



Fabric OS™

Reference Manual

Version 2.4

Copyright

© 1998 - 2001 Brocade Communications Systems, Incorporated.

ALL RIGHTS RESERVED.

Publication Number 53-0001569-01

BROCADE, SilkWorm, SilkWorm Express, Fabric OS, Fabric Watch, QuickLoop, and the BROCADE logo are trademarks or registered trademarks of Brocade Communications Systems, Inc., in the United States and/or in other countries.

All other brands, products, or service names are or may be trademarks or service marks of, and are used to identify, products or services of their respective owners.

Notice: This document is for informational purposes only and does not set forth any warranty, express or implied, concerning any equipment, equipment feature, or service offered. BROCADE reserves the right to make changes to this document at any time, without notice, and assumes no responsibility for its use.

Export of technical data contained in this document may require an export license from the United States Government.

Contents

About This Guide	ix
Related Publications	ix
Getting Help	x
Getting Software Updates.....	x

Chapter 1 Telnet Commands

agtcfgDefault	1-1
agtcfgSet.....	1-3
agtcfgShow.....	1-5
aliasShow	1-7
backSpace.....	1-8
bcastShow.....	1-9
camTest.....	1-10
centralMemoryTest.....	1-11
cmemRetentionTest	1-12
cmiTest	1-13
configDefault	1-15
configDownload.....	1-16
configShow.....	1-18
configUpload	1-20
configure.....	1-22
crossPortTest.....	1-28
date	1-32
diagClearError	1-33
diagDisablePost	1-34
diagEnablePost.....	1-35

diagHelp	1-37
diagShow	1-38
dlsReset.....	1-40
dlsSet.....	1-41
dlsShow.....	1-42
errDisplayFilter.....	1-43
errDump	1-44
errShow.....	1-45
fabricShow	1-50
fanShow	1-52
fastboot	1-53
firmwareDownload.....	1-54
fspfShow.....	1-56
gbicShow	1-58
h	1-60
help	1-61
i	1-62
ifModeSet	1-64
ifModeShow	1-65
ifShow.....	1-66
interfaceShow	1-68
iodReset	1-71
iodSet	1-72
iodShow	1-73
ipAddrSet	1-74
ipAddrShow	1-75
islTopoCheck	1-76
islTopoShow	1-77
licenseAdd	1-79
licenseHelp	1-80

licenseRemove	1-81
licenseShow	1-82
linkCost	1-83
login	1-85
logout	1-86
loopdiagClear	1-87
loopdiagDone	1-88
LSDbShow	1-89
mcastShow	1-92
msConfigure	1-93
msPlatShow	1-95
msPIClearDB	1-96
msPICapabilityShow	1-97
msPIMgmtActivate	1-98
msPIMgmtDeactivate	1-99
nbrStatsClear	1-100
nbrStateShow	1-101
nsAllShow	1-102
nsShow	1-103
parityCheck	1-105
passwd	1-106
portCfgEport	1-108
portCfgGport	1-109
portCfgLport	1-110
portCfgLongDistance	1-111
portcfgMcastLoopback	1-113
portDisable	1-115
portEnable	1-116
portErrShow	1-117
portLogClear	1-119

portLogDump	1-120
portLogShow	1-121
portLoopbackTest	1-128
portPerfShow	1-130
portRegTest	1-131
portRouteShow	1-133
portShow	1-135
portStatsShow	1-137
psShow	1-140
quietMode	1-141
ramTest	1-142
reboot	1-144
routeHelp	1-145
setGbicMode	1-146
setSplbMode	1-147
sgroupDelete	1-148
sgroupRename	1-149
sgroupSet	1-150
sgroupShow	1-152
sgroupSupportShow	1-154
sgroupSwReplace	1-157
snmpMibCapSet	1-159
spinSilk	1-160
sramRetentionTest	1-164
supportShow	1-165
switchBeacon	1-167
switchDisable	1-168
switchEnable	1-169
switchName	1-170
switchShow	1-171

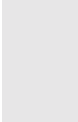
switchStatusPolicySet	1-174
switchStatusPolicyShow	1-177
switchStatusShow	1-179
syslogdIpAdd	1-180
syslogdIpRemove	1-181
syslogdIpShow	1-182
tempShow	1-183
timeOut	1-184
topologyShow	1-185
trackChangesSet	1-187
uptime	1-188
uRouteConfig	1-190
uRouteRemove	1-191
uRouteShow	1-192
version.	1-194

Chapter 2 Error Messages

System Error Message Formats	2-1
Displaying Error Messages Using Telnet	2-2
Resetting Bad Ports.	2-2
Post Test Commands.	2-3
POST Test Failure and Recovery Actions	2-3
Error Message Numbers	2-4
Diagnostic Error Messages	2-8
System Error Messages.	2-14

Chapter 3 Feature Telnet Commands

Zoning Commands	3-1
QuickLoop Commands	3-2
QuickLoop Fabric Assist Mode Commands.	3-3
Extended Fabric Command	3-3



Fabric Watch Commands 3-4

Silkworm 6400 Commands 3-4

Preface

Fabric OS Reference Manual contains descriptions for the telnet commands used to administer and configure SilkWorm switches.

About This Guide

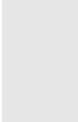
This guide provides the following information about Fabric OS:

Chapter 1 Telnet Commands	Provides a detailed description of the telnet commands in the Fabric OS.
Chapter 2 Error Messages	Provides error message formats as well as a list of error messages with descriptions.
Chapter 3 License Telnet Commands	Provides a summary of telnet commands that are available with licensed products such as Zoning, Quickloop, or Fabric Watch.

Related Publications

Related product information can be found in the following Brocade publications:

Title	Part Number
Fabric Watch User's Guide v2.2	53-0001559-02
BROCADE WEB TOOLS User's Guide v2.3	53-0000067-02
Distributed Fabrics User's Guide v2.2	53-0001557-02
QuickLoop User's Guide v2.3	53-0000068-02
BROCADE ZONING User's Guide v2.2	53-0001555-01
SES User's Guide v2.3	53-0000222-02
SilkWorm 2200 Hardware Reference Manual	53-0000030-03
MIB Reference Manual	53-0000069-02
Fabric Access Layer API Reference Manual	53-0000070-02



Information about fibre channel standards and the fibre channel industry in general can be found on the Fibre Channel Industry Association web site, located at:

<http://www.fibrechannel.com>

Getting Help

Contact your switch supplier for technical support. This includes hardware and software support, all product repairs, and ordering of spare components.

Be prepared to provide the following information to the support personnel:

- Switch serial number
- Switch worldwide name
- Topology configuration
- Output from the `supportShow telnet` command
- Detailed description of the problem
- Troubleshooting steps already performed

Getting Software Updates

Contact your switch supplier for software updates and maintenance releases. New switch firmware can be installed from the following host operating systems:

- UNIX
- Windows NT
- Windows 98
- Windows 95

Utility programs to facilitate loading firmware from the listed operating systems, in addition to MIB files for switch management by SNMP, are available at the following URL:

<http://secure.brocade.com/index.html>

They can also be accessed through the following steps:

1. Launch your web browser and enter <http://www.brocade.com>.
2. Click to expand **Partners** in the left margin, then click **Partner Login**.
3. Click **Login Now**.
4. Enter your login and password and click **Login**.
5. Click **MIBs and RSH Utilities** (under **Technical Support** in the left margin).

Telnet Commands

agtcfgDefault

Reset the SNMP agent configuration to default values.

Synopsis agtcfgDefault

Availability admin

Description Use this command to reset the configuration of the SNMP agent to default values:

- `sysDescr` - The default value is `Fibre Channel Switch`.
- `sysLocation` - The default value is `End User Premise`.
- `sysContact` - The default value is `Field Support`.
- `swEventTrapLevel` - The default value is 0 (off).
- `authTraps` - The default value is 0 (off).
- The IP addresses of the trap recipient for each community defaults to 0.0.0.0 or no trap recipient. The 6 communities are:

Community 1: `Secret C0de`

Community 2: `OrigEquipMfr`

Community 3: `private`

Community 4: `public`

Community 5: `common`

Community 6: `FibreChannel`

Note: For more information about these SNMP configuration parameters refer to `agtcfgset` command.

Operands None.

Example In the example below, the **agtcfgDefault** command is run to set the SNMP agent configuration parameters to the default values, then the **agtcfgShow** command is run to verify the default values are set.

```
switch:admin> agtcfgDefault
Committing configuration...done.
agent configuration reset to factory default
switch:admin> agtcfgShow
Current SNMP Agent Configuration
Customizable MIB-II system variables:
  sysDescr = Fibre Channel Switch.
  sysLocation = End User Premise
  sysContact = Field Support.
  swEventTrapLevel = 0
  authTraps = 0 (OFF)
SNMPv1 community and trap recipient configuration:
Community 1: Secret C0de (rw)
  No trap recipient configured yet
Community 2: OrigEquipMfr (rw)
  No trap recipient configured yet
Community 3: private (rw)
  No trap recipient configured yet
Community 4: public (ro)
  No trap recipient configured yet
Community 5: common (ro)
  No trap recipient configured yet
Community 6: FibreChannel (ro)
  No trap recipient configured yet
switch:admin>
```

See Also agtcfgSet
agtcfgShow

agtcfgSet

Modify the SNMP agent configuration.

Synopsis agtcfgSet

Availability admin

Description Use this command to modify the configuration of the SNMP agent in the switch. Set the values for the following items:

- `sysDescr` - Specify the switch description (in MIB-II definition). The default value is `Fibre Channel Switch`.
- `sysLocation` - Specify the location of the switch (in MIB-II). The default value is `End User Premise`.
- `sysContact` - Specify the contact information for this switch. The default value is `Field Support`.
- `swEventTrapLevel` - Specify the event trap level in conjunction with an event's severity level. When an event occurs, and if its severity level is at or below the set value (that is, more critical), the SNMP trap, `swEventTrap`, is sent to configured trap recipients. The default value is 0 which means that no `swEventTrap` is sent. Possible values are:

0 - none

1 - critical

2 - error

3 - warning

4 - informational

5 - debug

See `errShow` for more information.

- `authTrapsEnabled` - Specify whether authorization traps are passed to the trap recipient. The default value is `False` (off), meaning no messages are sent. A value of `True` (on) means that authorization trap messages are sent to the community IP addresses configured below. For SNMPv1 and SNMPv2c, this indicates that a request containing a community string is not known to the agent.
- There are six communities, each with a respective trap recipient, supported by the agent. The first three communities are for read-write access (rw) and the last three are for read-only access (ro).

Specify the IP address for each management station:

Community 1: `Secret C0de` - The default value for this trap recipient is '0.0.0.0'.

Community 2: `OrigEquipMfr` - The default value for this trap recipient is '0.0.0.0'.

Community 3: `private` - The default value for this trap recipient is '0.0.0.0'.

Community 4: `public` - The default value for this trap recipient is '0.0.0.0'.

Community 5: `common` - The default value for this trap recipient is '0.0.0.0'.

Community 6: `FibreChannel` - The default value for this trap recipient is '0.0.0.0'.

Operands None.

Example The current value for each item is displayed in brackets. To modify the SNMP configuration values:

```
switch:admin> agtcfgSet
Customizing MIB-II system variables ...
At each prompt, do one of the following:
  o <Return> to accept current value,
  o enter the appropriate new value,
  o <Control-D> to skip the rest of configuration, or
  o <Control-C> to cancel any change.
To correct any input mistake:
  <Backspace> erases the previous character,
  <Control-U> erases the whole line,
  sysDescr: [FC Switch]
  sysLocation: [End User Premise]
  sysContact: [Field Support]
  swEventTrapLevel: (0..5) [3] 4
  authTrapsEnabled (true, t, false, f): [true]
SNMP community and trap recipient configuration:
Community (rw): [Secret C0de]
  Trap Recipient's IP address in dot notation: [192.168.1.51]
Community (rw): [OrigEquipMfr]
  Trap Recipient's IP address in dot notation: [192.168.1.26]
Community (rw): [private]
  Trap Recipient's IP address in dot notation: [0.0.0.0]
  192.168.64.88
Community (ro): [public]
  Trap Recipient's IP address in dot notation: [0.0.0.0]
Community (ro): [common]
  Trap Recipient's IP address in dot notation: [0.0.0.0]
Community (ro): [FibreChannel]
  Trap Recipient's IP address in dot notation: [0.0.0.0]
value = 1 = 0x1
switch:admin>
```

See Also agtcfgDefault
agtcfgShow

agtcfgShow

Display the SNMP agent configuration.

Synopsis agtcfgShow

Availability All users

Description Use this command to display the configuration of the SNMP agent in the switch. The following information is displayed:

- `sysDescr` - Displays the switch description.
- `sysLocation` - Displays the location of the switch.
- `sysContact` - Displays the contact information for this switch.
- `swEventTrapLevel` - Displays the event trap level. Possible values are:

0 - none

1 - critical

2 - error

3 - warning

4 - informational

5 - debug

Note: See `errShow` for more information on the event trap level.

- `authTraps` - Displays whether authorization traps are passed to the trap recipient. The default value is 0 (off), meaning no messages are sent. A value of 1 (on) means that authorization trap messages are sent to the community IP addresses configured below. For SNMPv1 and SNMPv2c, this indicates that a request containing a community string is not known to the agent.
- There are six communities, each with a respective trap recipient, supported by the agent. The first three communities are for read-write access (rw) and the last three are for read-only access (ro).

For an SNMP Management Station to receive a trap generated by the agent, the admin user must configure a trap recipient IP address of the Management Station.

Community 1: Secret C0de - Displays the IP address for this trap recipient.

Community 2: OrigEquipMfr - Displays the IP address for this trap recipient.

Community 3: private - Displays the IP address for this trap recipient.

Community 4: public - Displays the IP address for this trap recipient.

Community 5: common - Displays the IP address for this trap recipient.

Community 6: FibreChannel - Displays the IP address for this trap recipient.

Note: For more information about these SNMP configuration parameters refer to `agtcfgset` command.

Operands None.

Example To display SNMP agent configuration information:

```
switch:admin> agtcfgShow
Current SNMP Agent Configuration
Customizable MIB-II system variables:
    sysDescr = FC Switch
    sysLocation = End User Premise
    sysContact = Field Support.
swEventTrapLevel = 3
    authTraps = 1 (ON)

SNMPv1 community and trap recipient configuration:
Community 1: Secret C0de (rw)
    Trap recipient: 192.168.1.51
Community 2: OrigEquipMfr (rw)
    Trap recipient: 192.168.1.26
Community 3: private (rw)
    No trap recipient configured yet
Community 4: public (ro)
    No trap recipient configured yet
Community 5: common (ro)
    No trap recipient configured yet
Community 6: FibreChannel (ro)
    No trap recipient configured yet
```

See Also agtcfgDefault
agtcfgSet

aliasShow

Display alias server information.

Synopsis aliasShow

Availability All users

Description Use this command to display local alias server information. If there is no local alias group, a message is displayed. If there are multiple entries in the local alias group, they are displayed.

Note: This command is not related to the BROCADE ZONING feature.

The following fields are displayed:

Alias ID Multicast address presented in format FFFBxx, where xx is the name of the multicast group.

Creator Fibre channel address ID of Nx_Port that created alias group.

Creator token Alias token provided to map to the alias group; it consists of the following entries:

rb	Routing bits.
type	Upper level application type.
grptype	Alias group type; can only be 10 for multicast.
qlfr	Alias qualifier of group.

Member list A list of member address IDs.

Operands None.

Example To display the entries in the local alias server, enter the following command.

```
switch:admin> aliasShow
The Local Alias Server has 1 entry
Alias ID Creator Token [rb, type, grptype, qlfr] Member List
ffff01 fffffd [40, 05, 10, 60000010 12000069] {021200 0208e2}
```

See Also fabricShow
switchShow

backSpace

Set or clear alternate backspace character.

Synopsis backSpace [0 | 1]

Availability all users (display)
admin (set/clear)

Description This command changes the backspace character used by the shell between the default value of BACKSPACE (hex 08) and an alternate value of DEL (hex 7F).

Operands This command has the following operand:

[0 | 1] Specify 0 to use the standard backspace character (BACKSPACE). Specify 1 to use the alternate backspace character (DEL). This operand is optional.

Specify the command with no operand to display the current setting.

Example To display the current backspace character and change it to DEL:

```
switch:admin> backSpace
BackSpace character is BACKSPACE (hex 08)
switch:admin> backSpace 1
Committing configuration...done.
BackSpace character is DEL (hex 7F)
```

bcastShow

Display broadcast routing information.

Synopsis `bcastShow`

Availability All users

Description Use this command to display the broadcast routing information for all ports in the switch (known to the FSPF path selection/routing task). The broadcast routing information indicates all ports that are members of the broadcast distribution tree (that is, ports that are able to send and receive broadcast frames).

Normally, all `F_Ports` and `FL_Ports` are members of the broadcast distribution tree. The broadcast path selection protocol selects the `E_Ports` that are part of the broadcast distribution tree. The `E_Ports` are chosen in such a way to prevent broadcast routing loops.

The broadcast routing information displays as a set of bit maps. Each bit in a bit map represents a port, with the least significant bit representing port 0. If a bit is set to 1, that port is part of the broadcast distribution tree.

The following fields are displayed:

`Group` Displays the multicast group ID of the broadcast group.

`Member Ports` Displays a map of all ports in broadcast tree.

`Member ISL Ports`
 Displays a map of all `E_Ports` in broadcast tree.

`Static ISL Ports`
 Reserved.

Operands None.

Examples To display the broadcast routing information for all ports in the switch:

```
switch:admin> bcastShow

Group      Member Ports      Member ISL Ports      Static ISL Ports
-----
256        0x00012083        0x00002080            0x00000000
```

See Also `mcastShow`

`portRouteShow`

camTest

Functional test of the CAM memory.

Synopsis `camTest [passCount]`

Availability admin

Description Use this command to verify that Content Addressable Memory (CAM) is functionally correct. The CAM is used by QuickLoop to translate the SID.

Note: This command may not be executed on an operational switch. You must first disable the switch using the `switchDisable` command.

Operands This command has the following operand:

`passCount` Specify the number of times to execute this test. The default value is 1. This operand is optional.

Example To verify that Content Addressable Memory (CAM) is functionally correct:

```
switch:admin> camTest 2
Running CAM Test ..... passed.
```

Errors Below are possible error messages if failures are detected:

DIAG-CAMINIT
DIAG-XMIT
DIAG-CAMSID

See Also `centralMemoryTest`
`cmemRetentionTest`
`cmiTest`
`crossPortTest`
`portLoopbackTest`
`portRegTest`
`ramTest`
`spinSilk`
`sramRetentionTest`

centralMemoryTest

Bit write/read test of the ASIC central memory.

Synopsis `centralMemoryTest [passCount, dataType, dataSeed]`

Availability admin

Description Use this command to verify the address and data bus of the ASIC SRAMs that serve as the central memory.

Note: This command may not be executed on an operational switch. You must first disable the switch using the `switchDisable` command.

Operands This command has the following operands:

`passCount` Specify the number of times to execute this test.

`dataType` Specify the data type to use when writing the central memory. The `dataTypeShow` command lists data types allowed.

`dataSeed` Specify the initial seed value used in generating the data pattern. For example, a `QUAD_RAMP` pattern with a seed value of `0xdead` is as follows: `0xdead`, `0xdeae`, `0xdeaf`, `0xdeb0`, ...

Some data types, such as `BYTE_LFSR`, do not require a seed value.

If all operands are omitted, the default values are 1 for `passCount`, `QUAD_RAMP` for `dataType`, and a random value for `dataSeed`.

Example To test the ASIC central memory:

```
switch:admin> centralMemoryTest
Running Central Memory Test ... passed.
```

Errors Below are possible error messages if failures are detected:

```
DIAG-TIMEOUT
DIAG-BADINT
DIAG-CMERRTYPE
DIAG-CMERRPTN
```

See Also

- `camTest`
- `cmemRetentionTest`
- `portLoopbackTest`
- `portRegTest`
- `ramTest`
- `spinSilk`
- `sramRetentionTest`

cmemRetentionTest

Data retention test of the central memory SRAMs.

Synopsis `cmemRetentionTest [passCount]`

Availability `admin`

Description Use this command to verify for data retention in the central memory SRAMs in the ASIC.

Note: This command can not be executed on an operational switch. You must first disable the switch using the `switchDisable` command.

Operands This command has the following operand:

`passCount` Specify the number of times to execute this test. The default value is 1. This operand is optional.

Example To run the data retention test on the central memory SRAMs:

```
switch:admin> cmemRetentionTest
Running CMEM Retention Test ... passed.
```

Errors Below are possible error messages if failures are detected:

```
DIAG-LCMRS
DIAG-LCMTO
DIAG-LCMEM
```

See Also `camTest`
`centralMemoryTest`
`cmiTest`
`crossPortTest`
`portLoopbackTest`
`ramTest`
`spinSilk`
`sramRetentionTest`

cmiTest

ASIC to ASIC connection test of the CMI bus

Synopsis `cmiTest [passCount]`

Availability admin

Description Use this command to verify that the multiplexed 4-bit Control Message Interface (CMI) point-to-point connection between two ASICs is functioning properly. Also use it to verify that a message with a bad checksum sets the error and interrupt status bits of the destination ASIC and that a message with a good checksum does not set an error or interrupt bit in any ASIC.

Note: This command can not be executed on an operational switch. You must first disable the switch using the `switchDisable` command.

The Test method is displayed below. Complete the following for each source ASIC X and each destination ASIC Y in the switch. Do not complete this test if ASIC X = ASIC Y.

1. Generate the CMI data D.
2. Send data from source X to destination Y.
3. Check destination Y for the following:
 - the capture flag is set.
 - the data is received as expected (D).
 - if a good checksum test, the CMI error bit and the EMI error interrupt status bit are not set.
 - if a bad checksum test, the CMI error bit and the CMI error interrupt status bit are set.
4. Check that all ASICs (other than Y) do not have:
 - the capture flag set.
 - the CMI error bit set.
 - the CMI error interrupt status bit set.

Operands This command has the following operand:

`passCount` Specify the number of times to execute this test. The default value is 1. This operand is optional.

Example To run the ASIC to ASIC connection test of the CMI bus:

```
switch:admin> cmiTest
Running CMI Test ..... passed.
```

Errors Below are possible error messages if failures are detected:

DIAG-CMISA1
DIAG-CMINOCAP
DIAG-CMICKSUM
DIAG-CMIINVCAP
DIAG-CMIDATA
DIAG-INTNIL
DIAG-BADINT

See Also

camTest
centralMemoryTest
cmemRetentionTest
crossPortTest
portLoopbackTest
portRegTest
ramTest
spinSilk
sramRetentionTest

configDefault

Restore system configuration to default settings.

Synopsis configDefault

Availability admin

Description Use this command to reset system configuration to default values.

All configuration parameters, with the following exceptions, are reset to default values:

- Ethernet MAC address, IP address, and subnetmask
- IP gateway address
- License keys
- OEM customization
- SNMP configuration
- System name
- World Wide Name
- BROCADE ZONING configuration

Note: Refer to the Configure command for more information on default values for configuration parameters.

Note: Do not run this command on an operational switch. First disable the switch using the switchDisable command.

Some configuration parameters are cached by the system. To avoid unexpected switch behavior, reboot the system after executing this command.

Operands None.

Example To restore the system configuration to default values:

```
switch:admin> configDefault
Committing configuration...done.
```

See Also agtcfgDefault

configure

switchDisable

switchEnable

configDownload

Download the switch configuration from a host file.

