that is not physically in an arbitrated loop, but is logically included through the use of a phantom address.

PLOGI
Port Login. The port-to-port login process by which initiators establish sessions with targets.

See also FLOGI.

Point-to-point
A Fibre Channel topology that employs direct links between each pair of communicating entities.

See also topology.

Port Cage
The metal casing extending out of the optical port on the switch, and in which the SFP can be inserted.

Port Card
A Fibre Channel card that contains optical or copper port interfaces, and acts like a switch module.

See also 16-port card.

Port Module
A collection of ports in a switch.

Port_Name
The unique identifier assigned to a Fibre Channel port. Communicated during login and port discovery.

POST
Power On Self-Test. A series of tests run by a switch after it is turned on.

Primary FCS Switch
Primary fabric configuration server switch. The switch that actively manages the configuration parameters for all switches in the fabric.

See also backup FCS switch, FCS switch.

Private Device
A device that supports arbitrated loop protocol and can interpret 8-bit addresses, but cannot log into the fabric.

Private Loop
An arbitrated loop that does not include a participating FL_Port.

Private NL_Port
An NL_Port that communicates only with other private NL_Ports in the same loop and does not log into the fabric.

Protocol
A defined method and a set of standards for communication.

PSU
Power Supply Unit.

Public Device
A device that supports arbitrated loop protocol, can interpret 8-bit addresses, and can log into the fabric.

Public Loop
An arbitrated loop that includes a participating FL_Port, and may contain both public and private NL_Ports.

Public NL_Port
An NL_Port that logs into the fabric, can function within either a public or a private loop, and can communicate with either private or public NL_Ports.

Quad
A group of four adjacent ports that share a common pool of frame buffers.

QuickLoop
An HP StorageWorks product that makes it possible to allow private devices within loops to communicate with public and private devices across the fabric through the creation of a larger loop.

May also refer to the arbitrated loop created using this software. A QuickLoop can contain a number of devices or looplets; all devices in the same QuickLoop share a single AL_PA space.

A means of allowing private hosts to communicate with private targets across a switched fabric.

The QuickLoop/Fabric Assist feature also allows:

- private hosts to communicate with public targets across a switched fabric.
- private hosts to communicate with private targets that are not resident on the same switch across a switched fabric.

See also Fabric Access, fabric assist, and translative mode.

QuickLoop Zoning
Protects devices from disruption by unrelated devices during critical processes; for example, during a tape backup session.

R_A_TOV
Resource Allocation Time-out Value. The maximum time a frame can be delayed in the fabric and still be delivered.

See also E_D_TOV, RR_TOV.

R_RDY
Receiver ready. A primitive signal indicating that the port is ready to receive a frame.

RAID
Redundant Array of Independent Disks. A collection of disk drives that appear as a single volume to the server and are fault tolerant through mirroring or parity checking.

See also JBOD.

Remote Fabric
A fabric that spans across WANs by using protocol translation (a process also known as tunneling) such as Fibre Channel over ATM or Fibre Channel over IP.

Remote Switch
Bridges two switches into a SAN as large as 3000KM or more through protocol encapsulation in ATM networks via the Computer Network Technologies (CNT) UltraNet Open Systems Gateway.

Request Rate
The rate at which requests arrive at a servicing entity.

See also service rate.

RLS Probing
Read link status of the AL_PAs.

Root Account
A login used for debugging purposes by HP engineers and is not intended for customer use.

See also account level switches.

Route
As applies to a fabric, the communication path between two switches. May also apply to the specific path taken by an individual frame, from source to destination.

See also FSPF.

Routing
The assignment of frames to specific switch ports, according to frame destination.

RR_TOV
Resource Recovery Time-out Value. The minimum time a target device in a loop waits after a LIP before logging out a SCSI initiator.

See also E_D_TOV, R_A_TOV.

RS-232 port
A port that conforms to a set of Electrical Industries Association (EIA) standards. Used to connect DTE and DCE devices for communication between computers, terminals, and modems.

See also DCE port, DTE port.

RSCN
Registered State Change Notification. A switch function that allows notification of fabric changes to be sent from the switch to specified nodes.

RX_ID
Responder Exchange Identifier. A 2-byte field in the frame header used by the responder of the Exchange to identify frames as being part of a particular exchange.

SAN
Storage Area Network. A network of systems and storage devices that communicate using Fibre Channel protocols.

See also fabric.

SAN Switch
A switch whose main task is to connect nodes into the fabric.

See also core switch.

SCSI
Small Computer Systems Interface. A parallel bus architecture and protocol for transmitting large data blocks to a distance of 15 - 25 meters.

SDRAM
Synchronous Dynamic Random Access Memory. The main memory for the switch. Used for volatile storage during switch operation.

See also flash.

Sequence
A group of related frames transmitted in the same direction between two N_Ports.

Service Rate
The rate at which an entity can service requests.

See also request rate.

SFF
Small Form Factor.

SFP Cable

The latest innovation in high-speed copper cabling for Fibre Channel and InfiniBand. It incorporates the SFP module directly onto the cable assembly, eliminating the need for a separate SFP copper module and an HSSDC2 cable assembly.

SFP
Small form factor pluggable. A transceiver used on 2 Gbps switches that replaces the GBIC. Refers to the LC-form factor transceiver.

See also GBIC.

SID/DID
Source identifier/Destination identifier. S_ID is a 3-byte field in the frame header that is used to indicate the address identifier of the N_Port from which the frame was sent.

Single Mode
The fiber optic cabling standard that, when used in conjunction with a 1300 nm laser light, can transfer data up to 10 km between devices. When used in conjunction with a 1550 nm laser light, single mode cabling can transfer data over 10 km.

See also multimode, LWL, ELWL, and XLWL.