Synopsis `configDownload ["host" , "user" , "file" [, "passwd"]]`

Availability admin

Description Use this command to download the switch configuration file from a host system. The configuration file is ASCII text and may have been generated using `configUpload`, or it may have been created by a user to download specific configuration changes.

The download process uses either FTP or the RSHD protocol (TCP service 514).

On Windows NT, the FTP server may have to be installed from the distribution media and enabled, or on Windows NT or Windows 9x, there are several good freeware and shareware FTP servers available. To use RSHD on Windows NT or 9x, two utilities are supplied, RSHD.EXE and CAT.EXE, together with instructions on how to install and run them. The FTP server or RSHD must be running before a download can be initiated.

The command may be invoked without any operands, in which case the user is prompted for input, including choice of FTP or RSHD. If invoked with three operands RSHD is used; otherwise, presence of the password operand selects FTP.

Note that the switch's identity cannot be changed by `configDownload`. These parameters (such as the switch's name and IP address) are ignored. They are the lines in the configuration file which begin with "boot".

Also note that the download process is additive; that is, the lines read from the file are added to the current switch configuration. This enables you to change a single configuration variable by downloading a file with a single line. All other variables remain unchanged.

This is particularly important when downloading a zoning configuration. Since the new zoning information is added to the current configuration, there may not be any conflicts. Typically this command is used to add a consistent change to the current zoning configuration, or to replace the current zoning configuration, in which cases `cfgClear` must be invoked before `configDownload`.

Operands This command has the following operands:

<code>host</code>	Specify a host name or IP address in quotation marks; for example, "citadel" or "192.168.1.48". The configuration file is downloaded from this host system. This operand is optional.
<code>user</code>	Specify a user name in quotation marks; for example, "jdoe". This user name is used to gain access to the host. This operand is optional.
<code>file</code>	Specify a file name in quotation marks; for example, "config.txt". Absolute path names may be specified using forward slash (/). Relative path names create the file in the user's home directory on UNIX hosts, and in the directory where the FTP server is running on Windows hosts. This operand is optional.
<code>passwd</code>	Specify a password in quotation marks. If present, the command uses FTP to transfer the file. This operand is optional.

Example To download switch configuration from from the server `citadel`, username `jdoe`, and host file name `config.txt`:

```
switch:admin> configDownload "citadel","jdoe","config.txt"  
Committing configuration...done.  
download complete
```

Errors Below are possible reasons for a failure of this command:

- The host name is not known to the switch
- The host IP address cannot be contacted
- The user does not have permission on the host
- The user runs a script that prints something at login
- The file does not exist on the host
- The file is not a switch configuration file
- The RSHD or FTP server is not running on the host
- The configuration data contains errors.

See Also `configDefault`
`configUpload`
`configShow`
`configure`

configShow

Display system configuration settings.

Synopsis `configShow ["textfilter"]`

Availability All users

Description Use this command to view system configuration settings set by the `configure` command, as well as the following settings:

- Ethernet MAC address
- NVRAM boot settings

Operands This command has the following operand:

`textfilter` Specify a text string, in quotation marks, that limits the output of the command to only those entries that contain the text string. The filter does not apply to the ethernet MAC address and NVRAM data display settings.

Example To display system configuration settings:

```
switch:admin> configShow

Ethernet address: 0:60:69:0:60:10
Nvram data: fei(0,0)host:/usr/switch/firmware e=192.168.1.62
g=192.168.1.254 u=user tn=switch
Type <CR> to continue, Q<CR> to stop:
diag.postDisable:      0
fabric.domain:         1
fabric.ops.BBCredit:   16
fabric.ops.E_D_TOV:    2000
fabric.ops.R_A_TOV:    10000
fabric.ops.dataFieldSize:      2112
fabric.ops.mode.fcpProbeDisable:      0
fabric.ops.mode.isolate:           0
fabric.ops.mode.tachyonCompat:       0
fabric.ops.mode.unicastOnly:         0
fabric.ops.mode.useCsCtl:            0
fabric.ops.mode.vcEncode:            0
fabric.ops.vc.class.2:               2
fabric.ops.vc.class.3:               3
fabric.ops.vc.config:                 0xc0
fabric.ops.vc.linkCtrl:              0
fabric.ops.vc.multicast:              7
fc4.fcIp.address:                   192.168.65.62
fc4.fcIp.mask:                       255.255.255.0
fcAL.fanFrameDisable:                0
fcAL.useAltBBCredit:                 0
lcdContrast:                         128
licenseKey:                          none
rpc.rstatd:                          1
rpc.rusersd:                         1
```

See Also agtcfgShow
configure
diagDisablePost
diagEnablePost
ipAddrShow
licenseShow
syslogdIp

configUpload

Backup the switch configuration to an ASCII file on a host workstation.

Synopsis `configUpload ["host" , "user" , "file" [, "passwd"]]`

Availability admin

Description Use this command to upload the switch configuration to a host file.

The upload process uses either FTP or the RSHD protocol (TPC service 514). Both of these services are widely available on UNIX hosts, but less so on Windows hosts. On Windows NT, the FTP server may have to be installed from the distribution media and enabled, or on Windows NT or Windows 9x, there are several freeware and shareware FTP servers available.

The two utilities supplied for RSHD . EXE and CAT . EXE, currently **do not** support uploads, only downloads. Therefore, in a Windows environment, FTP must be used, and the FTP server must be running before an upload can occur.

If the `configUpload` command is entered without operands, the user is prompted for input, including choice of FTP or RSHD. If invoked with three operands, RSHD is used; otherwise, presence of the fourth operand (password) selects FTP.

Operands This command has the following operands:

<code>host</code>	Specify a host name or IP address in quotation marks; for example, "citadel" or "192.168.1.48". The configuration file is downloaded from this host system. This operand is optional.
<code>user</code>	Specify a user name in quotation marks; for example, "jdoe". This user name is used to gain access to the host. This operand is optional.
<code>file</code>	Specify a file name in quotation marks; for example, "config.txt". Absolute path names may be specified using forward slash (/). Relative path names create the file in the user's home directory on UNIX hosts, and in the directory where the FTP server is running on Windows hosts. This operand is optional.
<code>passwd</code>	Specify a password in quotation marks. If present, the command uses FTP to transfer the file. This operand is optional.

Example To upload a configuration file using FTP from host `citadel`, using account `jdoe`, and a configuration file `config.txt`:

```
swd5:admin> configUpload "citadel" , "jdoe" , "config.txt" , "passwd"
upload complete
switch:admin>
```

If you enter the command with no operands, you are prompted for the appropriate values:

```
switch:admin> configUpload
Server Name or IP Address [citadel]: 192.168.15.42
User Name [none]: user21
File Name [config.txt]: config-switch.txt
Protocol (RSHD or FTP) [FTP]: ftp
Password: xxxxxx
upload complete
switch:admin>
```

Errors The upload can fail for several reasons:

- The host name is not known to the switch
- The host IP address cannot be contacted
- The user does not have permission on the host
- The user runs a script that prints something at login
- The RSHD or FTP server is not running on the host

See Also configDefault

configDownload

configShow

configure

configure

Change system configuration settings.

Synopsis `configure`

Availability admin

Description Use this command to change the following system configuration settings:

- Arbitrated loop settings
- Switch fabric settings
- System services settings
- Virtual channel settings

Note: Do not run this command on an operational switch. First disable the switch using the `switchDisable` command.

The `configure` command is navigated using a series of menus. Top level menus, and associated submenus consist of a text prompt, a list of acceptable values, and a default value (in brackets).

Use the following options to control input:

Return When entered at a prompt with no preceding input, accepts the default value (if applicable) and moves to the next prompt.

Interrupt (control-C) Aborts the command immediately and ignores all changes made. This keystroke is common on many computers, but can be different on your system.

End-of-file (control-D) When entered at a prompt with no preceding input, terminates the command and saves changes made. This keystroke is common on many computers, but can be different on your system.

The following tables define those settings that may be changed:

Arbitrated Loop Settings

This section provides information on arbitrated loop settings:

Field	Type	Default	Range
Send FAN frames?	Boolean	1	0 or 1
Always send RSCN?	Boolean	0	0 or 1

Send FAN frames?	Specifies that fabric address notification (FAN) frames be sent to public loop devices to notify them of their node ID and address. When set to 1, frames are sent; when set to 0 frames are not sent.
Always send RSCN?	Following the completion of loop initialization, a remote state change notification (RSCN) is issued when <code>FL_PORTS</code> detect the presence of new devices or the absence of preexisting devices. When set, a RSCN is issued upon completion of loop initialization, regardless of the presence or absence of new or preexisting devices.
Switch Fabric Settings	There are a number of settings which control the overall behavior and operation of the Fabric. Some of these values, such as the domain, are assigned automatically by the Fabric and may differ from one switch to another in the Fabric. Other parameters, such as the buffer-to-buffer credit or the time out values, can be changed for specific applications or operating environments, but must be in agreement among all switches to allow formation of the Fabric.

The table below defines settings that can be changed.

Switch Fabric Settings

This section provides information on switch fabric settings:

Field	Type	Default	Range
Domain	Number	1	Varies
BB Credit	Number	16	1 to 16
R_A_TOV	Number	10000	E_D_TOV * 2 to 120000
E_D_TOV	Number	2000	1000 to R_A_TOV / 2
Data Field Size	Number	2112	256 to 2112
Non-SCSI Tachyon Mode	Boolean	0	0 or 1
Disable Device Probing	Boolean	0	0 or 1
Unicast-only Operation	Boolean	0	0 or 1
VC Encoded Address Mode	Boolean	0	0 or 1
Disable Translative Mode	Boolean	0	0 or 1
Per-frame Route Priority	Boolean	0	0 or 1

Domain	The domain number uniquely identifies the switch in a Fabric. This value is automatically assigned by the Fabric. The range of allowed values varies depending on the switch model and other system settings (see VC Encoded Address Mode).
BB Credit	The buffer-to-buffer (BB) credit represents the number of buffers available to attached devices for frame receipt. The range of allowed values varies depending on other system settings (see Unicast-only Operation).
R_A_TOV	<p>The Resource Allocation Time Out Value (R_A_TOV) is displayed in milliseconds. This variable works with the variable E_D_TOV to determine switch actions when presented with an error condition.</p> <p>Allocated circuit resources with detected errors are not released until the time value has expired. If the condition is resolved prior to the time out, the internal time out clock resets and waits for the next error condition.</p>
E_D_TOV	Error Detect Time Out Value (E_D_TOV) is displayed in milliseconds. This timer is used to flag a potential error condition when an expected response is not received (an acknowledgment or reply in response to packet receipt, for example) within the set time limit. If the time for an expected response exceeds the set value, then an error condition occurs.
Data Field Size	This specifies the largest possible value, in bytes, and advertises this value to other switches in the fabric during construction of the fabric as well as to other devices when they connect to the fabric. Setting this to a value smaller than 2112 may result in decreased performance.
Sequence Level Switching	<p>When this feature is set to 1, frames of the same sequence from a particular source are transmitted together as a group. When this feature is set to 0, frames are transmitted interleaved among multiple sequences.</p> <p>Under normal conditions, Sequence Level Switching should be disabled for better performance. However, some host adapters have performance issues when receiving interleaved frames from multiple sequences. When there are such devices attached to the fabric, Sequence Level Switching should be enabled.</p>

Disable Device Probing	When this is set, devices that do not register with the Name Server are not present in the Name Server data base. Set this mode only if the switch <code>N_Port</code> discovery process (PLOGI, PRLI, INQUIRY) causes an attached device to fail.
VC Encoded Address Mode	When this mode is set, frame source and destination address utilize an address format compatible with some first-generation switches. Set this mode only if the fabric includes this type of switch.
Disable Translative Mode	The setting applies only if VC Encoded Address Mode is also set. This feature, when set, disables translative addressing to achieve explicit address compatibility with some first-generation switches. Set this feature only if hardware or software systems are attached to the fabric that explicitly rely on a specific frame address format.
Per-frame Route Priority	In addition to the eight virtual channels used in frame routing priority, support is also available for per-frame based prioritization when this value is set. When set, the virtual channel ID is used in conjunction with a frame header to form the final virtual channel ID.

System Services Settings

There are two fields that are used to specify the system service settings.

Table 1-1 System Service Settings

Field	Type	Default	Range
<code>rstatd</code>	Boolean	Off	On/Off
<code>rusersd</code>	Boolean	Off	On/Off

This section provides a description of the system service setting fields:

<code>rstatd</code>	<p>Dynamically enables or disables a server that returns information about system operation information through remote procedure calls (RPC). The protocol provides for a wide-range of system statistics; however, only ethernet interface statistics (see <code>ifShow</code>) and system up time (see <code>uptime</code>) are supported.</p> <p>The retrieval of this information is supported by a number of operating systems which support RPC. On most UNIX-based systems (HP-UX, Irix, Linux, Solaris, etc.) the commands to retrieve the information are <code>rup</code> and <code>rsysinfo</code>. See your local system documentation for the appropriate usage of these or equivalent commands.</p>
<code>rusersd</code>	<p>Dynamically enables or disables a server that returns information about the user logged into the system through remote procedure calls (RPC). The information returned includes user login name, the system name, login protocol or type, login time, idle time, and remote login location (if applicable).</p> <p>The retrieval of this information is supported by a number of operating systems which support RPC. On most UNIX-based systems (HP-UX, Irix, Linux, Solaris, etc.) the command to retrieve the information is <code>rusers</code>. See your local system documentation for the appropriate usage of this or equivalent command.</p>

Virtual Channel Settings

The switch provides you the ability to tune it in a specific application, by configuring the parameters for its eight virtual channels. Note that the first two virtual channels are reserved for switch internal functions and are not user-configurable.

The default virtual channel settings have already been optimized for switch performance. Changing the default values can improve switch performance, but it can also degrade performance. Do not change these settings without fully understanding the effects of the changes.

Table 1-2 Virtual Channel Settings

Field	Type	Default	Range
VC Link Control	Number	0	0 to 1
VC Class 2	Number	2	2 to 5
VC Class 3	Number	3	2 to 5
VC Multicast	Number	7	6 to 7
VC Priority 2	Number	2	2 to 3
VC Priority 3	Number	2	2 to 3
VC Priority 4	Number	2	2 to 3
VC Priority 5	Number	2	2 to 3
VC Priority 6	Number	3	2 to 3
VC Priority 7	Number	3	2 to 3

Descriptions of the Virtual Channel Setting fields are as follows:

VC Link Control Specifies the virtual channel used for `N_Port`-generated, Class 2 link control frames (ACKs, `P_BSYs`, `P_RJT`s). Forces `N_Port`-generated link control frames to be sent using a Class 2 data Virtual Channel when set to 0. When set to 1, the control frames are sent using a Virtual Channel normally reserved for Fabric-internal traffic. This setting is configurable only when VC Encoded Address Mode is set.

VC Class 2 Specifies the Virtual Channel used for class 2 frame traffic. This setting is configurable only when VC Encoded Address Mode is set.

VC Class 3 Specifies the Virtual Channel used for class 3 frame traffic. This setting is configurable only when VC Encoded Address Mode is set.

VC Multicast Specifies the Virtual Channel used for multicast frame traffic. This setting is configurable only when VC Encoded Address Mode is set.

VC Priority Specifies the class of frame traffic given priority for a Virtual Channel.

Operands None.

Example To set the system configuration variables for a switch:

```
switch:admin> configure
Configure...
Fabric parameters (yes, y, no, n): [no] yes
Domain: (1..239) [1]
BB credit: (1..16) [16]
R_A_TOV: (4000..120000) [10000]
E_D_TOV: (1000..5000) [2000] 5000
Data field size: (256..2112) [2112]
Non-SCSI Tachyon Mode: (0..1) [0] 1
Disable Device Probing: (0..1) [0]
VC Encoded Address Mode: (0..1) [0] 1
Disable Translative Mode: (0..1) [0]
Per-frame Route Priority: (0..1) [0]
Virtual Channel parameters (yes, y, no, n): [no] yes
VC Link Control: (0..1) [0]
VC Class 2: (2..5) [2]
VC Class 3: (2..5) [3]
VC Multicast: (6..7) [7]
VC Priority 2: (2..3) [2]
VC Priority 3: (2..3) [2]
VC Priority 4: (2..3) [2]
VC Priority 5: (2..3) [2]
VC Priority 6: (2..3) [3]
VC Priority 7: (2..3) [3]
Arbitrated Loop parameters (yes, y, no, n): [no] yes
Send FAN frames?: (0..1) [1]
Always send RSCN?: (0..1) [0]
System services (yes, y, no, n): [no] yes
rstatd (on, off): [off] on
rusersd (on, off): [off] on
Committing configuration...done.
```

See Also agtcfgDefault
agtcfgSet
agtcfgShow
configDefault
configShow
ifShow
ipAddrSet
switchDisable
switchEnable
syslogdIp
uptime

crossPortTest

Functional test of port M->N path.

Synopsis `crossPortTest [passCount, singlePortAlso]`

Availability admin

Description Use this command to verify the functional operation of the switch. This command verifies operation by sending frames from port M's transmitter and looping the frames back through an external fiber cable into another port N's receiver. This exercises all the switch components from the main board to the GBIC, from the GBIC to the fiber cable, from the fiber cable to the GBIC, and from the GBIC back to the main board.

The cables can be connected to any port combination as long as the cables and GBICs connected are of the same technology - a short wavelength GBIC port is connected to another short wavelength GBIC port using a short wavelength cable, a long wavelength port is connected to a long wavelength port, and a copper port is connected to a copper port.

For complete testing, ports connected should be from different ASICs. Ports 0-3 are assigned to ASIC 0, ports 4-7 are assigned to ASIC 1, etc. A connection from port 0 to port 15 exercises the transmit path between ASICs. A connection from port 0 to port 3 tests only the internal transmit path in ASIC 0.

Only one frame is transmitted and received at a given time and the port LEDs flicker green while the test is running.

The test method is as follows:

1. Determine port connections.
2. Enable ports for cabled loopback mode.
3. Create a frame F with a maximum data size (2112 bytes).
4. Transmit frame F through port M.
5. Pick up the frame from its cross connected port N. Complain if port other than N actually received the frame.
6. Check the 8 statistic error counters for nonzero values:


```
ENC_in, CRC_err, TruncFrm, FrmTooLong, BadEOF, Enc_out,
BadOrdSet, DiscC3
```
7. Check the transmit, receive or class 3 receiver counters to see if they are stuck at some value.
8. Check that the number of frames received is equal to the number of frames transmitted.
9. Repeat steps 3 through 8 for all ports present until the number of frames (or `passCount`) requested is reached or all ports are marked bad.

At each pass, the frame is created from a different data type. If seven passes are requested, seven different data types are used in the test. If eight passes are requested, the first seven frames use unique data types, and the eighth is the same as the first. The seven data types are:

1. CSPAT: 0x7e, 0x7e, 0x7e, 0x7e, ...
2. BYTE_LFSR: 0x69, 0x01, 0x02, 0x05, ...
3. CHALF_SQ: 0x4a, 0x4a, 0x4a, 0x4a, ...

4. QUAD_NOT: 0x00, 0xff, 0x00, 0xff, ...
5. CQTR_SQ: 0x78, 0x78, 0x78, 0x78, ...
6. CRPAT: 0xbc, 0xbc, 0x23, 0x47, ...
7. RANDOM: 0x25, 0x7f, 0x6e, 0x9a, ...

One of three following modes can be activated; the test produces different results for each mode:

- switchEnable/switchDisable mode
- singlePortAlso mode
- GBIC mode

switchEnable switchDisable Mode

This mode can be run in one of two states, ONLINE or OFFLINE.

In the ONLINE state, the switch is enabled prior to executing the test. In this state, only ports that are cable loopbacked to ports from the same switch are tested. Ports connected outside of the switch are ignored.

To run, at least one port (if `singlePortAlso` is active) or two ports (if `singlePortAlso` is not active) must be cable loopbacked to each other. If this criteria is not met, the message below is sent to the telnet shell:

```
Need at least one port(s) connected to run this test
(singlePortAlso active)
```

or:

```
Need at least two port(s) cross-connected to run this test
(singlePortAlso not active)
```

The following message appears in the front panel display:

```
Need at least one port(s)
connected first
(singlePortAlso active)
```

or:

```
Need at least two port(s)
cross-connected first.
(singlePortAlso not active)
```

In the OFFLINE state, the switch is disabled prior to executing the test. In this state, it is assumed that all ports (see GBIC mode) are cable loopbacked to similar ports in the same switch. If one or more ports are not connected, the test aborts.

The test determines which port is connected to which port transmitting frames. If any ports are not properly connected (improperly seated GBICs or cables, bad GBICs or cables, or improper connection of SWL to LWL, etc.), the message below is sent to the telnet shell:

```
One or more ports is not active, please double check fibres on
all ports.
```

The following message displays on the front panel:

```
One or more ports not cabled.
```

singlePortAlso Mode

Specify `singlePortAlso` mode by executing `crossPortTest` with a value of 1 for the second argument:

```
switch:admin> crossPortTest 0, 1
```

In this mode, a port can be cable loopbacked to itself (port M is connected to port M) in addition to being cross connected (port M is connected to port N). This mode can be used to isolate improperly functioning ports.

GBIC Mode

Activate GBIC mode by executing the following command prior to executing `crossPortTest`:

```
switch:admin> setGbicMode 1
```

When activated, only ports with GBICs present are tested by `crossPortTest`. For example, if only port 0 and port 3 contain GBICs, `crossPortTest` limits testing to port 0 and port 3.

The state of GBIC mode is saved in flash memory and it remains active (even after reboots or power cycles) until it is disabled as follows:

```
switch:admin> setGbicMode 0
```

For example, disable the switch, set the GBIC mode to 1, and execute `crossPortTest` with `singlePortAlso` activated and the `crossPortTest` to limit testing to:

```
only ports containing GBICs
that _all_ GBIC ports that are cable loopbacked
ports connected to themselves (single port connections)
```

Because this test includes the GBIC and the fiber cable in the test path, use the results from this test, in conjunction with the results from the `portLoopbackTest` and the `spinSilk` test to determine those switch components that are not functioning properly.

Operands

This command has the following operands:

`passCount` Specify the number of times (or number of frames per port) to execute this test. If omitted, the default value is 0xffffffffe.

`singlePortAlso` Specify 1 to connect port N to itself (port N->N).

Example To execute a functional test of port M->N path 100 times:

```
switch:admin> crossPortTest 100
Running Cross Port Test .....
One moment please ...
switchName:      switch
switchType:      2.2
switchState:     Testing
switchRole:      Disabled
switchDomain:    1 (unconfirmed)
switchId:        fffc01
switchWwn:       10:00:00:60:69:00:73:71
port 0: cu      Testing   Loopback->15
port 1: sw      Testing   Loopback->11
port 2: sw      Testing   Loopback->6
port 3: lw      Testing   Loopback->4
port 4: lw      Testing   Loopback->3
port 5: sw      Testing   Loopback->8
port 6: sw      Testing   Loopback->2
port 7: sw      Testing   Loopback->12
port 8: sw      Testing   Loopback->5
port 9: sw      Testing   Loopback->14
port 10: sw     Testing   Loopback->13
port 11: sw     Testing   Loopback->1
port 12: sw     Testing   Loopback->7
port 13: sw     Testing   Loopback->10
port 14: sw     Testing   Loopback->9
port 15: cu     Testing   Loopback->0
passed.
```

Errors Below are possible error messages if failures are detected:

```
DIAG-INIT
DIAG-PORTDIED
DIAG-XMIT
DIAG-TIMEOUT
DIAG-ERRSTAT
DIAG-STATS
DIAG-PORTWRONG
DIAG-DATA
```

See Also

- camTest
- portLoopbackTest
- portRegTest
- ramTest
- spinSilk
- sramRetentionTest

date

Display or set system date and time.

Synopsis date ["newDate"]

Availability All users (display)
 admin (set)

Description Use this command with no operands to display date and time. Use the `newdate` operand to set the date and time. Date and time are specified as a quoted string in the format:

`"mmd dhmm yy"`

where:

`mm` is the month, valid values are 01-12

`dd` is the date, valid values are 01-31

`hh` is the hour, valid values are 00-23

`mm` is minutes, valid values are 00-59

`yy` is the year, valid values are 00-99

Year values greater than 69 are interpreted as 1970-1999, year values less than 70 are interpreted as 2000-2069.

The date function does not support daylight saving time or time zones.

All switches maintain current date and time in non-volatile memory. Date and time are used for logging events. Switch operation does not depend on the date and time; a switch with an incorrect date value still functions properly.

Operands This command has the following operand:

`newDate` Specify the new date and time in quotation marks. This operand is optional.

Example To display the current date and time, then change it to Feb 27 12:30:00 2001:

```
switch:admin> date
Fri Jan 29 17:01:48 1999
switch:admin> date "0227123001"
Thu Feb 27 12:30:00 2001
```

See Also errLogShow
 portLogShow
 uptime

diagClearError

Clear the `diag` software flag to allow for retest.

Synopsis `diagClearError [port]`

Availability `admin`

Description Use this command to clear the `diag` software flag that indicates whether a port is BAD or OK. The current flag settings are displayed by using the `diagShow` command. This command resets the flag to allow the bad port to be retested; otherwise the test skips the port.

This command does not clear the error log entry. Instead, it generates the `DIAG-CLEAR_ERR` message for each port software flag cleared. For example:

```
0x10f9d560 (tShell): Apr  9 08:35:50
      Error DIAG-CLEAR_ERR, 3,
Pt13 (Lm3) Diagnostics Error Cleared
Err# 0001
```

Operands This command has the following operand:

`port` Specify the port where you want to reset the `diag` software flag. The default (if no operand is specified) is to clear all bad port flags. This operand is optional.

Example To clear the **diag** software flag:

```
switch:admin> diagClearError
0x10f9d5e0 (tShell): Apr  6 13:25:36
      Error DIAG-CLEAR_ERR, 3,
Pt7 (Lm1) Diagnostics Error Cleared
Err# 0001
```

See Also `diagShow`

diagDisablePost

Disable POST execution at reboot.

Synopsis `diagDisablePost`

Availability `admin`

Description Use this command to disable Power On Self Test (POST) execution at switch reboot. This mode is saved in flash memory and POST remains disabled until it is enabled using the `diagEnablePost` command.

A switch rebooted without POST enabled issues a DIAG-POSTSKIPPED error message:

```
0x10fc0c10 (tSwitch): Apr  6 13:24:42
Error DIAG-POST_SKIPPED, 3,
Skipped POST tests: assuming all ports are healthy,
Err# 0004
```

POST includes the following tests:

- `ramTest` - Bit write / read test of SDRAMs in the switch.
- `portRegTest` - Bit write / read test of the ASIC SRAMs and registers.
- `centralMemoryTest` - Bit write / read test of the ASIC central memory.
- `cmiTest` - ASIC to ASIC connection test of the CMI bus.
- `camTest` - Functional test of the CAM memory.
- `portLoopbackTest` - Functional test of switch by sending and receiving frames from the same port.

For more information about these tests, refer to the individual command descriptions.

Note: The cold boot (power reset) runs the long `ramTest` while the warm boot (software reset) runs the short `ramTest`.

Operands None.

Example To disable the POST during future power ups:

```
switch:admin> diagDisablePost
Committing configuration...done.
On next reboot, POST will be skipped.
```

See Also `diagEnablePost`

diagEnablePost

Enable POST execution at next reboot.

Synopsis `diagEnablePost`

Availability `admin`

Description Use this command to enable Power On Self Test (POST) execution at the next switch reboot. This mode is saved in flash memory and POST remains enabled until it is disabled using the `diagDisablePost` command.

POST includes the following tests:

- `ramTest` - Bit write / read test of SDRAMs in the switch.
- `portRegTest` - Bit write / read test of the ASIC SRAMs and registers.
- `centralMemoryTest` - Bit write / read test of the ASIC central memory.
- `cmiTest` - ASIC to ASIC connection test of the CMI bus.
- `camTest` - Functional test of the CAM memory.
- `portLoopbackTest` - Functional test of switch by sending and receiving frames from the same port.

For more information about these tests, refer to the individual command descriptions.

Note: The cold boot (power reset) runs the long `ramTest` while the warm boot (software reset) runs the short `ramTest`.

Operands `None`.

Example To enable the POST during future power ups:

```
switch:admin> diagEnablePost  
Committing configuration...done.  
On next reboot, POST will be executed.
```

See Also

- camTest
- centralMemoryTest
- cmiTest
- diagDisablePost
- portLoopbackTest
- portRegTest
- ramTest

diagHelp

Display available diagnostic help commands.

Synopsis diagHelp

Availability All users

Description Use this command to display a list of the diagnostic help commands for troubleshooting switch problems.

Operands None.

Example To display diagnostic help commands:

```
switch:admin> diaghhelp

ramTest           System DRAM diagnostic
portRegTest       Port register diagnostic
centralMemoryTest Central memory diagnostic
cmiTest           CMI bus connection diagnostic
camTest           Quickloop CAM diagnostic
portLoopbackTest Port internal loopback diagnostic
sramRetentionTest SRAM Data Retention diagnostic
cmemRetentionTest Central Mem Data Retention diagnostic
crossPortTest     Cross-connected port diagnostic
spinSilk          Cross-connected line-speed exerciser
diagClearError    Clear diag error on specified port
diagDisablePost   Disable Power-On-Self-Test
diagEnablePost    Enable Power-On-Self-Test
setGbicMode       Enable tests only on ports with GBICs
setSplbMode       Enable 0=Dual, 1=Single port LB mode
supportShow       Print version, error, portLog, etc.
diagShow          Print diagnostic status information
parityCheck       Dram Parity 0=Disabled, 1=Enabl

switch:admin>
```

diagShow

Print diagnostic results since the last boot.

Synopsis `diagShow [nSeconds]`

Availability All users

Description Use this command to print the following information generated since the last switch reboot:

- State of all ports in the switch resulting from diagnostics run since the last reboot. Ports that passed diagnostic testing are marked OK. Ports that failed one or more diagnostic tests are marked BAD.
- Current state of ports. Active ports are UP and inactive ports are DN.
- Frame counts for active ports - the number of frames transmitted is `frTx` and the number of frames received is `frRx`.

The “LLI_errs” is the total of the port's 8 statistic error counters: `ENC_in`, `CRC_err`, `TruncFrm`, `FrmTooLong`, `BadEOF`, `Enc_out`, `BadOrdSet`, `DiscC3`.

- State of central memory based on the results of diagnostics run since the last reboot. OK if previous `centralMemoryTest` executions passed; FAULTY if the switch failed `centralMemoryTest`.
- Total diagnostic frames transmitted and received since last reboot.

The totals represent the cumulative number of frames transmitted and received by the diagnostic functional tests (`portLoopbackTest`, `crossPortTest`, or `spinSilk` for the transmitted count only) for all ports since the last reboot. (If the switch is rebooted with POST disabled, `diagShow` indicates the total as 0.)

The transmitted and received values may not always be the same; for example, they are not be the same if an error occurred in one of the ports during one of the tests above.

This command may also be executed by using the `s` (Stats) option of the QCSL diag prompt which is generated when a diagnostic test is keyboard interrupted.

It can also be looped by specifying the `nseconds` operand. This operand enables you to specify a repeat interval for this command. If a repeat interval is specified the command continues to execute until interrupted. For example `diagShow 4` executes `diagShow` every four seconds unless stopped by a keyboard interrupt.

Also use this command to isolate a bad GBIC. A changing “LLI_errs” value prefixed by “***” indicates a port is continuing to detect errors.

Operands This command has the following operand:

`nSeconds` Specify the repeat interval (in seconds) between executions of `diagShow`. If a repeat interval is specified the command continues to execute until interrupted. If this operand is not used the default is to print the information once. Valid values are from 1 to $2^{**}32$. This operand is optional.

Example To print the diagnostic results since the last boot.

```
switch:admin> diagShow

Diagnostics Status:  Wed Apr 5 03:09:20 2000

port#:   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15
diags:  OK  OK  OK  OK  OK  OK  OK  OK  OK  OK  OK  OK  OK  OK  OK  OK
state:  UP  UP  UP  UP  UP  UP  UP  UP  UP  UP  UP  UP  UP  UP  UP  UP

lm0:      100 frTx      100 frRx      0 LLI_errs. <looped-15>
lm1:      100 frTx      100 frRx      0 LLI_errs. <looped-11>
lm2:      100 frTx      100 frRx      0 LLI_errs. <looped-6>
lm3:      100 frTx      100 frRx      0 LLI_errs. <looped-4>
lm4:      100 frTx      100 frRx      0 LLI_errs. <looped-3>
lm5:      100 frTx      100 frRx      0 LLI_errs. <looped-8>
lm6:      100 frTx      100 frRx      0 LLI_errs. <looped-2>
lm7:      100 frTx      100 frRx      0 LLI_errs. <looped-12>
lm8:      100 frTx      100 frRx      0 LLI_errs. <looped-5>
lm9:      100 frTx      100 frRx      0 LLI_errs. <looped-14>
lm10:     100 frTx      100 frR       0 LLI_errs. <looped-13>
lm11:     100 frTx      100 frRx      0 LLI_errs. <looped-1>
lm12:     100 frTx      100 frR       0 LLI_errs. <looped-7>
lm13:     100 frTx      100 frRx      0 LLI_errs. <looped-10>
lm14:     100 frTx      100 frRx      0 LLI_errs. <looped-9>
lm15:     100 frTx      100 frRx      0 LLI_errs. <looped-0>

Central Memory OK
Total Diag Frames Tx: 131696
Total Diag Frames Rx: 136112
```

See Also `diagClearError`

dlsReset

Turn off dynamic load sharing option.

Synopsis dlsReset

Availability admin

Description Use this command to disable dynamic load sharing when a fabric change occurs. See `dlsSet` for a full description of load sharing.

Use this command only if devices connected to the fabric cannot handle occasional routing changes.

Operands None.

Examples To disable the dynamic load sharing option.

```
switch:admin> dlsReset
Committing configuration...done.
switch:admin> dlsShow
DLS is not set
```

See Also `dlsSet`

`dlsShow`

dlsSet

Turn on dynamic load sharing option.

Synopsis dlsSet

Availability admin

Description Use this command to enable dynamic load sharing when a fabric change occurs.

Routing is done on a per source port basis. This means that all the traffic coming in from a port (either E_Port or Fx_Port) directed to the same remote domain is routed through the same output E_Port.

To optimize fabric utilization, when there are multiple equivalent paths to a remote switch, traffic is shared among all the paths. Load sharing takes place when a switch reboots. In addition, if dynamic load sharing is enabled, the optimal load sharing is recomputed every time a change in the fabric occurs. A change in the fabric is defined as an E_Port going up or down, or an Nx_Port going up or down.

If dynamic load sharing is turned off, load sharing is performed only at boot time or when an Nx_Port comes up. Optimal load sharing is rarely achieved with this setting.

Dynamic load sharing is on by default.

When dynamic load sharing is set, routing changes can affect working ports. For example, if an Fx_Port goes down, another Fx_Port may be rerouted from one E_Port to a different E_Port. The switch minimizes the number of routing changes, but some are necessary in order to achieve optimal load sharing. These changes can affect the application, especially if the 'in-order delivery' option is set. With the in-order delivery option (see `iodSet`), routes are not available for a few seconds after a fabric change. In addition, some frame loss may occur. No frame loss occurs if in-order delivery is off, but there is still a short period of time when traffic is not forwarded. This period of time is significantly shorter than when in-order delivery is on, and is usually less than 1 second.

Operands None.

Examples To enable the dynamic load sharing option.

```
switch:admin> dlsSet
Committing configuration...done.
switch:admin> dlsShow
DLS is set
```

See Also dlsReset

dlsShow

dlsShow

Display the state of the Dynamic Load Sharing option.

Synopsis dlsShow

Availability All users

Description Use this command to display whether Dynamic Load Sharing is on or off.

Operands None.

Example To display the current dynamic load sharing option setting:

```
switch:admin> dlsShow
DLS is set
```

See Also dlsSet
dlsReset

errDisplayFilter

Display or set the level of error filtering.

Synopsis `errDisplayFilter [level]`

Availability This command can only be used on switches with a front panel display:
All users (display)
admin (set)

Description Use this command to display or set the error levels that are displayed on the front panel. Errors with a higher level (lower severity) than the value specified are stored in the error log but are not displayed on the front panel.

When the command is used with no operand, the current level is displayed.

When the command is used with the `level` operand, a new filtering level is set.

Operands This command has the following operand:

`level` Specify the new error filtering level. Valid values are:
1 = critical
2 = error
3 = warning
4 = information
5 = debug
Only error levels equal or lower (equal or more severe) than the specified value are displayed. This operand is optional.

Example To display the current filter level, then change it to 3:

```
switch:admin> errDisplayFilter
All errors will be reported on the front panel.
switch:admin> errDisplayFilter 3
Committing configuration...done.
```

Note: This example specifies that only errors of severity 1 through 3 are displayed.

See Also `errLogShow`

errDump

Display the error log without page breaks.

Synopsis errDump

Availability All users

Description Use this command to display the error log without page breaks. This command displays the same information as errShow, but errShow enables you to scroll through the entries using the Enter button.

See errShow for a description of the error log.

Operands None.

Example To display the error log without page breaks:

```
switch:admin> errDump
Error 02
-----
0x103e9500 (tSwitch): Feb  5 16:59:09
      Error DIAG-TIMEOUT, 1, portLoopbackTest: pass 1,
      Port 1 receive timeout.
Error 01
-----
0x103e9500 (tSwitch): Feb  5 16:42:39
      Error SYS-BOOT, 3, Restart reason: Reboot
```

See Also errShow

uptime

errShow

Scroll through the error log.

Synopsis `errShow`

Availability All users

Description Use this command to display the error log. This command enables you to scroll through the entries using the Enter key. Use `errDump` to display the same information without line breaks.

Each entry in the log follows the format below:

```
Error Number
-----
taskId (taskName): Time Stamp (count)
Error Type, Error Level, Error Message
Diag Err#
```

where:

Error Number	Beginning at one. If the number of errors exceeds the size of the log, the most recent errors are shown.
Task ID (Task Name)	The ID and name of the task recording the error.
Time Stamp	The date and time of the first occurrence of the error.
Error Count	For errors that occur multiple times, the repeat count is shown in parenthesis. The maximum count is 999.
Error Type	An upper case string showing the firmware module and error type. The switch manual contains a detailed explanation of error types.
Error Level	0 = panic (the switch reboots) 1 = critical 2 = error 3 = warning 4 = information 5 = debug
Error Message	Additional information about the error.
Diag Err#	The number of the error. This is a hexadecimal 4-digit code representing the error type.

Diagnostic Error Codes

The following table lists the error numbers, the POST test that generates this error number, and the type of error.

Table 1-3 Diagnostic Error Codes

Error Number	Test	Error Type
0001	n/a	DIAG-CLEAR_ERR
0002	n/a	DIAG-BURNIN_START
0003	n/a	DIAG-BURNIN_STOP
0004	n/a	DIAG-POST_SKIPPED
0110	ramTest	DIAG-MEMORY
0111	ramTest	DIAG-MEMSZ
0112	ramTest	DIAG-MEMNULL
040F	portRegTest	DIAG-BUS_TIMEOUT
0415	portRegTest	DIAG-REGERR
0416	portRegTest	DIAG-REGERR_UNRST
0B0F	sramRetentionTest	DIAG-BUS_TIMEOUT
0B15	sramRetentionTest	DIAG-REGERR
0B16	sramRetentionTest	DIAG-REGERR_UNRST
1020	centralMemoryTest	DIAG-CMBISRTO
1021	centralMemoryTest	DIAG-CMBISRF
1025	centralMemoryTest	DIAG-LCMRS
1026	centralMemoryTest	DIAG-LCMTO
1027	centralMemoryTest	DIAG-LCMEM
1028	centralMemoryTest	DIAG-LCMEMT
1029	centralMemoryTest	DIAG-CMNOBUF
102A	centralMemoryTest	DIAG-CMERRTYPE
102B	centralMemoryTest	DIAG-CMERRPTN
102C	centralMemoryTest	DIAG-INTNOTCLR
1030	centralMemoryTest	DIAG-BADINT
106F	centralMemoryTest	DIAG-TIMEOUT
1F25	cmemRetentionTest	DIAG-LCMRS
1F26	cmemRetentionTest	DIAG-LCMTO
1F27	cmemRetentionTest	DIAG-LCMEM
2030	cmiTest	DIAG-BADINT
2031	cmiTest	DIAG-INTNIL

Table 1-3 Diagnostic Error Codes (Continued)

Error Number	Test	Error Type
2032	cmiTest	DIAG-CMISA1
2033	cmiTest	DIAG-CMINOCAP
2034	cmiTest	DIAG-CMIINVCAP
2035	cmiTest	DIAG-CMIDATA
2036	cmiTest	DIAG-CMICKSUM
223B	camTest	DIAG-CAMINIT
223C	camTest	DIAG-CAMSID
2271	camTest	DIAG-XMIT
2640	portLoopbackTest	DIAG-ERRSTAT (ENCIN)
2641	portLoopbackTest	DIAG-ERRSTAT (CRC)
2642	portLoopbackTest	DIAG-ERRSTAT (TRUNC)
2643	portLoopbackTest	DIAG-ERRSTAT (2LONG)
2644	portLoopbackTest	DIAG-ERRSTAT (BADEOF)
2645	portLoopbackTest	DIAG-ERRSTAT (ENCOUT)
2646	portLoopbackTest	DIAG-ERRSTAT (BADORD)
2647	portLoopbackTest	DIAG-ERRSTAT (DISCC3)
264F	portLoopbackTest	DIAG-INIT
265F	portLoopbackTest	DIAG-PORTDIED
2660	portLoopbackTest	DIAG-STATS (FTX)
2661	portLoopbackTest	DIAG-STATS (FRX)
2662	portLoopbackTest	DIAG-STATS (C3FRX)
266E	portLoopbackTest	DIAG-DATA
266F	portLoopbackTest	DIAG-TIMEOUT
2670	portLoopbackTest	DIAG-PORTABSENT
2671	portLoopbackTest	DIAG-XMIT
3040	crossPortTest	DIAG-ERRSTAT (ENCIN)
3041	crossPortTest	DIAG-ERRSTAT (CRC)
3042	crossPortTest	DIAG-ERRSTAT (TRUNC)
3043	crossPortTest	DIAG-ERRSTAT (2LONG)
3044	crossPortTest	DIAG-ERRSTAT (BADEOF)
3045	crossPortTest	DIAG-ERRSTAT (ENCOUT)
3046	crossPortTest	DIAG-ERRSTAT (BADORD)
3047	crossPortTest	DIAG-ERRSTAT (DISCC3)

Table 1-3 Diagnostic Error Codes (Continued)

Error Number	Test	Error Type
304F	crossPortTest	DIAG-INIT
305F	crossPortTest	DIAG-PORTDIED
3060	crossPortTest	DIAG-STATS (FTX)
3061	crossPortTest	DIAG-STATS (FRX)
3062	crossPortTest	DIAG-STATS (C3FRX)
306E	crossPortTest	DIAG-DATA
306F	crossPortTest	DIAG-TIMEOUT
3070	crossPortTest	DIAG-PORTABSENT
3071	crossPortTest	DIAG-XMIT
3078	crossPortTest	DIAG-PORTWRONG
3840	spinSilk	DIAG-ERRSTAT (ENCIN)
3841	spinSilk	DIAG-ERRSTAT (CRC)
3842	spinSilk	DIAG-ERRSTAT (TRUNC)
3843	spinSilk	DIAG-ERRSTAT (2LONG)
3844	spinSilk	DIAG-ERRSTAT (BADEOF)
3845	spinSilk	DIAG-ERRSTAT (ENCOUT)
3846	spinSilk	DIAG-ERRSTAT (BADORD)
3847	spinSilk	DIAG-ERRSTAT (DISCC3)
384F	spinSilk	DIAG-INIT
385F	spinSilk	DIAG-PORTDIED
3870	spinSilk	DIAG-PORTABSENT
3871	spinSilk	DIAG-XMIT
3874	spinSilk	DIAG-PORTSTOPPED

Operands None.

Example The following illustrates a log with two entries. The first entry is the most recent; it is a diagnostic failure. The second entry is the oldest; it displays the switch restart reason.

```
switch:admin> errShow
Error 02
-----
0x10fbd880 (tSwitch): Feb 5 17:03:19
      Error DIAG-POST_SKIPPED, 3,
Skipped POST tests: assuming all ports are healthy,
Err# 0004

Type <CR> to continue, Q<CR> to stop:
Error 01
-----
0x103e9500 (tSwitch): Feb 5 16:58:39
      Error SYS-BOOT, 3, Restart reason: Reboot
```

See Also `errDump`
`firmwareDownload`
`reboot`
`uptime`

fabricShow

Displays fabric membership information.

Synopsis `fabricShow`

Availability All users

Description Use this command to display information about switches and multicast alias groups in the fabric. Multicast alias groups are created on demand by request from `N_Ports` attached to the alias server; typically no groups are listed.

If the switch is initializing, or disabled, the message “no fabric” is displayed. If the fabric is reconfiguring, some or all switches may not be shown. Otherwise, the following fields are shown:

Table 1-4 fabricShow display fields

Field	Description
Switch ID	The switch <code>Domain_ID</code> and embedded port <code>D_ID</code> .
Worldwide Name	The switch worldwide name.
Enet IP Addr	The switch ethernet IP address.
FC IP Addr	The switch FC IP address.
Name	The switch symbolic name (“>” indicates the principal switch).

If multicast alias groups exist, the following fields are shown:

Table 1-5 fabricShow Multicast Alias display fields

Field	Description
Group ID	The alias group number and <code>D_ID</code> .
Token	The alias group token (assigned by the <code>N_Port</code>).

Operands None.

Example The following example shows a fabric of four switches. “sw180” is the principal switch. Three of the switches are configured to run IP over fibre channel. There is one multicast alias group.

```
switch:admin> fabricShow
Switch ID      Worldwide Name          Enet IP Addr    FC IP Addr      Name
-----
0: fffc40 10:00:00:60:69:00:06:56 192.168.64.59   192.168.65.59   "sw5"
1: fffc41 10:00:00:60:69:00:02:0b 192.168.64.180  192.168.65.180  "sw180"
2: fffc42 10:00:00:60:69:00:05:91 192.168.64.60   192.168.65.60   "sw60"
3: fffc43 10:00:00:60:69:10:60:1f 192.168.64.187  0.0.0.0          "sw187"
The Fabric has 4 switches

Group ID      Token
-----
0: fffb01 40:05:00:00:10:00:00:60:69:00:00:15
```

See Also switchShow

fanShow

Display fan status.

Synopsis fanShow

Availability All users

Description Use this command to displays the current status of the switch fans. The format of the display varies according to the switch model and number of fans. Some switch models show fan speed measured in RPM.

Fan status is shown as:

OK Fan is functioning correctly.

absent Fan is not present.

below minimum Fan is present but rotating too slowly or stopped.

Operand None.