SI
Sequence Initiative.

SNMP
Simple Network Management Protocol. An internet management protocol that uses either IP for network-level functions and UDP for transport-level functions, or TCP/IP for both. Can be made available over other protocols, such as UDP/IP, because it does not rely on the underlying communication protocols.

See also Community (SNMP).

SNMPv1
The original SNMP, now labeled v1.

SNS
Simple Name Server. A switch service that stores names, addresses, and attributes for up to 15 minutes, and provides them as required to other devices in the fabric. SNS is defined by Fibre Channel standards and exists at a well-known address. May also be referred to as directory service.

See also FS.

StorageWorks SAN switch
The brand name for the HP family of switches.

Switch Name
The arbitrary name assigned to a switch.

Switch Port
A port on a switch. Switch ports can be E_Ports, F_Ports, or FL_Ports.

Switch
Hardware that routes frames according to Fibre Channel protocol and is controlled by software.

SWL
Short Wavelength. A type of fiber optic cabling that is based on 850-mm lasers and supports 1.0625-Gbps link speeds. May also refer to the type of GBIC or SFP.

See also LWL.

Tachyon
A chip developed by Hewlett-Packard, and used in various devices. This chip has FC-0 through FC-2 on one chip.

Target
A storage device on a Fibre Channel network.

See also Initiator.

Tenancy
The time from when a port wins arbitration in a loop until the same port returns to the monitoring state. Also referred to as loop tenancy.

Terminal Serial Port
May also be referred to as the console port. The lower serial port on the CP Card of the StorageWorks Core switch. This port sends switch information messages and can receive commands. Can be used to connect the CP Card to a computer terminal. Has an RS-232 connector wired as a DTE device, and can be connected by serial cable to a DCE device. The connector pins two and three are swapped so that a straight-through cable can be used to connect to a terminal. The device name is ttyS0.

See also DCE port, modem serial port.

Throughput
The rate of data flow achieved within a cable, link, or system. Usually measured in bps (bits per second).

See also bandwidth.

Topology
As applies to Fibre Channel, the configuration of the Fibre Channel network and the resulting communication paths allowed. There are three possible topologies:

- Point to point—A direct link between two communication ports.
- Switched fabric—Multiple N_Ports linked to a switch by F_Ports.
- Arbitrated loop—Multiple NL_Ports connected in a loop.

Transceiver
Device that converts one form of signaling to another for transmission and reception; in fiber optics, it refers to optical and electrical.

Transfer State
The state in which a port can establish circuits with multiple ports without reentering the arbitration cycle for each circuit. This state can only be accessed by an L_Port in the Open state.

Translative Mode
A mode in which private devices can communicate with public devices across the fabric.

Transmission Character
A 10-bit character encoded according to the rules of the 8B/10B algorithm.

Transmission Word
A group of four transmission characters.

See also data word.

Trap (SNMP)
The message sent by an SNMP agent to inform the SNMP management station of a critical error.

See also SNMP.

Trunking
See ISL Trunking.

Tunneling
A technique for enabling two networks to communicate when the source and destination hosts are both on the same type of network, but are connected by a different type of network.

U_Port
Universal Port. A switch port that can operate as a G_Port, E_Port, F_Port, or FL_Port. A port is defined as a U_Port when it is not connected or has not yet assumed a specific function in the fabric.

UDP
User Datagram Protocol. A protocol that runs on top of IP and provides port multiplexing for upper-level protocols.

ULP_TOV
Upper-level Time-out Value. The minimum time that a SCSI ULP process waits for SCSI status before initiating ULP recovery.

ULP
Upper-level Protocol. The protocol that runs on top of Fibre Channel. Typical upper-level protocols are SCSI, IP, HIPPI, and IPI.

Unicast
The transmission of data from a single source to a single destination.

See also broadcast, multicast.

user account
A login intended for use by the customer to monitor, but not control, switch operation.

See also account level switches.

VC
Virtual circuit. A one-way path between N_Ports that allows fractional bandwidth.

Web Tools
An HP product that runs on Fabric OS and provides a graphical interface to allow monitoring and management of individual switches or entire fabrics from a standard workstation running a browser.

Well-known Address
As pertaining to Fibre Channel, a logical address defined by the Fibre Channel standards as assigned to a specific function, and stored on the switch.

Workstation
A computer used to access and manage the fabric. May also be referred to as a management station or host.

WWN
World-Wide Name. An identifier that is unique worldwide. Each entity in a fabric has a separate WWN.

XLWL
Xtra Long Wave Length. Laser light with a periodic length greater than 1300 nm (e.g., 1420 or 1550). XLWL lasers are used to transmit Fibre Channel data over distances greater than 10 Km.

Also known as ELWL.

Xmitted Close State
The state in which an L_Port cannot send messages, but can retransmit messages within the loop. A port in the XMITTED CLOSE state cannot attempt to arbitrate.

Zone
A set of devices and hosts attached to the same fabric and configured as being in the same zone. Devices and hosts within the same zone have access permission to others in the zone, but are not visible to any outside the zone.

See also Zoning.

Zone Alias
A name assigned to a device or group of devices in a zone. Aliases can greatly simplify the zone administrative process.

See also alias.

Zone Configuration
A specified set of zones. Enabling a configuration enables all zones in that configuration.

See also defined zone configuration, enabled zone configuration.

Zone Member
A port, node, WWN, or alias, which is part of a zone.

Zone Schemes
The level of zoning granularity selected. For example, zoning may be done by switch/port, WWN, AL_PA, or a mixture.

See also zone configuration.

Zone Set
See zone configuration.

Zoning
An HP product that runs on Fabric OS and allows partitioning of the fabric into logical groupings of devices. Devices in a zone can only access and be accessed by devices in the same zone.

See also zone.

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