Example To display the status and RPMs for the fans:

```
switch:admin> fanShow
Fan #1 is OK, speed is 7860 RPM
Fan #2 is OK, speed is 7920 RPM
Fan #3 is OK, speed is 7890 RPM
Fan #4 is OK, speed is 7950 RPM
Fan #5 is OK, speed is 7800 RPM
Fan #6 is OK, speed is 8070 RPM
switch:admin>
```

See Also psShow
tempShow

fastboot

Reboot the switch, bypassing POST.

Synopsis fastboot

Availability admin

Description Use this command to reboot the switch, bypassing POST. The reboot takes effect immediately as the switch resets and executes normal power-on booting sequence. However, Power On Self Test (POST) is skipped. This reduces boot time significantly.

If POST has been disabled using the `diagDisablePost` command, then `fastboot` is the same as `reboot`. However, `fastboot` skips POST on the current reboot, while `diagDisablePost` skips POST on all future reboots until cancelled by `diagEnablePost`.

While the switch is rebooting, the telnet session is closed and all fibre channel ports are inactive. If the switch is part of a fabric, the remaining switches reconfigure.

Operands None.

Example To reboot the switch, bypassing the POST:

```
switch:admin> fastboot
Rebooting...
```

See Also `diagDisablePost`
`diagEnablePost`
`reboot`

firmwareDownload

Download a switch firmware file from a host.

Synopsis `firmwareDownload ["host","user","file" [, "passwd"]]`

Availability admin

Description Use this command to download a switch firmware file from a host into the switch flash memory.

The download process uses either FTP (File Transfer Protocol) or the RSHD protocol (TCP service 514). Both of these services are widely available on Unix hosts, but less so on Windows hosts.

On Windows NT, the FTP server may have to be installed from the distribution media and enabled, or on Windows NT or Windows 9x there are several good freeware and shareware FTP servers available. To use RSHD on Windows NT or 9x, two utilities are supplied with the firmware file, RSHD.EXE and CAT.EXE, together with instructions on how to install and run them. The FTP server or RSHD must be running before a firmware download can occur.

If this command is invoked without operands, you are prompted for input, including the choice of FTP or RSHD. If it is invoked with three operands, RSHD is used; the addition of the fourth operand (password) selects FTP.

Once the download begins, numbers are displayed (size of .text, .data, and .bss sections, and the file checksum) followed by status lines indicating download progress. This display varies depending on switch model, but all displays print a period "." per page of firmware read or written.

After a download successfully completes, the switch must be rebooted to activate the new firmware.

You can also download firmware through the switch's World Wide Web interface.

Operands This command has the following operands:

<code>host</code>	Specify a host name or IP address in quotation marks; for example, "citadel" or "192.168.1.48". The configuration file is downloaded from this host system. This operand is optional.
<code>user</code>	Specify a user name in quotation marks; for example, "jdoe". This user name is used to gain access to the host. This operand is optional.
<code>file</code>	Specify a file name in quotation marks; for example, "firmware.txt". Absolute path names may be specified using forward slash (/). Relative path names create the file in the user's home directory on UNIX hosts, and in the directory where the FTP server is running on Windows hosts. This operand is optional.
<code>passwd</code>	Specify a password in quotation marks. If present, the command uses FTP to transfer the file. This operand is optional.

Example To download a firmware file:

```
switch:admin> firmwareDownload "citadel","jdoe","/home/firmware/v2.2"
55696+6984+133172, csum 7eca
writing flash 0 .....
writing flash 1 .....
download complete
```

Errors The following can cause the download to fail:

- The host name is not known to the switch
- The host IP address cannot be contacted
- The user does not have permission on the host
- The user runs a script that prints something at login
- The path to the firmware may be case sensitive
- The file does not exist on the host
- The file is not a switch firmware file
- The file is corrupted
- The RSHD or FTP server is not running on the host

See Also reboot
version

fspfShow

Display FSPF protocol information.

Synopsis fspfShow

Availability All users

Description Use this command to display the Fibre Channel Shortest Path First (FSPF) protocol information, and internal data structures. FSPF is implemented by a single task, called `tFspf`.

The display shows the following fields:

Table 1-6 fspfShow display fields

Field	Description
version:	Version of FSPF protocol.
domainID:	Domain number of local switch.
isl_ports:	Bit map of all E_Ports.
minLSArrival:	FSPF constant.
minLSInterval:	FSPF constant.
LsOriginCount:	Internal variable.
startTime:	Start time of tFspf task (milliseconds from boot).
fspfQ:	FSPF input message queue.
fabP:	Pointer to fabric data structure.
agingTID:	Ager timer ID.
agingTID:	Ager time out value, in milliseconds.
lsrDlyTID:	Link State Record delay timer ID.
lsrDelayTo:	Link State Record delay time out value, in milliseconds.
lsrDelayCount:	Counter of delayed Link State Records.
ddb_sem:	FSPF semaphore ID.
event_sch:	FSPF scheduled events bit map.
lsrRefreshCnt:	Internal variable.

Operands None.

Examples To display FSPF protocol information:

```
switch:admin> fspfshow

version          = 2
domainID        = 3
isl_ports       = 0x00000020
minLSArrival    = 3
minLSInterval   = 5
LSoriginCount   = 0
startTime       = 16784
fspfQ           = 0x10f48f10
fabP            = 0x10f49f90
agingTID        = 0x10f3c100
agingTo         = 10000
lsrDlyTID       = 0x10f3c0b0
lsrDelayTo      = 5000
lsrDelayCount   = 0
ddb_sem         = 0x10f48ee0

fabP:
event_sch       = 0x0
lsrRefreshCnt   = 0

switch:admin>
```

See Also bcastShow
mcastShow
topologyShow
uRouteShow

gbicShow

Display serial ID GBIC information.

Synopsis `gbicShow [portnumber]`

Availability All users

Description Use this command to display information about Serial Identification GBICs (also known as module definition "4" GBICs). These GBICs provide extended information that describes the GBICs capabilities, interfaces, manufacturer, and other information.

Use this command with no operand to display a summary of all GBICs in the switch. The summary shows the GBIC type (see `switchShow` for an explanation of the two letter codes) and, for Serial ID GBIC, the vendor name and GBIC serial number.

Use this command with a port number operand to display detailed information about the Serial ID GBIC in that port.

For Finisar "smart" GBICs, four additional fields are displayed: module temperature, received optical power, transmitted optical power (longwave only), and laser diode drive current.

Operands This command has the following operand:

`portnumber` Specify the port number to be displayed. Valid values are 0-7 or 0-15 depending on the switch type. This operand is optional.

Example To display GBIC summary information for an eight port switch, followed by detailed information for a Finisar "smart" GBIC:

```
switch:admin> gbicShow
port 0: id Vendor: FINISAR CORP. Serial No: 103980
port 1: id Vendor: HEWLETT-PACKARD Serial No:9809100953460702
port 2: id Vendor: FINISAR CORP. Serial No: 103960
port 3: sw
port 4: sw
port 5: cu
port 6: sw
port 7: sw
switch:admin>
switch:admin> gbicShow 2
Identifier: 1 GBIC
Connector: 1 SC
Transceiver: 010d102202000000 100_MB/s SM M5 M6 Longwave Inter_dist

Encoding: 1 8B10B
Baud Rate: 12 (units 100 megabaud)
Length 9u: 100 (units 100 meters)
Length 50u: 55 (units 10 meters)
Length 625u: 55 (units 10 meters)
Length Cu: 0 (units 1 meter)
Vendor Name: FINISAR CORP.
Vendor OUI: 00:5a:41
Vendor PN: FTR 1319
Vendor Rev: S
Options: 001a Loss_of_Sig Tx_Fault Tx_Disable
BR Max: 0
BR Min: 0
Serial No: 103960
Date Code: 990119
Temperature: 39 Centigrade
RX Power: 0 uWatts
TX Power: 289 uWatts
Current: 15 mAmps
```

See Also switchShow

h

Display shell history.

Synopsis h

Availability All users

Description Use this command to view the shell history. The shell history mechanism is similar to the UNIX Korn shell history facility, it has a built-in line-editor similar to UNIX vi that allows previously typed commands to be edited. The command h displays the 20 most recent commands typed into the shell; old commands fall off the top as new ones are entered.

To edit a command, press ESC to access edit mode, then use vi commands. The ESC key switches the shell to edit mode. The RETURN key gives the line to the shell from either editing or input mode.

Basic vi commands:

k	get the previous shell command
j	get the next command
h	move the cursor left
l	move the cursor right
a	append
i	insert
x	delete
u	undo

Operands None.

Example To display previous shell commands:

```
switch:admin> h
1 version
2 switchShow
3 portDisable 2
4 portEnable 2
5 switchShow
```

help

Display help information for commands.

Synopsis `help [command]`

Availability All users

Description Use this command without a operand to display an alphabetical list of commands that provide help information. At the end of the list are additional commands that display groups of commands, for example “diagHelp” displays a list of diagnostic commands.

The lists show only commands that are available to the current user; this can vary according to:

- Login user level
- License key
- Switch model

To access help information for a specific command, enter the command name as an operand.

Operands This command has the following operand:

`command` Specify the command name, with or without quotation marks.

Example The first example provides help information on the login command. The second example provides help information on the configure command.

```
switch:admin> help login
...
switch:admin> help "configure"
...
```

See Also `diagHelp`

`licenseHelp`

`routeHelp`

i

Display task summary.

Synopsis `i [taskId]`

Availability All users

Description Use this command to display a synopsis of all tasks in the switch, or for a specific task if a taskId is supplied. One line is displayed for each task; it contains the following fields:

Table 1-7

Field	Description
NAME	Task name
ENTRY	Symbol name or address where task began execution
TID	Task ID
PRI	Priority
STATUS	Task status (see below)
PC	Program counter
SP	Stack pointer
ERRNO	Most recent error code for this task
DELAY	If task is delayed, number of clock ticks remaining

The following indicate task status:

Table 1-8

READY	Task is not waiting for any resource other than the CPU
PEND	Task is blocked due to the unavailability of a resource
DELAY	Task is asleep for a duration
SUSPEND	Task is unavailable for execution (but not delayed or ended)
DELAY+S	Task is both delayed and suspended
PEND+S	Task is both pended and suspended
PEND+T	Task is pended with a time out
PEND+S+T	Task is pended with a time out, and also suspended
DEAD	Task no longer exists

Operands This command has the following operand:

`taskId` Specify the task name or task ID for the task to be displayed.

Example To display the task summary:

```
switch:admin> i tFcp
```

NAME	ENTRY	TID	PRI	STATUS	PC	SP	ERRNO	DELAY
tFcp	_fcpTask	103ad660	150	PEND+T	10191b78	103ad9e0	3d0004	32

```
switch:admin> i
```

NAME	ENTRY	TID	PRI	STATUS	PC	SP	ERRNO	DELAY
tExcTask	_excTask	103f7eb0	0	PEND	10191b78	103f8200	3d0001	0
tLogTask	_logTask	103f5f30	0	PEND	10191b78	103f6280	0	0
tShell	_shellTask	103b8970	1	READY	10177460	103b8be0	1c0001	0
tRlogind	_rlogind	103de0e0	2	PEND	10173e80	103de7d0	0	0
tTelnetd	_telnetd	103dc150	2	PEND	10173e80	103dc5c0	0	0
tTimers	_timerTask	103cf270	10	PEND	10191b78	103cf5f0	0	0
tErrLog	_errLogTask	103d0810	20	PEND	10191b78	103d0b90	0	0
tNetTask	_netTask	103f0370	50	READY	10174f20	103f0740	0	0
tSwitch	_switchTask	103d1db0	80	PEND+T	10191b78	103d21b0	3d0004	9
tPMenu	_menuTask	103c8e30	90	PEND	10191b78	103c91f0	0	0
tReceive	_portRxTask	103c5690	100	PEND	10191b78	103c5a10	0	0
tTransmit	_portTxTask	103c40f0	100	PEND	10191b78	103c4470	0	0
tFabric	_fabricTask	103aae20	100	PEND	10191b78	103ab1e0	0	0
tFspf	_fspfTask	103a8c70	100	PEND	10191b78	103a8ff0	0	0
tFcph	_fcphTask	103af890	120	PEND+T	10191b78	103afc10	3d0004	2
tFcp	_fcpTask	103ad660	150	READY	10191b78	103ad9e0	3d0004	0
tNSd	_ns_svr	10397050	150	PEND	10191b78	103973e0	0	0
tASd	_as_svr	1036f5b0	150	PEND	10191b78	1036f930	0	0

See Also diagHelp
routeHelp

ifModeSet

Set the link operating mode for a network interface.

Synopsis `ifModeSet ["interface"]`

Availability admin

Description Use this command to set the link operating mode for a network interface.

Use `ifShow` to list network interfaces available on the system.

An operating mode is confirmed with a "y" or "yes" at the prompt. If the operating mode selected differs from the current mode, the change is saved and the command exits.

The system must be rebooted for changes to take effect.

Changing the link mode is not supported for all network interfaces or for all ethernet network interfaces. At present, this command is only functional for "fei" interfaces.

Exercise care when using this command. Forcing the link to an operating mode not supported by the network equipment to which it is attached may result in an inability to communicate with the system through its ethernet interface.

Operands This command has the following operand:

`interface` Specify the name of the interface in quotation marks. For example, "fei0", where fei is the network interface, and 0 is the physical unit.

Example To force the link for the "fei0" ethernet interface from auto-negotiate operation to 10 Mbps / Half duplex operation:

```
switch:admin> ifModeSet "fei0"
Auto-negotiate (yes, y, no, n): [no]
100 Mbps / Full Duplex (yes, y, no, n): [no]
100 Mbps / Half Duplex (yes, y, no, n): [no]
10 Mbps / Full Duplex (yes, y, no, n): [no]
10 Mbps / Half Duplex (yes, y, no, n): [no] yes
Committing configuration...done.
```

See Also `ifModeShow`

`ifShow`

ifModeShow

Display the link operating mode for a network interface.

Synopsis `ifModeShow ["interface"]`

Availability All users

Description Use this command to display the link operating mode for a network interface.

Operands This command has the following operand:

`interface` Specify the name of the interface in quotation marks. For example, "fei0", where fei is the network interface and 0 is the physical unit.

Example To display the link operating mode for the "fei0" ethernet interface:

```
switch:admin> ifModeShow "fei0"
fei (unit number 0):
Link mode: Auto-negotiate
```

See Also `ifModeSet`

`ifShow`

ifShow

Display network interface information.

Synopsis `ifShow ["ifName"]`

Availability All users

Description Use this command to display network interface status. If the operand `ifName` is provided, only the that interface is displayed. If `ifName` is omitted, all interfaces are displayed.

Each switch has three interfaces:

- “ei” or “fei” is the 10BaseT or 100BaseT ethernet interface
- “lo” is the loopback interface
- “fc” is the fibre channel interface

The “fc” interface is displayed for switches running IP over fibre channel that have been assigned an FC-IP address.

For each interface selected, the following information is displayed:

- Flags (for example, loopback, broadcast, arp, running, debug)
- Internet address
- Broadcast address
- Netmask and subnetmask
- Ethernet address
- Route metric
- Maximum transfer unit
- Number of packets received and sent
- Number of input errors, output errors, and collisions

Operands This command has the following operand:

`ifName` Specify the name of an interface, in quotation marks. This operand is optional.

Example To display ethernet interface information for a switch with a 10BaseT connection:

```
switch:admin> ifShow "ei"
ei (unit number 0):
  Flags: (0x63) UP BROADCAST ARP RUNNING
  Internet address: 192.168.1.65
  Broadcast address: 192.168.1.255
  Netmask 0xffffffff Subnetmask 0xffffffff
  Ethernet address is 00:60:69:00:00:8a
  Metric is 0
  Maximum Transfer Unit size is 1500
  42962 packets received; 127 packets sent
  0 input errors; 0 output errors
  7 collisions
```

See Also [ipAddrSet](#)
[ipAddrShow](#)

interfaceShow

Display FSPF interface information.

Synopsis `interfaceShow [portnumber]`

Availability All users

Description Use this command to display data structures associated with FSPF interfaces (E_Ports) on the switch.

There are two data structures - the permanently allocated Interface Descriptor Block (IDB) and the neighbor data structure that is allocated when a switch port becomes an E_Port. The neighbor data structure contains all the information relating to the switch that is connected to a local interface, also known as the adjacent switch. This command displays the content of both data structures, if they have been allocated.

Used without specifying the port number, this command displays the interface information for all ports on the switch (including non E_Ports).

The following fields are displayed:

<code>idbP</code>	Pointer to IDB.
<code>nghbP</code>	Pointer to neighbor data structure.
<code>ifNo</code>	Interface number.
<code>cost</code>	Cost of sending a frame over the ISL connected to this interface. The value 1000 indicates a 1 Gb/s link.
<code>delay</code>	Conventional delay incurred by a frame transmitted on this ISL. A fixed value required by the FSPF protocol.
<code>lastScn</code>	Type of the last State Change Notification received on this interface.
<code>lastScnTime</code>	Time the last State Change Notification was received on this interface.
<code>upCount</code>	Number of times this interface came up, with respect to FSPF.
<code>lastUpTime</code>	Last time this interface came up.
<code>downCount</code>	Number of times this interface went down.
<code>lastDownTime</code>	Last time this interface went down.
<code>downReason</code>	Type of last State Change Notification that caused this interface to go down.
<code>iState</code>	Current state of this interface. The state can be UP or DOWN. An interface in DOWN state does not have an allocated neighbor data structure and cannot be used to route traffic to other switches.
<code>state</code>	Current state of this interface. This E_Port is used to route traffic to other switches only if the state is 'NB_ST_FULLL'.
<code>nghbCap</code>	Neighbor capabilities. Should be 0.
<code>nghbId</code>	Domain ID of the neighbor (adjacent) switch.
<code>idbNo</code>	IDB number. Should be equal to <code>portnumber</code>

<code>remPort</code>	Port number on the remote switch connected to this port.
<code>nflags</code>	Internal FSPF flags.
<code>initCount</code>	Number of times this neighbor was initialized, without the interface going down.
<code>&dbRetransList</code>	Pointer to the database retransmission list.
<code>&lsrRetransList</code>	Pointer to the Link State Records (LSR) retransmission list.
<code>&lsrAckList</code>	Pointer to the Link State Acknowledgements (LSA) retransmission list.
<code>inactTID</code>	Inactivity timer ID.
<code>helloTID</code>	Hello timer ID.
<code>dbRtxTID</code>	Database retransmission timer ID.
<code>lsrRtxTID</code>	LSR retransmission timer ID.
<code>inactTo</code>	Inactivity time out value, in milliseconds. When this time out expires, the adjacency with the neighbor switch is broken and new paths are computed to all possible destination switches in the fabric.
<code>helloTo</code>	Hello time out value, in milliseconds. When this time out expires, a Hello frame is sent to the neighbor switch through this port.
<code>rXmitTo</code>	Retransmission time out value, in milliseconds. It is used to transmit topology information to the neighbor switch. If no acknowledgement is received within <code>rXmitTo</code> , frame is retransmitted.
<code>nCmdAcc</code>	Total number of commands accepted from the neighbor switch. Number includes Hellos, Link State Updates (LSU) and Link State Acknowledgements.
<code>nInvCmd</code>	Number of invalid commands received from the neighbor switch. Usually commands with an FSPF version number higher than the one running on the local switch.
<code>nHloIn</code>	Number of Hello frames received from the neighbor switch.
<code>nInvHlo</code>	Number of invalid Hello frames (Hello frames with invalid parameters) received from the neighbor switch.
<code>nLsuIn</code>	Number of LSUs received from the neighbor switch.
<code>nLsaIn</code>	Number of LSAs received from the neighbor switch.
<code>attHloOut</code>	Number of attempted transmissions of Hello frames to the neighbor switch.
<code>nHloOut</code>	Number of Hello frames transmitted to the neighbor switch.
<code>attLsuOut</code>	Number of attempted transmissions of LSUs to the neighbor switch.
<code>nLsuOut</code>	Number of LSUs transmitted to the neighbor switch.
<code>attLsaOut</code>	Number of attempted transmissions of LSAs to the neighbor switch.
<code>nLsaOut</code>	Number of LSAs transmitted to the neighbor switch.

Operands This command has the following operand:

`portnumber` Specify the port number you want to display the interface data structures for. This operand is required.

Examples To display FSPF interface information:

```
switch:admin> interfaceShow 4
idbP          = 0x10f61f40
Interface 4 data structure:
nghbP         = 0x10f61d90
ifNo          = 4
cost          = 1000
delay         = 1
lastScn       = 5
lastScnTime   = Mar 29 12:57:52.833
upCount       = 2
lastUpTime    = Mar 29 12:57:52.833
downCount     = 1
lastDownTime  = Mar 29 12:57:47.566
downReason    = 2
iState        = UP
Type <CR> to continue, Q<CR> to stop:
< ... sample output truncated ... >
```

See Also `portShow`
`switchShow`

iodReset

Turn off the in-order delivery option.

Synopsis `iodReset`

Availability `admin`

Description Use this command to allow out-of-order delivery of frames during fabric topology changes. This is the default behavior, and allows fast rerouting after a fabric topology change.

Operands None.

Examples To turn off the in-order delivery option:

```
switch:admin> iodReset
```

See Also `iodSet`
 `iodShow`

iodSet

Turn on in-order delivery option.

Synopsis `iodSet`

Availability `admin`

Description Use this command to enforce in-order delivery of frames during a fabric topology change. In a stable fabric, frames are always delivered in order, even when the traffic between switches is shared among multiple paths. However, when topology changes occur in the fabric (for instance, a link goes down), traffic is rerouted around the failure. When topology changes occur, generally, some frames are delivered out of order. This command insures that frames are not delivered out-of-order, even during fabric topology changes.

The default behavior is for the in-order delivery option to be off.

This command should be used with care, because it can cause a delay in the establishment of a new path when a topology change occurs. Only if there are devices connected to the fabric that do not tolerate occasional out-of-order delivery of frames, should this command be used.

Operands None.

Examples To turn on the in-order delivery option:

```
switch:admin> iodSet
```

See Also `iodReset`
 `iodShow`

iodShow

Display the state of the in-order delivery option.

Synopsis `iodShow`

Availability All users

Description Use this command to display whether the In-Order Delivery option is on or off.

Operands None.

Example To display the current setting of the in-order delivery option:

```
switch:admin> iodShow
IOD is not set
```

See Also `iodSet`
 `iodReset`

ipAddrSet

Set ethernet and FC IP addresses.

Synopsis ipAddrSet

Availability admin

Description Use this command to set ethernet and FC IP addresses. You are prompted for:

Ethernet IP Address:IP address of the ethernet port.

Ethernet Subnetmask:IP subnet mask of the ethernet port.

Fibre Channel IP Address:IP address of the fibre channel ports.

Fibre Channel Subnetmask:IP subnet mask of the fibre channel ports.

Gateway Address:IP address of the gateway.

After each prompt the current value is shown. You may:

- Press `return` to retain the current value
- Enter an IP address in conventional dot ('.') notation
- Enter `none`
- Press `control-C` to cancel changes
- Press `control-D` to accept changes and end input

The final prompt allows you to set the new IP addresses immediately; enter `y` to set new addresses immediately, enter `n` to delay the changes until the next switch reboot. (Entering `y` closes the telnet session.)

A change to these values issues a Domain Address format RSCN (see FC-FLA for a description of RSCNs).

Operands None.

Example To enable IP over fibre channel:

```
switch:admin> ipAddrSet
Ethernet IP Address [192.168.1.65]:
Ethernet Subnetmask [none]:
Fibre Channel IP Address [none]: 192.168.65.65
Fibre Channel Subnetmask [none]:
Gateway Address [192.168.1.1]:
Committing configuration...done.
Set IP addresses now?
[y = set now, n = next reboot]: y
```

See Also ifShow

ipAddrShow

ipAddrShow

Display ethernet and FC IP addresses.

Synopsis ipAddrShow

Availability All users

Description Use this command to display ethernet and fibre channel IP addresses. The following are shown:

Ethernet IP Address: IP address of the ethernet port.
Ethernet Subnetmask: IP subnet mask of the ethernet port.
Fibre Channel IP Address: IP address of the fibre channel ports.
Fibre Channel Subnetmask: IP subnet mask of the fibre channel ports.
Gateway Address: IP address of the gateway.

IP addresses are displayed in conventional dot ('.') notation.

All fibre channel ports on a switch have the same IP address and subnet mask. The fibre channel IP address displays none if the switch is not configured to run IP over fibre channel.

Operands None.

Example To display the switch IP addresses:

```
switch:admin> ipAddrShow
Ethernet IP Address: 192.168.1.65
Ethernet Subnetmask: none
Fibre Channel IP Address: 192.168.65.65
Fibre Channel Subnetmask: none
Gateway Address: 192.168.1.1
```

See Also ifShow

ipAddrSet

islTopoCheck

Display ISL sgroup connections for a switch.

Synopsis `islTopoCheck`

Availability `admin`

Description This command displays the ISL sgroup connections and status for this switch. This command is used to verify that the switch is properly cabled and configured. Each port that is specified in the ISL definition corresponding to an ISL sgroup that this switch is a member of will be displayed. A switch with properly configured ISL connections will report a status of “OK” for each of these ports.

Operands None.

Example The following example shows the results of `islTopoCheck` on a mis-configured switch. In a proper configuration, all of the switches would have valid domains and names and each of the ports status would be OK.

```
switch:admin> islTopoCheck
ISL data for type: S32_6_1, sgroup: My_group
idx  domain  expected wwn          name
01   01     10:00:00:60:69:20:02:9f  jr_1003
02   02     10:00:00:60:69:10:a0:4e  switch
03  -01     00:00:00:00:00:00:00:03  -UNKNOWN-
04  -01     00:00:00:00:00:00:00:04  -UNKNOWN-
05  -01     00:00:00:00:00:00:00:05  -UNKNOWN-
06  -01     00:00:00:00:00:00:00:06  -UNKNOWN-

Domain: 2, wwn: 10:00:00:60:69:10:a0:4e

isl port  expected switch  port  actual switch  port  status
0  08 -> jr_1003      : 00  jr_1003      : 00  OK
1  09 -> jr_1003      : 01  jr_1003      : 01  OK
2  10 -> jr_1003      : 02  jr_1003      : 03  Wrong port
3  11 -> jr_1003      : 03  -UNKNOWN-    :-01  Bad status
4  12 -> -UNKNOWN-    : 12  -UNKNOWN-    :-01  Bad status
5  13 -> -UNKNOWN-    : 13  jr_1003      : 07  Wrong switch
6  14 -> -UNKNOWN-    : 14  -UNKNOWN-    :-01  Bad status
7  15 -> -UNKNOWN-    : 15  -UNKNOWN-    :-01  Bad status
```

See Also `islTopoShow`

islTopoShow

Displays ISL switch group topology and status.

Synopsis `islTopoShow [sgroup]`

Availability all users

Description This command displays the current connections and status for all the switches in the ISL switch groups that the current switch is a member of. The status for every port and switch combination in each active ISL group is displayed.

Operands This command has the following operand:

`sgroup` Specify a switch group or switch group type to display the ISL connection status for that specific switch group or switch group type.

If no operand is entered, the default behavior is to display the topology status for all ISL sgroups of which the current switch is a member.

Example The following example shows the results of **islTopoShow** on a mis-configured switch. In a proper configuration, all of the switches would have valid domains and names and each of the ports status would be OK.

```
switch:admin> islTopoShow
ISL data for type: S32_6_1, sgroup: My_group
idx  domain  expected wwn                name
01   01    10:00:00:60:69:20:02:9f  jr_1003
02   02    10:00:00:60:69:10:a0:4e  switch
03  -01    00:00:00:00:00:00:00:03  -UNKNOWN-
04  -01    00:00:00:00:00:00:00:04  -UNKNOWN-
05  -01    00:00:00:00:00:00:00:05  -UNKNOWN-
06  -01    00:00:00:00:00:00:00:06  -UNKNOWN-
```

```
Switch idx: 1 Domain: 1, wwn: 10:00:00:60:69:20:02:9f
```

isl	port	expected switch	port	actual switch	port	status
0	00	-> es_6	: 08	es_6	: 08	OK
1	01	-> es_6	: 09	es_6	: 09	OK
2	02	-> es_6	: 10	-UNKNOWN-	:-01	No record
3	03	-> es_6	: 11	es_6	: 10	Wrong port
4	04	-> -UNKNOWN-	: 08	-UNKNOWN-	:-01	No record
5	05	-> -UNKNOWN-	: 09	-UNKNOWN-	:-01	No record
6	06	-> -UNKNOWN-	: 10	-UNKNOWN-	:-01	No record
7	07	-> -UNKNOWN-	: 11	es_6	: 13	Wrong switch
8	08	-> -UNKNOWN-	: 08	-UNKNOWN-	:-01	No record
9	09	-> -UNKNOWN-	: 09	-UNKNOWN-	:-01	No record
10	10	-> -UNKNOWN-	: 10	-UNKNOWN-	:-01	No record
11	11	-> -UNKNOWN-	: 11	-UNKNOWN-	:-01	No record
12	12	-> -UNKNOWN-	: 08	-UNKNOWN-	:-01	No record
13	13	-> -UNKNOWN-	: 09	-UNKNOWN-	:-01	No record
14	14	-> -UNKNOWN-	: 10	-UNKNOWN-	:-01	No record
15	15	-> -UNKNOWN-	: 11	-UNKNOWN-	:-01	No record

```
Switch idx: 2 Domain: 2, wwn: 10:00:00:60:69:10:a0:4e
```

isl	port	expected switch	port	actual switch	port	status
0	08	-> jr_1003	: 00	jr_1003	: 00	OK
1	09	-> jr_1003	: 01	jr_1003	: 01	OK
2	10	-> jr_1003	: 02	jr_1003	: 03	Wrong port
3	11	-> jr_1003	: 03	-UNKNOWN-	:-01	No record
4	12	-> -UNKNOWN-	: 12	-UNKNOWN-	:-01	No record
5	13	-> -UNKNOWN-	: 13	jr_1003	: 07	Wrong switch
6	14	-> -UNKNOWN-	: 14	-UNKNOWN-	:-01	No record
7	15	-> -UNKNOWN-	: 15	-UNKNOWN-	:-01	No record

See Also islTopoCheck

licenseAdd

Add license key to switch.

Synopsis `licenseAdd "license"`

Availability admin

Description Use this command to add a license key to a switch. The license key string is case sensitive; it must be entered exactly as issued.

When the key has been entered, use the `licenseShow` command to check that the key has been correctly entered and the licensed product installed. Once the key has been installed, the product is immediately available.

Note: A QuickLoop only switch (SilkWorm 2100) must be rebooted after adding a Fabric license.

Operands This command has the following operand:

`license` Specify the license key, in quotation marks. This operand is required.

Example To add a license key to the switch:

```
switch:admin> licenseAdd "bQebzbRdScRfc0iK"  
adding license key "bQebzbRdScRfc0iK"  
Committing configuration...done.
```

See Also `licenseRemove`

`licenseShow`

licenseHelp

Display commands used to administer license keys.

Synopsis licenseHelp

Availability admin

Description Use this command to display a list of the commands used to administer license keys.

Operands None.

Example To display license commands:

```
switch:admin> licenseHelp
licenseAdd      Add a license key to this switch
licenseRemove  Remove a license key from this switch
licenseShow     Show current license key
```

See Also licenseAdd
licenseRemove
licenseShow

licenseRemove

Remove the license key from a switch.

Synopsis `licenseRemove "license"`

Availability admin

Description Use this command to remove an existing license key from a switch. The existing license key must be entered exactly as shown by `licenseShow`, including case.

When the key has been entered, use the `licenseShow` command to check that the key has been removed and the licensed product uninstalled. Once the license key has been removed, the switch must be rebooted.

With no license keys installed, `licenseShow` displays "No licenses".

Operands The following operand is required:

`license` Specify the license key, in quotation marks. This operand is required.

Example To remove a license key from the switch:

```
switch:admin> licenseRemove "bAaAabRdScRfc0iK"  
removing license key "bAaAabRdScRfc0iK"  
Committing configuration...done.
```

See Also `licenseAdd`

`licenseShow`

licenseShow

Display current license keys.

Synopsis licenseShow

Availability All users

Description Use this command to display current license keys along with a list of licensed products enabled by these keys; none is displayed if no license keys are installed.

Operands None.

Example In this example, the switch has two keys, the first key enables two licensed products and the second key enables a third:

```
switch:admin> licenseShow
bQebzbRdScRfc0iK:
    Web license
    Zoning license
SybbzQQ9edTzcc0X:
    Fabric license
```

See Also licenseAdd
licenseRemove

linkCost

Set or print the FSPF cost of a link.

Synopsis `linkCost [portnumber], [cost]`

Availability admin

Description Use this command to set or display the cost of an Inter-Switch Link (ISL). The cost of a link is a dimensionless positive number. It is used by the FSPF path selection protocol to determine the path that a frame takes going from the source to the destination switch. The chosen path is the path with minimum cost. The cost of a path is the sum of the costs of all the ISLs traversed by the path. The cost of a path is also known as the "metric".

FSPF supports load sharing over a number of equal cost paths.

Every ISL has a default cost that is inversely proportional to the bandwidth of the ISL. For a 1Gb/sec ISL, the default cost is 1000.

This command changes the actual link cost only, it does not affect the default cost. The `interfaceShow` command displays both the default and the actual cost.

Without operands, this command displays the actual cost of all the ISLs. With one operand, it displays the actual cost of a specific ISL. With two operands, it sets the cost of a specific ISL.

Operands This command has the following operands:

`portnumber` Specify the interface cost to be set or printed. This operand is optional.

`cost` Specify the new cost of the link connected to interface `portnumber`. This operand is optional.

Examples To display the FSPF cost of a link, and reset the cost:

```
switch:admin> linkCost 1
Interface: 1 cost 1000
switch:admin> linkCost 1,2000
Committing configuration...done.
switch:admin> linkCost 1
Interface: 1cost 2000
```

See Also interfaceShow

LSDbShow

topologyShow

uRouteShow

login

Login as a new user.

Synopsis login

Availability All users

Description Use this command to login to the switch with another user name and password, without first logging out from the original session. If the user was originally connected using a telnet or rlogin session, that session is left open.

This command allows you to access commands that you cannot access at your current user level.

Operands None.

Example To change the login from “user” to “admin”:

```
switch:user> login
login: admin
Password: xxxxxx
switch:admin>
```

See Also logout

logout

Logout from a telnet, rlogin or serial port session.

Synopsis logout

Availability All users

Description Use this command to logout from a telnet, rlogin or serial port session. Telnet and rlogin connections are closed, the serial port returns to the “login:” prompt.

The commands `exit` and `quit` are accepted as synonyms for `logout`, as is `control-D` entered at the beginning of a line.

Operands None.

Example To log out from a rlogin session:

```
switch:admin> logout
Connection closed.
```

See Also login

loopdiagClear

Clear information from management layers.

Synopsis `loopdiagClear port`

Availability `admin`

Description This command will clean up any residue information from a previous failed session in management layer. It releases all the resources created for the port specified.

Operands This command has the following operand:

`port` The physical port number where loopdiag executes. This operand is required.

Example To complete loopdiag at port 5:

```
switch:admin> loopdiagClear 5
```

See Also `loopdiagStart`

`loopdiagStop`

loopdiagDone

Completes loopdiag application.

Synopsis `loopdiagDone port`

Availability `admin`

Description This command completes loopdiag application at the port specified. It releases all the resources created for loopdiag and sets the port ONLINE before resetting the loop.

Operands The following operands are required:

`port` The physical port number where loopdiag executes.

Example To complete loopdiag at port 5:

```
switch:admin> loopdiagDone 5
```

See Also `loopdiagStart`
`loopdiagStop`

LSDbShow

Display the FSPF Link State Database.

Synopsis LSDbShow [domain]

Availability All users

Description Use this command to display a link state database record for switches in the fabric.

There are two data structures - the permanently allocated Link State Database Entry and the Link State Record (LSR) that is allocated when a switch is connected to the fabric. The LSR for domain 'n' describes the links between the switch with domain number 'n' and its neighbor switches. For a link to be reported in the LSR, the neighbor for that link must be in NB_ST_FULL state.

This command displays the content of both data structures, if the LSR is present.

Without operands, this command displays the whole Link State Database.

The display shows the following fields:

Table 1-9 LSDbShow display fields

Field	Description
Domain	Domain number described by this LSR. A (self) keyword after the domain number indicates LSR describes the local switch.
lsrP	Pointer to LSR.
earlyAccLSRs	Number of LSRs accepted even though they were not sufficiently spaced apart.
ignoredLSRs	Number of LSRs not accepted because they were not sufficiently spaced apart.
lastIgnored	Last time an LSR was ignored.
installTime	Time this LSR was installed in the database, in seconds since boot.
lseFlags	Internal variable.
uOutIfs	Internal variable
uPathCost	Internal variable.
uHopsFromRoot	Internal variable.
mOutIfs	Internal variable.
parent	Internal variable.
mPathCos	Internal variable.
mHopsFromRoot	Internal variable.
lsAge	Age, in seconds, of this LSR. An LSR is removed from the database when its age exceeds 3600 seconds.
reserved	Reserved for future use.
type	Type of the LSR. Always 1.

Table 1-9 LSDbShow display fields (Continued)

Field	Description
options	Always 0.
lsId	ID of this LSR. It is identical to the domain number.
advertiser	ID (domain number) of the switch that originated this LSR.
incarn	Incarnation number of this LSR.
length	Total length (in bytes) of this LSR. Includes header and link state information for all links.
chksum	Checksum of total LSR, with exception of lsAge field.
linkCnt	Number of links in this LSR. Each link represents a neighbor in NB_ST_FULL state.
flags	Always 0.
LinkId	ID of this link. It is the domain number of the switch on the other side of the link.
out port	Port number on the local switch.
rem port	Port number of the port on the other side of the link.
cost	Cost of this link. The default cost for a 1 Gb/s link is 1000.
costCnt	Always 0.
type	Always 1.

Operands This command has the following operand:

domain Specify the domain number of LSR to be displayed.

Examples To display the Link State Record for the local switch, as indicated by `self` keyword (the local switch has four links in `NB_ST_FULL` state, three of them connected to switch 5, and one connected to switch 4.

```
Domain = 7 (self), Link State Database Entry pointer = 0x103946a0

lsrP          = 0x1035bb30
earlyAccLSRs = 1
ignoredLSRs  = 0
lastIgnored  = Never
installTime  = 0x4f20a (324106)
lseFlags     = 0xa
uOutIfs     = 0x0
uPathCost    = 0
uHopsFromRoot = 0
mOutIfs     = 0x20
parent       = 0x4
mPathCost    = 2000
mHopsFromRoot = 2

Link State Record:

Link State Record pointer = 0x1035bb30

lsAge        = 138
reserved    = 0
type        = 1
options     = 0x0
lsId        = 7
advertiser  = 7
incarn      = 0x80000217
length      = 92
chksum     = 0x2fdd
linkCnt = 4, flags = 0x0
LinkId = 4, out port = 3, rem port = 2, cost = 1000, costCnt = 0, type = 1
LinkId = 5, out port = 5, rem port = 5, cost = 1000, costCnt = 0, type = 1
LinkId = 5, out port = 6, rem port = 3, cost = 1000, costCnt = 0, type = 1
LinkId = 5, out port = 7, rem port = 4, cost = 1000, costCnt = 0, type = 1
```

See Also `interfaceShow`
`nbrStateShow`

mcastShow

Display multicast routing information.

Synopsis mcastShow [group_ID]

Availability All users

Description Use this command to display the multicast routing information, as it is known by the FSPF path selection and routing task, for all ports in the switch. The multicast routing information indicates, for each multicast group, all the ports that are members of that group, that is ports that are able to send and receive multicast frames on that group.

The multicast routing information is shown for all the multicast groups, or for a specific group if a group ID is supplied.

Normally, an F_Port or FL_Port is a member of the multicast group only if it has joined the group using the Alias Server protocol. On the other hand, E_Ports that are part of the multicast group are selected by the multicast path selection protocol. They are chosen in a way that prevents multicast routing loops.

The multicast paths are active for all the multicast groups at all times, regardless of whether a multicast group contains any members.

The multicast routing information is shown as a set of bit maps. Each bit in the bit map represents a port, with the least significant bit representing port 0. A bit set to 1 indicates that a port is part of the multicast distribution tree.

The following fields are displayed:

Group: Multicast group ID.

Member Ports: Bit map of all ports in the multicast tree for that multicast group.

Member ISL Ports: Bit map of all E_Ports in the multicast tree for that multicast group.

Static ISL Ports: Reserved. It should be all zeroes.

Operands This command has the following operand:

group_ID Specify the multicast group to be displayed.

Examples To display multicast routing information:

```
switch:admin> mcastShow 9
Group          Member Ports  Member ISL Ports  Static ISL Ports
-----
9              0x00002083   0x00002080       0x00000000
```

See Also bcastShow

portRouteShow

msConfigure

Configure the Management Server.

Synopsis msConfigure

Availability admin

Description Use this command to display and configure parameters used to access the Management Server. The Management Server allows a storage area network (SAN) management application to retrieve and administer fabric and interconnect elements such as switches. It is located at the fibre channel address, FFFFFFFAh.

If the Management Server Access Control List (ACL) is empty (default), the Management Server is accessible to all systems connected in-band to the fabric. To restrict access, specify the World Wide Name (WWN) for one or more management applications; access is then restricted to those WWNs.

The ACL is implemented on a per switch basis and should be configured on the switch to which the management application station is directly connected.

This command is interactive and provides the following choices:

- 0 Done (with the administration)
- 1 Display the access list (ACL)
- 2 Add member based on its Port/Node WWN
- 3 Delete member based on its Port/Node WWN

If a change is made you are prompted to save the changed ACL to the FLASH. The saved ACL is restored on future reboot.

Operands None.

Example To display the Management Server access control list.

```
switch:admin> msConfigure
0          Done
1          Display the access list
2          Add member based on its Port/Node WWN
3          Delete member based on its Port/Node WWN
select : (0..3) [1]
MS Access List consists of (5): {
  20:01:00:60:69:00:60:10
  20:02:00:60:69:00:60:10
  20:03:00:60:69:00:60:10
  20:02:00:60:69:00:60:03
  20:02:00:60:69:00:60:15
}
0          Done
1          Display the access list
2          Add member based on its Port/Node WWN
3          Delete member based on its Port/Node WWN
select : (0..3) [1] 0
done ...
switch:admin>
```

See Also msPlCapabilityShow
msPlMgmtActivate
msPlMgmtDeactivate
msPlClearDB

msPlatShow

Displays the Management Server Platform Database.

Synopsis msPlatShow

Availability admin

Description This command enables an admin user to display the Management Server Platform Database. It displays the Platform name and associated attributes of each Platform object in the database.

Platform Database Management is available in firmware v2.3 and above. Lower level firmware releases do not support Platform Database Management.

Operands None.

Example To display the Management Server platform database for a fabric:

```
switch:admin> msPlatShow
-----
Platform Name: [9] "first obj"
Platform Type: 5 : GATEWAY
Number of Associated M.A.: 1
Associated Management Addresses:
  [35] "http://java.sun.com/products/plugin"
Number of Associated Node Names: 1
Associated Node Names:
  10:00:00:60:69:20:15:71
-----
Platform Name: [10] "second obj"
Platform Type: 7 : HOST_BUS_ADAPTER
Number of Associated M.A.: 1
Associated Management Addresses:
  [30] "http://java.sun.com/products/1"
Number of Associated Node Names: 2
Associated Node Names:
  10:00:00:60:69:20:15:79
  10:00:00:60:69:20:15:75
```

See Also msPlCapabilityShow

msPlMgmtActivate

msPlMgmtDeactivate

msPlClearDB

msPlClearDB

Clears the Management Server Platform Database on all switches in the fabric.

Synopsis	msPlClearDB
Availability	admin
Description	This command enables an admin user to clear the entire Management Server Platform Database on all switches in the fabric. Since this operation is non-recoverable (once issued, the database will be erased), it should not be used unless it is intended to resolve a database conflict between two joining fabrics or to establish an entire new fabric with an empty database.
Limitations	Platform database management is available in v2.3 and above. Lower level firmware releases will not be able to support Platform Database Management.
Operands	None
Example	To clear the Management Server platform database on all switches in the fabric:

```
switch:admin> msPlClearDB
Fabric-wise Platform DB Delete operation in progress...
switch:admin>Done...
```

See Also	msPlMgmtDeactivate
	msPlatShow
	msPlCapabilityShow
	msPlMgmtActivate

msPlCapabilityShow

Display the Platform Database Management Capability.

Synopsis msPlCapabilityShow

Availability admin

Description This command enables an admin user to query a fabric for the Platform Database Management capability. Based on the result of this command, the admin user can then decide if it is ok to activate the Platform database management service on all switches in the fabric.

When this command is issued, information is gathered from every switch of the fabric and each switch's ability to handle the Platform database management is displayed.

Limitations Platform Database Management is available in firmware v2.3 and above. Lower level firmware releases do not support Platform Database Management.

Operands None.

Example To display Platform Database Management capability on a fabric:

```
switch:admin> msPlCapabilityShow
                                Platform
Switch WWN                      Service Capable  Capability  Name
=====
10:00:00:60:69:20:15:71         Yes             0X0000000B  "swd156"
10:00:00:60:69:00:30:05         Yes             0X0000000B  "swd158"
    Capability Bit Definitions:
    Bit 0: Basic Configuration Service Supported.
    Bit 1: Platform Management Service Supported.
    Bit 2: Topology Discovery Service Supported.
    Bit 3: Unzoned Name Server Service Supported.
    Bit 4: M.S. Fabric Zone Service Supported.
    Bit 5: Fabric Lock Service Supported.
    Others: Reserved.

Done.
```

See Also msPlMgmtActivate
msPlMgmtDeactivate
msPlatShow
msPlClearDB

msPlMgmtActivate

Activates the Platform DB Management service on all switches in the fabric.

Synopsis msPlMgmtActivate

Availability admin

Description This command enables an admin user to activate the Management Server Platform Database Management Service on all switches in the fabric. It is recommended that the admin user run the `msPlCapabilityShow` command before issuing this command. If any switch within the fabric is not capable of handling the Platform Management service, this command is rejected. When this command is issued, all the switches in the fabric will have the Platform database management service ENABLED.

The activation is saved to the non-volatile storage of each switch, so even after a reboot, a switch will boot up with Platform Management service ENABLED.

By default, the Platform Management service is DISABLED.

Limitations Platform Database Management is available in firmware v2.3 and above. Lower level firmware releases do not support Platform Database Management.

Operands None.

Example To activate Platform Database Management on all switches in the fabric:

```
switch:admin> msPlMgmtActivate
Request Fabric to activate Platform Management services.... Done.
switch:admin>
```

See Also msPlMgmtDeactivate

msPlatShow

msPlCapabilityShow

msPlClearDB

msPlMgmtDeactivate

Deactivates the Platform DB Management service on all switches in the fabric.

Synopsis `msPlMgmtDeactivate`

Availability `admin`

Description This command enables an admin user to deactivate the Platform DB Management service. This command deactivates the Platform DB Management service of each switch in the fabric and commits the changes to the non-volatile storage of each switch.

Once deactivated, even in the event of a reboot, the switch will initialize with the service DISABLED.

By default, the Platform Management service is DISABLED.

Limitations Platform Database Management is available in firmware v2.3 and above. Lower level firmware releases do not support Platform Database Management.

Operands None.

Example To deactivate the Platform Database on all switches in the fabric:

```
switch:admin> msPlMgmtDeactivate
Request Fabric to Deactivate Platform Management services...
Done.
switch:admin>
```

See Also `msPlatShow`
`msPlCapabilityShow`
`msPlMgmtActivate`
`msPlClearDB`

nbrStatsClear

Reset FSPF interface counters.

Synopsis `nbrStatsClear [portnumber]`

Availability All users

Description Use this command to reset the counters of FSPF frames transmitted and received on an interface.
Use this command with no operand to reset counters on all interfaces.

Operands This command has the following operand:

`portnumber` Specify the port number for the counters to be reset. This operand is optional.

Examples To display how to reset the counters on port 4:

```
switch:admin> interfaceShow 4
idbP                = 0x10f61f40
Interface 4 data structure:
nghbP               = 0x10f61d90
ifNo                = 4
defaultCost         = 1000
cost                = 1000
delay               = 1
lastScn             = 5
lastScnTime         = Mar 29 12:57:52.833
upCount             = 2
lastUpTime          = Mar 29 12:57:52.833
downCount           = 1
lastDownTime        = Mar 29 12:57:47.566
downReason          = 2
iState              = UP
Type <CR> to continue, Q<CR> to stop:
Neighbor 4 data structure:
state               = NB_ST_FULL
lastTransition      = Mar 29 12:57:52.865
nghbCap             = 0x0
nghbId              = 2
idbNo               = 4
remPort             = 1
nflags              = 0x3

< ... sample output truncated ... >
```

See Also `interfaceShow`
`portShow`
`switchShow`

nbrStateShow

Display FSPF neighbor's state.

Synopsis `nbrStateShow [portnumber]`

Availability All users

Description Use this command to display information about neighbors to the local switch, or information about a specific neighbor if a port number is supplied. A neighbor is a switch that is directly attached to the local switch.

The display shows the following fields:

Table 1-10 nbrStateShow display fields

Field	Description
Local Domain ID:	Domain number of local switch.
Local Port:	E_Port (interface) on local switch.
Domain:	Domain number of remote switch.
Remote Port:	E_Port (interface) on remote switch.
State:	State of the neighbor. The E_Port is used to route frames only if the neighbor is in NB_ST_FULL state.

Operands This command has the following operand:

`portnumber` Specify the port on the local switch that connects to the neighbor being displayed.

Examples To display information about switches directly connected to the local switch:

```
switch:admin> nbrStateShow
Local Domain ID: 15
Local Port      Domain      Remote Port  State
-----
2               13         13          NB_ST_FULL
6               13         9           NB_ST_FULL
7               13         8           NB_ST_FULL
13             3          7           NB_ST_FULL
```

See Also `interfaceShow`

nsAllShow

Display global Name Server information.

Synopsis nsAllShow [type]

Availability All users

Description Use this command to display the 24-bit fibre channel addresses of all devices in all switches in the fabric. If the operand `type` is supplied, only devices of specified FC-PH type are displayed. If `type` is omitted, all devices are displayed.

Operands This command has the following operand:

`type` Specify the FC-PH type code.

Example To display all devices in the Fabric, followed by all type 8 (SCSI-FCP) devices:

```
switch:admin> nsAllShow
  12 Nx_Ports in the Fabric {
  011000 011200 0118e2 0118e4 0118e8 0118ef 021200 021300
  0214e2 0214e4 0214e8 0214ef
  }
switch:admin> nsAllShow 8
  8 FCP Ports {
  0118e2 0118e4 0118e8 0118ef 0214e2 0214e4 0214e8 0214ef
  }
switch:admin> nsAllShow 5
  2 FC-IP Ports in the Fabric {
  011200 021200}
```

See Also nsShow

switchShow

nsShow

Display local Name Server information.

Synopsis nsShow

Availability All users

Description Use this command to display local Name Server information, including information about devices connected to this switch, and cached information about devices connected to other switches in the fabric.

The following message is displayed if there is no information in this switch:

```
There is no entry in the Local Name Server
```

There still may be devices connected to other switches in the fabric. The command `nsAllShow` displays information from all switches.

Each line of output shows:

*	Indicates a cached entry from another switch.
Type	U for unknown, N for N_Port, NL for NL_Port.
Pid	24-bit fibre channel address.
COS	List of classes of service supported by device.
PortName	Device port worldwide name.
NodeName	Device node worldwide name.
TTL	Time-to-live (in seconds) for cached entries, or na (not applicable) if the entry is local.

There may be additional lines if the device has registered any of the following information (the switch automatically registers SCSI inquiry data for FCP target devices):

- FC4s supported
- IP address
- IPA
- Port and node symbolic names
- Fabric port name
- hard address and/or port IP address

Operands None.

Example To display local name server information:

```
switch:admin> nsShow
The Local Name Server has 7 entries {
Type Pid      COS      PortName                               NodeName                               TTL(sec)
*N   011200;     2,3;10:00:00:60:69:00:ab:ba;10:00:00:60:69:00:ab:ba; 60
    FC4s: FCIP
N   021200;     2,3;10:00:00:60:69:00:03:19;30:00:00:60:69:00:03:19; na
    FC4s: FCIP
N   021300;     3;10:00:00:60:69:00:02:d6;20:00:00:60:69:00:02:d6; na
NL  0214e2;     3;21:00:00:fa:ce:00:21:1e;20:00:00:fa:ce:00:21:1e; na
    FC4s: FCP [STOREX RS2999FCPH3      MT09]
NL  0214e4;     3;21:00:00:fa:ce:00:21:e1;20:00:00:fa:ce:00:21:e1; na
    FC4s: FCP [STOREX RS2999FCPH3      CD09]
NL  0214e8;     3;21:00:00:fa:ce:04:83:c9;20:00:00:fa:ce:04:83:c9; na
    FC4s: FCP [STOREX RS2999FCPH3      NS09]
NL  0214ef;     3;21:00:00:ad:bc:04:6f:70;20:00:00:ad:bc:04:6f:70; na
    FC4s: FCP [STOREX RS2999FCPH3      JB09]
}
```

See Also nsAllShow
switchShow

parityCheck

Enable or disable DRAM parity checking.

Synopsis `parityCheck [mode]`

Availability admin

Description This command enables DRAM parity checking. The mode is saved in flash memory and stays in that mode until the next execution of `parityCheck`.

The mode becomes active as soon as this command is executed. It does not require a reboot to take effect.

The DRAM parity checking, when enabled causes `ramTest` to perform several additional tests of the parity memory. It also enables the parity checking hardware to verify proper parity on all DRAM read operations. DRAM parity checking is only available on specific switch models. If the current switch does not support parity checking an error is displayed.

Operands This command has the following operand:

`mode` Specify a 1 to enable DRAM parity checking or specify a 0 to disable it. The default (if no operand is specified) is to disable parity checking.

Example To enable and disable DRAM parity checking:

```
switch:admin> parityCheck 1
Committing configuration...done.
Parity check is now ON.

switch:admin> parityCheck 0
Committing configuration...done.
Parity check is now OFF.

switch:admin> parityCheck 0
Parity not supported on system model: 4
Parity check already OFF.
```

See Also `ramTest`

passwd

Change system login name and password.

Synopsis `passwd ["user"]`

Availability All users

Description Use this command to change the system login name and password.

To change the login name and password for a specific user, enter the command with the optional "user" operand.

To change the login names and passwords for all users up to and including the current user's security level, enter the command without the "user" operand.

In either case, the user is first prompted to change the login name. The current login name is shown in brackets. Enter a new login name on this line or enter a carriage return to leave the previous login name. If the login name supplied is not already in use by another user, the user is then prompted for the old password. If the password entered matches the current password, the user is then prompted twice for the new password. If the two copies do not match, the process is repeated at most two more times until the command fails for that user.

The password must have from 8 to 40 characters. You can change the login name without changing the associated password.

Use the following options to control input:

Return	When entered at a prompt with no preceding input, accepts the default value (if applicable) and moves to the next prompt.
Control-C (interrupt)*	Aborts the command immediately and ignores all changes made.
Control-D (end of file)*	When entered at a prompt with no preceding input, terminates the command and saves changes made.

* On most computers; however, your settings could be different.

Operands This command has the following operand:

`user` Specify the name of the user, in quotation marks, for whom the login name and password are to be changed. This operand is optional.

Example To change the admin user name and password:

```
switch:admin> passwd "admin"
New username [admin]: maint
Old password: *****
New password: *****
Re-enter new password: *****
Committing configuration...done.
```

Errors All error messages are preceded by the command name with one of the following messages appended:

"user" is not a valid user name.	You have not specified a user name that is a valid, recognized user name on the system.
Permission denied.	You do not have permission to change the login name or password specified.
That user name is already being used.	You cannot change the user name to that of a previously existing user.
Incorrect password.	You have not entered the correct password when prompted for the old password.
Password unchanged.	You have entered the carriage return special input case, choosing not to change the password.
Number of failure attempts exceeded.	You have made 3 unsuccessful attempts to enter and verify a new password.
Passwords do not match; try again.	You have not correctly verified the new password.

See Also login
logout

portCfgEport

Enable or disable a port from becoming an E_Port.

Synopsis `portCfgEport [<port_number>, <mode>]`

Availability admin

Description This command allows a user to enable/disable a port from becoming an E_Port. The E_Port capability is enabled by default unless this command is used to disable it.

When a port is configured as a non-E_Port through this command, an ISL connected to this port will be segmented. No data traffic between two switches will be routed through this port. Fabric management data, such as zoning information will not be exchanged through this port either.

The configuration is saved in the non-volatile memory and is persistent across switch reboot or power cycle.

Operands The following operands are optional:

`port_number` Specify the port number to be configured. Valid values are 0-7 or 0-15 depending on the switch type.

`mode` Specify 1 or 0 to enable or disable a port as an E_Port. Specify 1 to enable the port to become an E_Port. This is the default port state. Specify 0 to disable the port from becoming an E_Port. When the `port_number` operand is present, the `mode` operand must also be present.

When no operand is specified, the command reports a list of ports that are disabled from becoming E_Ports.

Example To disable port 3 from becoming an E_Port:

```
switch:admin> portCfgEport 3, 0
Committing configuration...done.
switch:admin> portCfgEport
Ports:   0   1   2   3   4   5   6   7
-----
        -   -   -   NO   -   -   -   -
```

See Also `portShow`
`switchShow`

portCfgGport

Designates a port as a locked G_Port.

Synopsis `portCfgGport portnumber, mode`

Availability admin

Description This command enables a user to designate a port as a locked G_Port. Once this is done, the switch attempts to initialize that port as an F_Port only, and does not attempt loop initialization (FL_Port) on the port. However, if the device attached to the port initiates loop communication, then the switch responds accordingly and the port can then become an FL_Port. Similarly, a port designated as a G_Port can become an E_Port.

Locking a port as a G_Port only changes the actions initiated by the switch; it does not change how the switch responds to initialization requests.

The configuration is saved in the non-volatile memory and is persistent across switch reboot or power cycle.

Operands This command has the following operands:

`portnumber` Specify the port number to be configured. Valid values are 0-7 or 0-15, depending on the switch type. This operand is required.

`mode` Specify a value of 1 to designate the port as a G_Port.
Specify a value of 0 to remove the G_Port designation from the port. This is the default port state. This operand is required.

Example The following example configures switch port 3 as a locked G_Port:

```
switch:admin> portCfgGport 3, 1
Committing configuration...done.
```

See Also `portShow`
`switchShow`
`configure`

portCfgLport

Lock a port as an L_PORT.

Synopsis `portCfgLport port_number mode`

Availability admin

Description This command enables a user to designate a port as an L_PORT. The switch will then only attempt to initialize that port as an FL_PORT. The switch will never attempt point-to-point (F_PORT) initialization on the port. However, if the device attached to the port initiates point-to-point communication, then the switch will respond accordingly, and the port may then become an F_PORT.

Similarly, being locked as an L_PORT will not prevent the port from becoming an E_PORT. Locking a port as an L_PORT only affects what actions the switch initiates. It does not change how the switch responds to initialization requests.

Operands The following Operands are required:

`port_number` The port number to be configured: 0-7 or 0-15.

`mode` Specify a value of 1 if the "port_number" is designated as a locked L_PORT.
Specify a value of 0 if the "port_number" de-configured from its previous role as a locked L_PORT..

Example To configure switch port 3 as a locked L_PORT:

```
switch:admin> portCfgLport 3, 1
Committing configuration...done.
```

See Also `portShow`
`switchShow`
`configure`

portCfgLongDistance

Configure a port to support long distance links.

Synopsis `portCfgLongDistance portnumber [0|1|2]`

Availability admin. The BROCADE EXTENDED FABRICS license key is required to use this command.

Description Use this command to specify the allocation of enough full size frame buffers on a particular port to support a long distance link of up to 100 km. The port can be used as either an Fx_Port or an E_Port. The configuration is saved in the non-volatile memory and is persistent across switch reboot or power cycle.

When this command is invoked without the optional operand, you are prompted to enter the long distance level number. The level value must be one of the following:

- 0 Reconfigures port as a regular switch port. The number of buffers reserved for the port supports links up to 10 km.
- 1 Level one long distance, up to 50 km. A total of 27 full size frame buffers are reserved for the port.
- 2 Level two long distance, up to 100 km. A total of 60 full size frame buffers are reserved for the port.

You can cancel the configuration update by entering CTRL + D.

When a port is configured to be a long distance port, the output of `portShow` and `switchShow` displays the long distance level. In the `portShow` output, the long distance level is indicated as "medium" for level 1 long distance, and "long" for level 2 long distance. In the `switchShow` output, the format is Lx, where x is the long distance level number, except for level 0, which is not displayed in `switchShow`.

Note: Refer to the *BROCADE EXTENDED FABRICS User's Guide* for more information.

Operands This command has the following operands:

`portnumber` The port number to be configured: 0-7 or 0-15. This operand is required.

`0|1|2` This operand indicates the distance to the connected port. This operand is optional. The valid values for this operand are:
0 = reconfigure port to be regular switch port
1 = level one long distance (up to 50 km)
2 = level two long distance (up to 100 km)

Limitations A group of four adjacent ports that share a common pool of frame buffers (for example, ports 0 - 3 or 4 - 7) are called a "quad". Since the total number of frame buffers in a quad is limited, if one of the ports in the quad is configured as a long distance port, none of the remaining ports in the quad can be a long distance port; they must all be level 0 ports.

In order to have a long distance port take effect, all switches in the fabric must be configured to run in long distance fabric mode (in other words, the long distance fabric mode bit must be "on", or set to 1). Otherwise, the fabric will be segmented. A long distance port cannot be configured in a switch unless the long distance fabric mode is on for that switch.

If all ports are reconfigured back to non-long distance ports, the long distance fabric mode must be set to "off" for that switch.

Example To configure switch port 3 to support a 100 km link:

```
switch:admin> portCfgLongDistance 3
Please enter the long distance level -- : (0..2) [0] 2
Committing configuration...done.
```

See Also `configure`
`portShow`
`switchShow`

portcfgMcastLoopback

Configure a port to receive multicast frames.

Synopsis `portCfgMcastLoopback portnumber, 0|1`

Availability admin

Description Use this command to configure a port to receive multicast frames. This command allows a user to dedicate an unused port in a leaf (edge) switch, with no F_Port belonging to a multicast group, to receive multicast frames.

When multicast frames are received at an edge switch with no member port, traffic will throttle down in the KBytes/Second range as embedded processor intervention is required to process it.

However when a port is assigned as the multicast loopback port, frames destined for any multicast group will be routed to that multicast loopback port where it is loopbacked to the port's receiver which is turned off. This effectively sends the frames to a black hole. Since embedded processor is not involved, traffic moves at normal (and full) speed.

Executing this command on a branch (middle) switch will not affect traffic. It can be configured for future use as an edge switch. The disadvantage is that the port cannot be used to connect to other devices.

The configuration is saved in the non-volatile memory and is persistent across switch reboot or power cycle.

The user will be prompted if:

- The selected port is already in use as an E_Port, or Fx_Port,
- The switch is a branch (middle) switch.

A warning message is printed if another port is already configured as the multicast loopback.

When a port is configured as multicast loopback port:

- Its port LED will blink a slow green indicating a loopback state. Its laser, if optical GBIC'ed, will be disabled. It will not respond to any attempt to connect it to any device.

- The comment field of switchShow will show that it is looped back to itself like so:

```
"port 3: sw No_Light Loopback->3"
```

- The portFlags line of portShow will display the "F_PORT" and "INT_LB" flags like so:

```
"portFlags: 0x20249 PRESENT F_PORT U_PORT INT_LB LED"
```

- mcastShow will show the port as a member in its "Member Ports" column.

Operands This command has the following operands:

`portnumber` Specify the port number to be configured. Valid values are 0-7 or 0-15 depending on the switch type. This operand is required.

`0|1` Specify the value 1 and the "portnumber" is dedicated as a multicast loopback port. Specify the value 0 and the "portnumber" is de-configured from its previous role as a multicast loopback port. This operand is required.

Example To configure switch port 3 as a multicast loopback port:

```
switch:admin> portCfgMcastLoopback 3, 1  
Committing configuration...done.
```

See Also portShow
switchShow
mcastShow
configure

portDisable

Disable a switch port.

Synopsis `portDisable portnumber`

Availability admin

Description Use this command to disable a switch port. If the port is connected to another switch, the fabric may reconfigure. If the port is connected to one or more devices, the devices can no longer communicate with the fabric.

If the port was online before being disabled, the following indicate a state transition: RSCN, SNMP trap, Web pop-up window.

The front panel LED of a disabled port flashes yellow with a two second cycle.

Operands This command has the following operand:

`portnumber` Specify the port number to be disabled. Valid values are 0-7 or 0-15 depending on the switch type. This operand is required.

Example To disable port 4:

```
switch:admin> portDisable 4
```

See Also `portEnable`
`portShow`
`switchShow`

portEnable

Enable a switch port.

Synopsis `portEnable portnumber`

Availability admin

Description Use this command to enable a switch port. If the port is connected to another switch, the fabric may reconfigure. If the port is connected to one or more devices, the devices can communicate with the fabric.

For ports that come online after being enabled, the following indications may be sent to indicate a state transition: RSCN, SNMP trap, Web pop-up window.

The front panel LED of an enabled and online port is green.

Operands This command has the following operand:

`portnumber` Specify the port number to be enabled. Valid values are 0-7 or 0-15 depending on the switch type. This operand is required.

Example To enable port 4:

```
switch:admin> portEnable 4
```

See Also `portDisable`
`portShow`
`switchShow`

portErrShow

Display port error summary.

Synopsis portErrShow

Availability All users

Description Use this command to display an error summary for all ports. The display contains one output line per port and shows error counters in ones, thousands (K), or millions (M).

The following fields are displayed:

frames tx	Frames transmitted.
frames rx	Frames received.
enc in	Encoding errors inside frames.
crc err	Frames with CRC errors.
too shrt	Frames shorter than minimum.
too long	Frames longer than maximum.
bad eof	Frames with bad end-of-frame delimiters.
enc out	Encoding error outside of frames.
disc c3	Class 3 frames discarded.
link fail	Link failures (LF1 or LF2 states).
loss sync	Loss of synchronization.
loss sig	Loss of signal.
frjt	Frames rejected with F_RJT.
fbsy	Frames busied with F_BSY.

Operands None.

Example The following example shows an eight port switch. Notice in the example below that port six has a high number of errors and should be examined:

```
switch:admin> portErrShow

frames  enc  crc  too  too  bad  enc  disc  link  loss  loss  frjt  fbsy
tx      rx  in  err  shrt long eof  out  c3   fail sync  sig
-----
0:      0    0  0    0    0    0    0    0    0    0    0    1    0    0
1:  2.5m  38  0    0    0    0    0    2    0    0    1    1    0    0
2:      0    0  0    0    0    0    0    0    0    0    0    1    0    0
3:  95k   15k 0    0    0    0    0    3    0    0    1    0    0    0
4:      0    0  0    0    0    0    0    0    0    0    0    1    0    0
5:      0    0  0    0    0    0    0    0    0    0    0    1    0    0
6:  61k   48  2   15  0    0    0    3k  0    0    2    0    0    0
7:      0    0  0    0    0    0    0    0    0    0    0    1    0    0
```

See Also portShow
portStatsShow

portLogClear

Clear the port log.

Synopsis portLogClear

Availability admin

Description Use this command to clear the port log.

You may want to clear the port log before triggering an activity so that the log displays only the activity related to that activity. See `portLogShow` for a description of the port log.

If the port log is disabled, `portLogClear` enables it. Certain errors automatically disable the port log to preserve information needed to understand the error (new events are not collected so that existing information is not over-written).

Operands None.

Example To clear the port log:

```
switch:admin> portLogClear
switch:admin> portLogShow
port log is empty
```

Errors The following errors disable the port log:

FCIU, IUBAD
FCIU, IUCOUNT
FCPH, EXCHBAD
FCPH, EXCHFEE
NBFSM, DUPEPORTSCN
UCAST, RELICPDB

See Also portLogDump

portLogShow

portLogDump

Display the port log without page breaks.

Synopsis `portLogDump [count[, saved]]`

Availability All users

Description Use this command to display the port log, listing all entries in the log without page breaks. This command displays the same information as `portLogShow`, but `portLogShow` prompts the user to enter ‘returns’ between each page.

See `portLogShow` for a description of the port log.

If the port log is disabled, the following message appears as the first line (see `portLogClear` for details):

```
WARNING: port log is disabled
```

Operands This command has the following operands:

`count` Specify the maximum number of lines to be displayed. Only the most recent `count` entries are displayed. This operand is optional.

`saved` Specify a nonzero value to display the saved port log from the last switch fault. See `uptime` for conditions that cause a fault. `count` is ignored when displaying the saved log. This operand is optional.

Example To display the port log:

```
switch:admin> portlogdump 10
May 1      task      event port  cmd  args
-----
16:51:15.499 tShell    ioctl  7    de  10f9bb90,0
16:51:15.499 tShell    ioctl  8    de  10f9bb90,0
16:51:15.499 tShell    ioctl  9    de  10f9bb90,0
16:51:15.499 tShell    ioctl  10   de  10f9bb90,0
16:51:15.499 tShell    ioctl  11   de  10f9bb90,0
16:51:15.499 tShell    ioctl  12   de  10f9bb90,0
16:51:15.499 tShell    ioctl  13   de  10f9bb90,0
16:51:15.499 tShell    ioctl  14   de  10f9bb90,0
16:51:15.499 tShell    ioctl  15   de  10f9bb90,0
16:58:28.383 tShell    create                tSyslog
Sr99:admin>
```

See Also `portLogClear`

`portLogShow`

`uptime`

portLogShow

Display the port log.

Synopsis `portLogShow [count[, saved]]`

Availability All users

Description Use this command to display the port log; 22 entries are displayed at a time.

`portLogShow` displays the same information as `portLogDump`, but it allows you to enter a “return” after each page of output.

If the port log is disabled, the following message appears as the first line (see `portLogClear` for details):

```
WARNING: port log is disabled
```

The following fields are shown:

Table 1-11 PortLogShow fields

Field	Description
time	Date and time of event. Clock resolution is 16 milliseconds.
task	Name of task that logged the event, or “interrupt” if the event was logged in interrupt context, or “unknown” if the task no longer exists.
event	Possible events are: start switch start or re-start event disable port is disabled enable port is enabled ioctl port I/O control is executed Tx frame is transmitted (class is indicated) Rx frame is received (class is indicated) scn state change notification is posted pstate port changes physical state rejec received frame is rejected busy received frame is busied ctin CT based request is received ctout CT based response is transmitted errlog message is added to the error log loopscn loop state change notification is posted create task is created

Table 1-11 PortLogShow fields (Continued)

Field	Description
port	Port number of the affected port.
cmd	<p>Command value - description depends on event type:</p> <p>ioctl I/O control command code</p> <p>Tx & Rx frame payload size</p> <p>scn new state (see state codes below)</p> <p>pstate new physical state (see pstate codes below)</p> <p>ctin CT-subtype: f c = Simple Name Server, f 8 = Alias Server.</p> <p>ctout same as ctin above.</p> <p>errlog error level (see errShow)</p> <p>loopscn current loop state during loop initialization. Possible values are:</p> <ul style="list-style-type: none"> • OLP - offline (disconnected or nonparticipating) • LIP - FL_Port entered INITIALIZING or OPEN_INIT state • LIM - LISM completed, FL_Port became the loop master • BMP - loop initialization completed, FL_Port in MONITORING state • OLD - port transited to the OLD_PORT state • TMO - loop initialization times out

Table 1-11 PortLogShow fields (Continued)

Field	Description
port	Port number of the affected port.
cmd	<p>Command value - description depends on event type:</p> <p>ioctl I/O control command code</p> <p>Tx & Rx frame payload size</p> <p>scn new state (see state codes below)</p> <p>pstate new physical state (see pstate codes below)</p> <p>ctin CT-subtype: fc = Simple Name Server, f8 = Alias Server.</p> <p>ctout same as ctin above.</p> <p>errlog error level (see errShow)</p> <p>loopscn current loop state during loop initialization. Possible values are:</p> <ul style="list-style-type: none"> • OLP - offline (disconnected or nonparticipating) • LIP - FL_Port entered INITIALIZING or OPEN_INIT state • LIM - LISM completed, FL_Port became the loop master • BMP - loop initialization completed, FL_Port in MONITORING state • OLD - port transited to the OLD_PORT state • TMO - loop initialization times out

Table 1-11 PortLogShow fields (Continued)

Field	Description
args	The command arguments - description depends on event type:
star	start type: 0 = enable ports, 100 = disable ports
disable	state (see state codes below)
enable	mode: 0 = normal, non-zero = loopback
ioctl	I/O control arguments
Tx & Rx	first two header words and first payload word
reject	FC-PH reject reason
busy	FC-PH busy reason
ctin	Argument 0 is divided into two 16-bit fields:
[A]	bit map indicating validity of subsequent args (0001 = argument 1 is valid, 0003 = arguments 1 and 2 are valid).
[B]	ct-based service command code. Argument 1 = first word of the CT payload, if applicable (as specified in [A]). Argument 2 = second word of the CT payload, if applicable (as specified in [A]).
ctout	Argument 0 is divided into two 16-bit fields:
[A]	bit map indicating validity of subsequent args (0001 = argument 1 is valid, 0003 = arguments 1 and 2 are valid).
[B]	CT command code indicating an accept (8002) or a reject (8001). If [B] is an accept, argument 1 and 2 represents the first and second words of the CT payload, if applicable (as specified in [A]). If [B] is a reject, argument 1 contains the CT reject reason and explanation code.
errlog	error type (see errShow) create - name of the task being created

Table 1-11 PortLogShow fields (Continued)

Field	Description
loopsn	description depends on loop state:
OLP	offline reason code, usually zero
LIP	reason code for LIPs initiated by FL_Port, if the code value is 800x (x = [1,0xc], see below), or the lower two bytes of the LIP received, if the code value is other than 800x
LIM	usually zero BMP: memory address for the loop bitmap
OLD	usually zero
TMO	encoded value of state when loop initialization timed out . This value is usually equal to the first word of a loop initialization frame payload. Other possible values include:
2	LIP (req. INITIALIZING) timeout
94F0F0	ARB(F0) timeout
40	CLS timeout

Codes:

state	1	Online
	2	Offline
	3	Testing
	4	Faulty
	5	E_Port
	6	F_Port
	7	Segmented
pstate	AC	Active State
	LR1	Link Reset: LR Transmit State
	LR2	Link Reset: LR Receive State
	LR3	Link Reset: LRR Receive State
	LF1	Link Failure: NOS Transmit State
	LF2	Link Failure: NOS Receive State
	OL1	Offline: OLS Transmit State
	OL2	Offline: OLS Receive State
	OL3	Offline: Wait for OLS State

ioctl	90	get virtual channel credits
	91	Set virtual channel credits
	a1	Port is an E_Port
	a2	Port is an F_Port
	a3	Port is segmented
	a4	Domain name is known
	a5	Port enable
	a6	Port disable
	a7	Link reset
	a8	Add unicast route
	a9	Delete unicast route
	aa	Add multicast route
	ab	Delete multicast route
	ac	Unicast path selection done
	ad	Multicast path selection done
	LIP	8001
reason	8002	Start loop after gaining sync
	8003	Restart loop after port reset
	8004	LIP when a loop hangs
	8005	Restart loop if LIP received when sending out ARB(F0)
	8006	LIP when an OPN returns
	8007	Restart loop when LIPs received in OLD_PORT AC state
	8008	Restart loop if loop not empty but E_Port loopback
	8009	LIP as requested by the LINIT ELS received
	800a	LIP as requested by the LPC ELS received
	800b	Restart loop for QuickLoop looplet setup
	800c	Restart loop for QuickLoop looplet re-initialization

Operands This command has the following operands:

count Specify the maximum number of lines to display. Only the most recent count entries are displayed. This operand is optional.

`saved` Specify a non-zero value to display the saved port log from the last switch fault. See `uptime` for a list of conditions that cause a fault. `count` is ignored when displaying the saved log. This operand is optional.

Example The following illustrates a section of the port log with an E_Port coming online. The ELP and EFP exchanges are shown; a name service request was processed.

```
switch:admin> portLogShow 5
May 1          task          event port  cmd  args
-----
06:48:01.623  interrupt  scn    13    2
06:48:02.359  tFspf     ioctl  13    ab  fffffff,10
06:48:04.699  tReceive  Rx     13    0   c0ffffffd,00ffffffd,00bb0045
06:48:07.616  tReceive  Rx     13    40  02ffffffd,00ffffffd,0046ffff,14000000
06:48:07.616  tTransmit Tx     13    0   c0ffffffd,00ffffffd,004600bc
```

See Also `portLogClear`
`portLogDump`
`uptime`

portLoopbackTest

Functional test of port N->N path.

Synopsis `portLoopbackTest [passCount]`

Availability admin

Description Use this command to verify the functional operation of the switch by sending frames from the port N transmitter, and looping the frames back into the same port N receiver. The loopback is done at the parallel loopback path. The path exercised in this test does not include the GBIC nor the fiber cable.

Only one frame is transmitted and received at any one time. No external cable is required to run this test. The port LEDs flicker green rapidly while the test is running.

Below is the test method:

1. Set all ports for parallel loopback.
2. Create a frame F of maximum data size (2112 bytes).
3. Transmit frame F through port N.
4. Pick up the frame from the same port N.
5. Check the 8 statistic error counters for nonzero values:


```
ENC_in, CRC_err, TruncFrm, FrmTooLong, BadEOF, Enc_out, BadOrdSet,
DiscC3
```
6. Check if the transmit, receive or class 3 receiver counters are stuck at some value.
7. Check if the number of frames transmitted is not equal to the number of frames received.
8. Repeat steps 2 through 7 for all ports present until:
 - The number of frames (or `passCount`) requested is reached.
 - All ports are marked bad.

At each pass, the frame is created from a different data type. If seven passes are requested, seven different data types are used in the test. If eight passes are requested, the first seven frames use unique data types, and the eighth is the same as the first. The seven data types are:

1. CSPAT: 0x7e, 0x7e, 0x7e, 0x7e, ...
2. BYTE_LFSR: 0x69, 0x01, 0x02, 0x05, ...
3. CHALF_SQ: 0x4a, 0x4a, 0x4a, 0x4a, ...
4. QUAD_NOT: 0x00, 0xff, 0x00, 0xff, ...
5. CQTR_SQ: 0x78, 0x78, 0x78, 0x78, ...
6. CRPAT: 0xbc, 0xbc, 0x23, 0x47, ...
7. RANDOM: 0x25, 0x7f, 0x6e, 0x9a, ...

Because this test does not include the GBIC and the fiber cable in its test path, use the results from this test in conjunction with the results from `crossPortTest` and `spinSilk` test to determine those switch components that are not functioning properly.

Operands This command has the following operand:

`passCount` Specify the number of times (or number of frames per port) to execute this test. The default value is 0xfffffffffe. This operand is optional.

Example To run the `portLoopbackTest` 100 times:

```
switch:admin> portLoopbackTest 100
Running Port Loopback Test .... passed.
```

Errors Below are possible error messages if failures are detected:

DIAG-INIT

DIAG-PORTDIED

DIAG-XMIT

DIAG-TIMEOUT

DIAG-ERRSTAT

DIAG-STATS

DIAG-DATA

See Also

`camTest`

`centralMemoryTest`

`cmemRetentionTest`

`cmiTest`

`crossPortTest`

`portRegTest`

`ramTest`

`spinSilk`

`sramRetentionTest`

portPerfShow

Display port throughput performance in bytes, kilobytes, or megabytes.

Synopsis `portPerfShow [interval]`

Availability All users

Description Use this command to display throughput information for all ports on the switch (8 or 16 columns depending on the switch model). One output line is displayed per interval (or second if no interval is specified) until `return`, `control-C`, or `control-D` is entered.

Shown are the number of bytes received plus the number of bytes transmitted per interval. Throughput numbers are shown as either bytes, kilobytes (k), or megabytes (m).

Operands This command has the following operand:

`interval` Specify the interval, in seconds, between each sample. This operand is optional.

Example To display port throughput for an 8- port switch:

```
switch:admin> portPerfShow
0   1   2   3   4   5   6   7
-----
0   0   0   0   0   0   0   76m
96  0   96  0   0   96  0   76m
0   0   0   0   0   0   0   76m
```

See Also `portStatsShow`

portRegTest

Bit write/read test of the ASIC SRAMs and registers.

Synopsis portRegTest

Availability admin

Description Use this command to verify that SRAM and register data bits in each ASIC can be independently written and read.

To verify the data bits, write a walking 1 pattern to each location - write a pattern of 0x00000001 to register N, read, and compare to be sure that the pattern is the same. Shift the pattern one bit to the left (to 0x00000002), repeat the write, read, and compare cycle. Shift again and repeat until the last writable bit in register N is reached (0x80000000 for a 32-bit register).

For example, use the following pattern to test a 6-bit register:

1. 0x0001
2. 0x0002
3. 0x0004
4. 0x0008
5. 0x0010
6. 0x0020
7. 0x0040
8. 0x0080
9. 0x0100
10. 0x0200
11. 0x0400
12. 0x0800
13. 0x1000
14. 0x2000
15. 0x4000
16. 0x8000

Repeat the above steps until all ASIC SRAMs and registers have been tested.

Operands None.

Example To run bit write/read test of the ASIC SRAMs and registers:

```
switch:admin> portRegTest
Running Port Register Test .... passed.
```

Errors Below are possible error messages if failures are detected:

DIAG-REGERR

DIAG-REGERR_UNRST

DIAG-BUS_TIMEOUT

See Also

camTest

centralMemoryTest

cmemRetentionTest

cmiTest

crossPortTest

portLoopbackTest

ramTest

spinSilk

sramRetentionTest

portRouteShow

Display routing tables for a port.

Synopsis `portRouteShow portnumber`

Availability All users

Description Use this command to display the port address ID and the contents of the following port routing tables:

External unicast routing table	<p>Shows unicast frame routing to another switch element in the fabric. Output format is</p> <pre>domainnumber: ports_bitmap</pre> <p>where:</p> <p>domainnumber is the switch element number that a unicast frame can reach from the portnumber port.</p> <p>ports_bitmap contains all output ports, in bitmap hex format, that can forward unicast frames from portnumber to domainnumber.</p> <p>This table contains at least one entry for each active port:</p> <pre>local_switch_domainnumber: 0x10000</pre> <p>This is for routing unicast frames designated to the embedded port of the local switch element.</p>
Internal unicast routing table	<p>Lists all ports in the local switch that a unicast frame can reach from portnumber. Format is</p> <pre>destination_port: output_ports_bitmap</pre> <p>Because the destination_port is in the local switch, output_ports_bitmap usually contains one bit with a bit position number representing the destination_port number.</p>
Multicast routing table	<p>Shows multicast frame routing to the destination multicast group. Output format is:</p> <pre>mcast_group_number: (mcast_group_id) ports_bitmap</pre> <p>where</p> <p>mcast_group_number is the multicast group number</p> <p>mcast_group_id is the multicast frame destination ID</p> <p>ports_bitmap is a hex bitmap of all output port numbers that can forward a multicast frame from the portnumber to mcast_group_id</p>
Broadcast routing table	<p>A bitmap, containing all ports reachable by a received broadcast frame. Bit 16 of the bitmap is always set to allow the switch element to receive broadcast frames.</p>

Operands This command has the following operand:

portnumber Specify the port number to be displayed. Valid values are 0-7 or 0-15 depending on the switch type. This operand is required.

Example To display the port routing tables for switch port 3:

```
switch:admin> portRouteShow 3
port address ID: 0x604300
external unicast routing table:
  0: 0x10000
  1: 0x2
internal unicast routing table:
  0: 0x1
  3: 0x4
  6: 0x40
multicast routing table:
broadcast routing table:
  0x10045
```

See Also bcastShow
fabricShow
mcastShow
switchShow
topologyShow
uRouteShow

portShow

Display port status.

Synopsis `portShow portnumber`

Availability All users.

Description Use this command to display status information for a port. Information varies with the switch model and port type. The display shows:

Table 1-12 PortShow display fields

Field	Description	
portFlags	Bit map of port status flags.	
portType	Port type and revision numbers.	
portState	Port SNMP state:	
	Online	up and running
	Offline	not online, portPhys gives details
	Testing	running diagnostics
portPhys	Faulty	failed diagnostics
	Port physical state:	
	No_Card	no interface card present
	No_Module	no module (GBIC or other) present
	No_Light	module not receiving light
	No_Sync	receiving light but out of sync
	In_Sync	receiving light and in sync
	Laser_Flt	module is signaling a laser fault
Port_Flt	port marked faulty	
Diag_Flt	port failed diagnostics	
Lock_Ref	locking to the reference signal	
portScn	Last state change notification for port.	
portRegs	Address of the port hardware registers.	
portData	Address of the port driver private data.	
portId	24-bit D_ID for port.	
portWwn	Port worldwide name.	
Distance	The port's long distance level.	
Interrupts	Total number of interrupts.	
Unknown	Interrupts that are not counted elsewhere.	

Table 1-12 PortShow display fields (Continued)

Field	Description
Lli	Low-level interface (physical state, primitive seqs).
Proc_rqrd	Frames delivered for embedded N_Port processing.
Timed_out	Frames that have timed out.
Rx_flushed	Frames requiring translation.
Tx_unavail	Frames returned from an unavailable transmitter.
Free_buffer	Free buffer available interrupts.
Overrun	Buffer overrun interrupts.
Suspended	Transmission suspended interrupts.
Parity_err	Central memory parity errors.

Operands This command has the following operand:

`portnumber` Specify the port number to be displayed. Valid values are 0-7 or 0-15 depending on the switch type. This operand is required.

Example To display the status for a specified E_Port:

```
switch:admin> portShow 1
portFlags: 0x20041      PRESENT U_PORT LED
portType:  3.1
portState: 2    Offline
portPhys:  4    No_Light
portScn:   0
portRegs:  0x80020000
portData:  0x10fa70a0
portId:    011100
portWwn:   20:01:00:60:69:00:73:71

Distance:  normal

Interrupts:  0          Link_failure: 0          Frjt:          0
Unknown:    0          Loss_of_sync: 0          Fbsy:          0
Lli:        0          Loss_of_sig:  1
Proc_rqrd:  0          Protocol_err: 0
Timed_out:  0          Invalid_word: 0
Rx_flushed: 0          Invalid_crc:  0
Tx_unavail: 0          Delim_err:    0
Free_buffer: 0          Address_err:  0
Overrun:    0          Lr_in:        0
Suspended:  0          Lr_out:       0
Parity_err: 0          Ols_in:       0
                                Ols_out:      0

switch:admin>
```

See Also `switchShow`

portStatsShow

Display port hardware statistics.

Synopsis `portStatsShow portnumber`

Availability All users

Description Use this command to display port hardware statistics counters. The first section, below, is common to all hardware; one of the last two sections (depending on switch type) is shown for loop ports:

<code>stat_wtx</code>	4-byte words transmitted.
<code>stat_wrx</code>	4-byte words received.
<code>stat_ftx</code>	Frames transmitted.
<code>stat_frx</code>	Frames received.
<code>stat_c2_frx</code>	Class 2 frames received.
<code>stat_c3_frx</code>	Class 3 frames received.
<code>stat_lc_rx</code>	Link control frames received.
<code>stat_mc_rx</code>	Multicast frames received.
<code>stat_mc_to</code>	Multicast timeouts.
<code>stat_mc_tx</code>	Multicast frames transmitted.
<code>tim_rdy_pri</code>	Time R_RDY high priority.
<code>tim_txcrd_z</code>	Time BB_credit zero.
<code>er_enc_in</code>	Encoding errors inside frames.
<code>er_crc</code>	Frames with CRC errors.
<code>er_trunc</code>	Frames shorter than minimum.
<code>er_toolong</code>	Frames longer than maximum.
<code>er_bad_eof</code>	Frames with bad end-of-frame.
<code>er_enc_out</code>	Encoding error outside frames.
<code>er_disc_c3</code>	Class 3 frames discarded.
<code>fl_open</code>	Number of OPNyx sent.
<code>fl_opened</code>	Number of OPNyx received.
<code>fl_openfr</code>	Number of OPNfr sent.
<code>fl_cls_idle</code>	CLS sent due to loop idle.
<code>fl_cls_rx</code>	CLS received when OPEN.
<code>fl_bb_stall</code>	OPN/CLS BB_Credit stalls.
<code>fl_cf_alloc</code>	Number of CFIFOs allocated.
<code>fl_cf_opn</code>	CFIFOs delivered when OPENED.

<code>fl_cf_full</code>	Number of CFIFOs full stalls.
<code>fl_cf_na</code>	CFIFO not available stalls.
<code>fl_trig_age</code>	Number of age count triggers.
<code>fl_trig_lp</code>	Number of loop not busy triggers.
<code>open</code>	Number of times the FL_Port entered OPEN state.
<code>transfer</code>	Number of times the FL_Port entered TRANSFER state.
<code>opened</code>	Number of times the FL_Port entered OPENED state.
<code>starve_stop</code>	Loop tenancies stopped due to starvation.
<code>fl_tenancy</code>	Number of times FL_Port had loop tenancy.
<code>nl_tenancy</code>	Number of times NL_Port had loop tenancy.
<code>frame_nozone</code>	Frames rejected due to zone protection.

Operands This command has the following operand:

`portnumber` Specify the port number to be displayed. Valid values are 0-7 or 0-15 depending on the switch type. This operand is required.

Example To display a port with only the basic set of statistics:

```
switch:admin> portStatsShow 3
stat_wtx      1181994    4-byte words transmitted
stat_wrx      1188458    4-byte words received
stat_ftx      95830      Frames transmitted
stat_frx      15564      Frames received
stat_c2_frx   0          Class 2 frames received
stat_c3_frx   93         Class 3 frames received
stat_lc_rx    7735      Link control frames received
stat_mc_rx    0          Multicast frames received
stat_mc_to    0          Multicast timeouts
stat_mc_tx    0          Multicast frames transmitted
tim_rdy_pri   477       Time R_RDY high priority
tim_txcrd_z   0          Time BB_credit zero
er_enc_in     0          Encoding errors inside of frames
er_crc        0          Frames with CRC errors
er_trunc      0          Frames shorter than minimum
er_toolong    0          Frames longer than maximum
er_bad_eof    0          Frames with bad end-of-frame
er_enc_out    3          Encoding error outside of frames
er_disc_c3    0          Class 3 frames discarded
```

See Also `portErrShow`
`portShow`

psShow

Display power supply status.

Synopsis psShow

Availability All users

Description Use this command to display the switch power supply status.

The display format varies with switch model and number of power supplies present.

The status of each supply is shown as:

OK Power supply present and functioning correctly.

absent Power supply not present.

faulty Power supply present but faulty (no power cable, power switch turned off, fuse blown, or other internal error).

After the status line, a power supply identification line may be shown. If present, this line contains manufacture date, part numbers, serial numbers, and other identification information.

Operands None.

Example To view the status of the power supply for the current switch:

```
switch:admin> psShow
Power Supply 1 is OK
9835,DH000000208,60-0000734-01, A,00001, E108302A,01, 803350
Power Supply 2 is OK
9839,DH000000253,60-0000734-01, A,00001, E108302A,01, 803522
```

See Also fanShow
tempShow

quietMode

Toggles shell quiet mode on and off.

Synopsis quietMode [0|1]

Availability All users (display)
admin (set/clear)

Description Use this command to change the output displayed on the switch console (serial port or telnet session).

By default, quiet mode is off and all switch tasks can send output to the console, including output caused by asynchronous events, such as the fabric reconfiguring, or devices logging in.

When quiet mode is on, only output produced by shell commands is shown; asynchronous output produced by other tasks is suppressed.

Turn quiet mode on when driving a telnet session using a script that does not expect asynchronous output.

Operands This command has the following operand:

0|1 Specify to set or clear quiet mode. Valid values are:
0 to clear quiet mode (all tasks can print to the console)
1 to set quiet mode (only shell commands may print)

Example To display the current mode, then reset to ON:

```
switch:admin> quietMode
Quiet Mode is OFF
switch:admin> quietMode 1
Committing configuration...done.
Quiet Mode is now ON
```

See Also ramTest

ramTest

Bit write/read test of SDRAMs in the switch.

Synopsis `ramTest [patternSize]`

Availability admin

Description Use this command to verify the address and data bus of the SDRAMs that serve as the 16MByte CPU memory in the switch.

The test consists of two subtests:

1. The **address subtest** verifies that SDRAM locations can be uniquely accessed.

The method used is to write a unique pattern to each location in the SDRAMs. When all are written, the data is read back from each location and compared against the data previously written. A failure in the test implies that the address path between the CPU and the SDRAMs are faulty resulting in failures to program unique values.

Following is the ramp pattern used in the test:

```
0x57626f42, 0x57626f43, 0x57626f44, 0x57626f45, ...
```

2. The data subtest verifies that each cell in the SDRAMs can be independently written and read, and that there is no short, stuck-at-1, or stuck-at-0 faults between data cells.

The method used is to write pattern D to location N, write the complementary pattern D to location N+1, and then read and compare location N to location N+1. Bump the location to test: N=N+1. Repeat the double write and read until all locations are tested with the following 9 patterns:

- 0x55555555
- 0x69696969
- 0x3c3c3c3c
- 0x1e1e1e1e
- 0x87878787
- 0x14284281
- 0x137ffec8
- 0x0f0f0f0f
- 0x00000000

Since the test requires the operating system to operate which is loaded in the same memory, it does not and cannot test all 16 MB of the memory. Instead it tests the largest portion as given by the OS, which is typically about 13 MB.

Operands This command has the following operand:

`patternSize` If 0 (default), `ramTest` executes all nine patterns in the data subtest. If N, `ramTest` executes N patterns in the data subtest. If N is greater than 9, it is truncated to 9. Only the data subtest is configurable. The address subtest is always executed. This operand is optional.

Example To run a RAM test:

```
switch:admin> ramTest
Running System DRAM Test ..... passed.
```

Errors Below are the possible error messages if failures are detected:

```
DIAG-MEMORY
DIAG-MEMSZ
DIAG-MEMNULL
```

See Also

- camTest
- centralMemoryTest
- cmemRetentionTest
- cmiTest
- crossPortTest
- portLoopbackTest
- portRegTest
- spinSilk
- sramRetentionTest

reboot

Reboot the switch.

Synopsis reboot

Availability admin

Description Use this command to reboot the switch. The reboot takes effect immediately as the switch resets, then executes the normal power-on booting sequence.

While the switch is rebooting, the telnet session is closed and all fibre channel ports are inactive. If the switch was part of a fabric, the remaining switches reconfigure.

Operands None.

Example To reboot the switch:

```
switch:admin> reboot
Rebooting...
```

See Also fastboot

routeHelp

Display routing help commands.

Synopsis routeHelp

Availability admin

Description Use this command to display routing help commands.

Operands None.

Example To view a list of routing related commands:

```
switch:admin> routeHelp

bcastShow          Print broadcast tree information
dlsReset           Turn off Dynamic Load Sharing
dlsSet             Turn on Dynamic Load Sharing
dlsShow            Print state of Dynamic Load Sharing
fspfShow           Print FSPF global information
interfaceShow      Print FSPF interface information
iodReset           Turn off In-Order Delivery
iodSet            Turn on In-Order Delivery
iodShow            Print state of In-Order Delivery
linkCost           Set or print the FSPF cost of a link
LSdbShow           Print Link State Database entry
mcastShow          Print multicast tree information
nbrStateShow       Print neighbor's summary information
nbrStatsClear      Reset FSPF neighbor's counters
topologyShow       Print paths to domain(s)
uRouteConfig       Configure static unicast route
uRouteRemove       Remove static unicast route
uRouteShow         Print port's unicast routing info
```

See Also bcastShow

interfaceShow

uRouteRemove

uRouteShow

setGbicMode

Enable or disable GBIC mode.

Synopsis `setGbicMode [0|1]`

Availability admin

Description Use this command to enable or disable the GBIC mode. If the mode operand is 1, GBIC mode is enabled; if the mode operand is 0, GBIC mode is disabled. The mode is saved in flash memory and stays in the GBIC remains in that mode until the next execution of `setGbicMode`.

The mode becomes active as soon as this command is executed. It does not require a reboot to take effect.

The GBIC mode, when enabled, forces `crossPortTest` and `spinSilk` to limit testing to ports with GBICs present. Consequently, testing is limited to those ports with a suspected problem.

Operands This command has the following operand:

mode Specify whether to enable or disable GBIC mode. Specify 1 to enable GBIC mode or 0 to disable GBIC mode. The default value (if no operand specified) is 0.

Example To enable or disable GBIC mode:

```
switch:admin> setGbicMode 1
Committing configuration...done.
GBIC mode is now ON.

switch:admin> setGbicMode
Committing configuration...done.
GBIC mode is now OFF.
```

See Also `crossPortTest`
`spinSilk`

setSplbMode

Enable or disable 2 port loop-back.

Synopsis setSplbMode [0|1]

Availability admin

Description Use this command to enable SPLB mode if the operand is a 1 and disable the SPLB mode if the operand is a 0. The mode is saved in flash memory and stays in that mode until the next execution of setSplbMode. The mode becomes active as soon as this command is executed. It does not require a reboot to take effect.

The SPLB mode, when enabled, forces spinSilk to disable two port loop-back for M->M connected ports. This may be useful to isolate internal switch problems from GBIC problems since the internal paths are used much less with SPLB mode enabled.

The SPLB mode, when disabled, forces spinsilk to circulate frames between pairs of M->M connected ports as follows:

```
P1 TX >>> P1 RX -> P2 TX >>> P2 RX -> P1 TX
>>> cable or internal loop-back
-> routing table entry
```

The connections between pairs of M->M ports will be chosen to exercise the connections between as many chips (or bloom quadrants) as possible subject to the setting of allow_intra_chip and the availability of pairs of M->M ports.

Any ports that are cross-cabled will be routed to each other in the normal manner regardless of the setting of SPLB mode:

```
P1 TX >>> P2 RX -> P1 TX
P2 TX >>> P1 RX -> P2 TX
```

Operands This command has the following operand:

mode Specify whether to enable or disable SPLB mode. Specify 1 to enable GBIC mode or 0 to disable SPLB mode. The default value (if no operand specified) is 0.

Example To enable or disable a 2 port loop-back:

```
switch:admin> setSplbMode 1
Committing configuration...done.
SPLB mode is now ON.

switch:admin> setSplbMode 0
Committing configuration...done.
SPLB mode is now OFF.
```

See Also setGbicMode
spinSilk

sgroupDelete

Delete a switch group.

Synopsis `sgroupDelete sgName [, force]`

Availability admin

Description This command deletes a switch group. If the parameter is not specified, the command will become an interactive session and the necessary parameters will be prompted. This command makes the same change to all switches in the specified group. It executes on every switch in the group if and only if each switch in the group can perform the action.

Operands This command has the following operands:

`sgName` Specify a character string in quotation marks containing the switch group name to be deleted (for example "MyGroup"). Entering a wrong name will cause this command to terminate without modifying any switch groups. The sgroup name is case sensitive.

`force` Specify the **force** parameter to delete the group even if one or more members of the group failed to execute the command. The entered string must be "**force**".

Example To interactively delete switch group called "MyGroup":

```
switch:admin> sgroupDelete
Please Enter Group Name: [ ] MyGroup
About to DELETE the group with Group name "MyGroup"
ARE YOU SURE (yes, y, no, n): [no] y
Committing configuration...done.
```

This example shows what happens when an invalid group is entered:

```
switch:admin> sgroupDelete "MyPrevGroup"
Group Name "MyPrevGroup" does not exist.
```

See Also `sgroupRename`
`sgroupSet`
`sgroupShow`
`sgroupSupportShow`
`sgroupSwReplace`

sgroupRename

Rename a switch group.

Synopsis sgroupRename ["old_sgName", "new_sgName"]

Availability admin

Description This command renames a specified sgroup name to the given new name. The member list for the renamed group is not modified. If any parameter is not specified, the session will become an interactive session for which all the parameters will be prompted.

Operands This command has the following operands:

oldName Specify a character string in quotation marks containing the sgroup name to be replaced, for example "MyPrevGroupName".

newName Specify a character string in quotation marks containing the new sgroup name, for example "MyNewGroupName".

Example To rename an sgroup:

```
switch:admin> sgroupShow
Group Type          Group Name          Member WWN
=====
S32_6_1             MyPrevGroupName     10:00:00:60:69:00:00:20
                    10:00:00:60:69:20:15:81
                    10:00:00:60:69:10:02:18
                    10:00:00:60:69:20:15:71
                    10:00:00:60:69:00:30:05
                    10:00:00:60:69:00:60:11

switch:admin> sgroupRename "MyPrevGroupName", "MyNewGroupName"
Committing configuration...done.
switch:admin> sgroupShow
Group Type          Group Name          Member WWN
=====
S32_6_1             MyNewGroupName     10:00:00:60:69:00:00:20
                    10:00:00:60:69:20:15:81
                    10:00:00:60:69:10:02:18
                    10:00:00:60:69:20:15:71
                    10:00:00:60:69:00:30:05
                    10:00:00:60:69:00:60:11
```

See Also sgroupDelete
sgroupSet
sgroupShow
sgroupSupportShow
sgroupSwReplace

sgroupSet

Create a switch group.

Synopsis `sgroupSet ["sgType", "sgName", "sgMemberList"]`

Availability admin

Description This command creates a switch group. If any parameter is not specified, the session will become an interactive session for which all the parameters will be prompted.

Operands This command has the following operands:

`sgType` Specify a character string in quotation marks containing the sgroup type, for example "S32_6_1". The given type **MUST** be a valid type. If the type is not valid, this command will be rejected. Valid types are displayed when this command is run interactively.

`sgName` Specify a character string in quotation marks containing the sgroup name, for example "FirstGroup". The given name must have from 1 to 32 characters, comprised of letters, digits or underscores. Spaces are not allowed.

`sgMemberList` Specify a character string in quotation marks containing the sgroup members, for example "1,2,3,4,5,6". This list can be either the WWN format or Domain ID format. If given in Domain ID format, the list will be validated first to ensure that all the specified switch Domains are valid. If given in WWN format, a Warning message may appear if any WWN given is not in the current fabric.

WWN format:

"aa:bb:cc:dd:ee:ff:xx:yy,aa:bb:cc:dd:ee:ff:xx:zz,
aa:bb:cc:dd:ee:ff:xx:ww,...,aa:bb:cc:dd:ee:ff:xx:qq"

Domain ID format:

"domain_ID1,domain_ID2,...,domain_IDx"

Example To set a group called "My Group" of type "S32_6_1" using Domain IDs 1 through 6:

```
switch:admin> sgroupSet "S32_6_1", "MyGroup", "1,2,3,4,5,6"  
Committing configuration...done.
```

To create an sgroup using the interactive form of the **sgroupSet** command:

```
switch:admin> sgroupSet  
Here are the valid sgroup types:  
S32_6_1  
Please Enter Group Type: [S32_6_1] S32_6_1  
Please Enter Group Name: [ ] MyGroup  
Enter member list by domain#? (yes, y, no, n): [yes] n  
For Group Member #1  
enter its WWN (in hex): [00:00:00:00:00:00:00:00] 10:00:00:60:69:00:00:20  
For Group Member #2  
enter its WWN (in hex): [00:00:00:00:00:00:00:00] 10:00:00:60:69:20:15:81  
For Group Member #3  
enter its WWN (in hex): [00:00:00:00:00:00:00:00] 10:00:00:60:69:10:02:18  
For Group Member #4  
enter its WWN (in hex): [00:00:00:00:00:00:00:00] 10:00:00:60:69:20:15:71  
For Group Member #5  
enter its WWN (in hex): [00:00:00:00:00:00:00:00] 10:00:00:60:69:00:30:05  
For Group Member #6  
enter its WWN (in hex): [00:00:00:00:00:00:00:00] 10:00:00:60:69:00:60:11  
Committing configuration...done.
```

See Also sgroupDelete
sgroupRename
sgroupShow
sgroupSupportShow
sgroupSwReplace

sgroupShow

Display switch group configuration information.

Synopsis `sgroupShow ["sgType" | "sgName"]`

Availability all users

Description This command displays switch group information. If no parameter is specified, ALL sgroup definitions will be displayed. If a parameter is specified, ALL sgroups with *sgType* or *sgName* that contain the given parameter string will be displayed.

Operands This command has the following operands:

<i>sgType</i>	Specify a character string in quotation marks containing the sgroup type to be displayed, for example "S32_6_1". This operand must be enclosed in quotation marks.
<i>SgName</i>	Specify a character string in quotation marks containing the sgroup name to be displayed, for example "Group". If no parameter is specified, ALL defined sgroups will be displayed. This operand must be enclosed in quotation marks.

Example To display all switch group configurations:

```
switch:admin> sgroupShow
Group Type      Group Name                               Member WWN
=====
S32_6_1         MyNewGroupName                           10:00:00:60:69:00:00:20
                                                         10:00:00:60:69:10:62:ee
                                                         10:00:00:60:69:10:61:0e
                                                         10:00:00:60:69:10:60:f9
                                                         10:00:00:60:69:10:62:44
                                                         10:00:00:60:69:10:60:a0
```

To display ALL switch groups that contain the key word “Group”:

```
switch:admin> sgroupShow "Group"
Group Type          Group Name          Member WWN
=====
S32_6_1             MyNewGroupName     10:00:00:60:69:00:00:20
                   10:00:00:60:69:20:15:81
                   10:00:00:60:69:10:02:18
                   10:00:00:60:69:20:15:71
                   10:00:00:60:69:00:30:05
                   10:00:00:60:69:00:60:11
```

Note: Since *MyNewGroupName* contains the key word “Group”, it is displayed.

See Also

- sgroupDelete
- sgroupRename
- sgroupSet
- sgroupSupportShow
- sgroupSwReplace

sgroupSupportShow

Displays switch information for all switches within the specified group.

Synopsis `sgroupSupportShow "sgroupName" [, "commandName"]`

Availability All users

Description This command can display a range of debugging information for all the switches in a switch group. If no *commandName* is specified or **all** is specified in place of a command name, all the supported commands are displayed for the all the switches within a switch group. If a single command is specified, only the information for that command is displayed.

Operands This command has the following operands:

`sgroupName` Specify the name of the switch group. This operand must be enclosed in quotation marks. This operand is required.

`commandName` Specify the name of the command to be displayed for the specified switch group. If no command is specified, or **all** is specified, all the supported commands are executed against all the switches within a switch group. Below is a list of command names that are supported in the order they are executed. These command names are not case sensitive. The command must be enclosed in quotation marks. This operand is optional.

<code>version</code>	<code>portRegShow</code>
<code>uptime</code>	<code>portRouteShow</code>
<code>tempShow</code>	<code>fabricShow</code>
<code>psShow</code>	<code>topologyShow</code>
<code>licenseShow</code>	<code>qlShow</code>
<code>diagShow</code>	<code>nsShow</code>
<code>errDump</code>	<code>nsAllShow</code>
<code>switchShow</code>	<code>cfgShow</code>
<code>portFlagsShow</code>	<code>configShow</code>
<code>portErrShow</code>	<code>faultShow</code>
<code>mqShow</code>	<code>traceShow</code>
<code>portSemShow</code>	<code>portLogDump</code>
<code>portShow</code>	

Example To display the temperature in all the switch components of a Silkworm 6400:

```
sw5:admin>sgroupsupportshow "starbase", "tempshow"
Group Type          Group Name          Member WWN
=====
S32_6_1            starbase            10:00:00:60:69:10:57:91
                                     10:00:00:60:69:10:56:79
                                     10:00:00:60:69:10:58:89
                                     10:00:00:60:69:10:57:dd
                                     10:00:00:60:69:10:58:63
                                     10:00:00:60:69:10:58:3f

Please wait for remote data!
value = 0
star7:root>
=====
Information from Local Domain 7
=====
 27  30  31  33  32 Centigrade
 80  86  87  91  89 Fahrenheit
=====
Information from Domain 8
=====
 28  29  32  33  33 Centigrade
 82  84  89  91  91 Fahrenheit
=====
Information from Domain 9
=====
 27  29  33  34  32 Centigrade
 80  84  91  93  89 Fahrenheit
=====
```

```
Information from Domain 10
=====
26  30  31  34  31  Centigrade
78  86  87  93  87  Fahrenheit
=====
Information from Domain 11
=====
28  29  31  33  32  Centigrade
82  84  87  91  89  Fahrenheit
=====
Information from Domain 12
=====
28  31  34  35  33  Centigrade
82  87  93  95  91  Fahrenheit
=====
=====DONE=====
```

See Also sgroupDelete
 sgroupRename
 sgroupSet
 sgroupShow
 sgroupSwReplace

sgroupSwReplace

Replace a member of a switch group.

Synopsis `sgroupSwReplace ["sgName", "oldWwn", "newWwn"]`

Availability admin

Description This command replaces the member with oldWwn in group sgName with the member with newWwn. The order of members within the member list will not be changed by this operation.

If any parameter is not specified, the session will become an interactive session and all the parameters will be prompted.

This command makes the same change to all switches in the specified group. It will execute on every switch in the group if and only if each switch in the group can perform the action.

Operands This command has the following operands:

sgName	Specify the switch group name (for example, "NewGroup") that contains the member you want to replace. The switch group name must be enclosed in quotation marks. This operand is optional.
oldWwn	Specify the WWN of a switch group member (for example, "10:00:00:60:69:20:22:22") that you want to replace. The WWN must be enclosed in quotation marks. This operand is optional.
newWwn	Specify the WWN of the new member (for example, "10:00:00:60:69:20:55:55"). The WWN must be enclosed in quotation marks. This operand is optional.

Example The example shows the non-interactive form of `sgroupSwReplace`. The `sgroupShow` command is used to illustrate the changes made with the `sgroupSwReplace` command. To replace a member of an sgroup:

```
switch:admin> sgroupShow

Group Type      Group Name      Member WWN
=====
S32_6_1        NewGroup        10:00:00:60:69:20:15:71
                10:00:00:60:69:20:15:93
                10:00:00:60:69:20:15:2a
                10:00:00:60:69:20:18:32
                10:00:00:60:69:20:22:22
                10:00:00:60:69:20:64:31

value = 0

switch:admin> sgroupSwReplace "NewGroup", "10:00:00:60:69:20:22:22",
"10:00:00:60:69:20:55:55"

Committing configuration...done.

switch:admin> sgroupShow

Group Type      Group Name      Member WWN
=====
S32_6_1        NewGroup        10:00:00:60:69:20:15:71
                10:00:00:60:69:20:15:93
                10:00:00:60:69:20:15:2a
                10:00:00:60:69:20:18:32
                10:00:00:60:69:20:55:55
                10:00:00:60:69:20:64:31
```

See Also `sgroupDelete`
`sgroupRename`
`sgroupSet`
`sgroupShow`
`sgroupSupportShow`

snmpMibCapSet

View and modify options for configuring SNMP MIB/Trap Capability.

Synopsis snmpMibCapSet

Availability admin

Description This command enables a user to turn on or off certain MIBS and TRAPS. This command also enables a user to turn on or off group information and SSN in SW trap messages. It first displays current settings and then prompts the user to change the values for each parameter.

- FA-MIB - Specifying **yes** means the user can access FA MIB variables with an SNMP manager. The default value is **yes**.
- SW-TRAP - Specifying **yes** means the SNMP management application can receive SW traps from the switch. The default value is **yes**.
- FA-TRAP - Specifying **yes** means the SNMP management application can receive FA traps from the switch. The default value is **yes**.
- SW-EXTTRAP - Specifying **yes** means the user can receive group information such as Group Name, Group Type, and Member Position, and SSN in the SW traps. The default value is **no**.

Operands none

Example To view or modify the options for configuring SNMP MIB traps:

```
switch:admin> snmpmibcapset
The SNMP Mib/Trap Capability has been set to support
FE-MIB SW-MIB FA-MIB SW-TRAP FA-TRAP
FA-MIB (yes, y, no, n): [yes]
SW-TRAP (yes, y, no, n): [yes]
FA-TRAP (yes, y, no, n): [yes]
SW-EXTTRAP (yes, y, no, n): [no]
no change
```

See Also agtcfgShow
agtcfgSet
agtcfgDefault

spinSilk

Functional test of port M->N path at maximum switch speed.

Synopsis `spinSilk [nMillionFrames]`

Availability admin

Description Use this command to verify the functional operation of the switch at the maximum speed of 1Gbps.

To run `spinSilk`, set up the routing hardware so that frames received by port M are retransmitted through port N and frames received by port N are retransmitted through port M. Each port M sends 4 frames to its partner port N using an external fiber cable; this exercises all switch components from the main board, to the GBIC, to the fiber cable, to the GBIC, and back to the main board.

The cables can be connected to any port combination as long as the cables and GBICs connected are of the same technology: a short wavelength GBIC port is connected to another short wavelength GBIC port using a short wavelength cable, and a long wavelength port is connected to a long wavelength port, and a copper port is connected to a copper port.

For best coverage, connect ports from different ASICs. Ports 0-3 belong to ASIC 0, ports 4-7 belong to ASIC 1, etc. A connection from port 0 to port 15 exercises the transmit path between ASICs. A connection from port 0 to port 3 tests only the internal transmit path in ASIC 0.

The frames are continuously transmitted and received in all ports in parallel. The port LEDs flicker green rapidly while the test is running.

Below is the test method:

1. Determine port connections.
2. Enable ports for cabled loopback mode.
3. Configure the routing table to route frames received by port M to the partner port N and vice versa.
4. Transmit 4 frames of different lengths using port M. Below are the 4 frames:

```
2112 bytes of BYTE_LFSR
1000 bytes of CSPAT
128 bytes of RANDOM
512 bytes of RDRAM_PAT
```

The partner port N eventually sends 4 similar frames as follows:

```
2112 bytes of BYTE_LFSR
928 bytes of CSPAT
200 bytes of RANDOM
480 bytes of RDRAM_PAT
```

5. Periodically check each port for the following:
 - each port has not died
 - frames transmitted counter is incrementing
 - statistic error counters are nonzero

ENC_in, CRC_err, TruncFrm, FrmTooLong, BadEOF, Enc_out, BadOrdSet, DiscC3 until one of the following is met:

- the number of million frames requested per port are met
- all ports are marked bad
- the user sends a keyboard (or push button) interrupt to abort

In this test, data is not read and checked and the only CPU intervention is the periodic check of hardware counters.

Below is an example of the data used:

```
CSPAT:          0x7e, 0x7e, 0x7e, 0x7e, ...
BYTE_LFSR:     0x69, 0x01, 0x02, 0x05, ...
RANDOM:        0x25, 0x7f, 0x6e, 0x9a, ...
RDRAM_PAT:    0xff, 0x00, 0xff, 0x00, ...
```

GBIC Mode

If `spinSilk` is executed with GBIC mode activated, only ports containing GBICs are tested. To activate GBIC mode, execute the following command prior to executing `spinSilk`:

```
switch:admin> setGbicMode 1
```

The state of the GBIC mode is saved in flash and it remains active (even after reboots or power cycles) until it is disabled as follows:

```
switch:admin> setGbicMode 0
```

For example, disable the switch, set the GBIC mode to 1, and execute `spinSilk` to limit testing to:

```
only ports containing GBICs
that _all_ GBIC ports that are cable loopbacked
```

Because this test includes the GBIC and the fiber cable in its test path, use the results from this test in conjunction with the results from `crossPortTest` and `portLoopbackTest` to determine those switch components that are not functioning properly.

Operands This command has the following operand:

`nMillionFrames`

Specify the number of million frames per port to execute this test. If omitted, the default `passCount` value is `0xfffffffffe`. This operand is optional.

Example To verify the functionality of a switch:

```
switch:admin> spinSilk 2
Running Spin Silk .....
One moment please ...
switchName:      switch
switchType:      2.2
switchState:     Testing
switchRole:      Disabled
switchDomain:    1 (unconfirmed)
switchId:        fffc01
switchWwn:       10:00:00:60:69:00:73:71
port 0: cu Testing Loopback->15
port 1: sw Testing Loopback->11
port 2: sw Testing Loopback->6
port 3: lw Testing Loopback->4
port 4: lw Testing Loopback->3
port 5: sw Testing Loopback->8
port 6: sw Testing Loopback->2
port 7: sw Testing Loopback->12
port 8: sw Testing Loopback->5
port 9: sw Testing Loopback->14
port 10: sw Testing Loopback->13
port 11: sw Testing Loopback->1
port 12: sw Testing Loopback->7
port 13: sw Testing Loopback->10
port 14: sw Testing Loopback->9
port 15: cu Testing Loopback->0

Transmitting ... done.
Spinning ...
port 0 Rx/Tx 1 of 1 million frames.
port 1 Rx/Tx 1 of 1 million frames.
port 2 Rx/Tx 1 of 1 million frames.
port 3 Rx/Tx 1 of 1 million frames.
port 4 Rx/Tx 1 of 1 million frames.
port 5 Rx/Tx 1 of 1 million frames.
port 6 Rx/Tx 1 of 1 million frames.
port 7 Rx/Tx 1 of 1 million frames.
port 8 Rx/Tx 1 of 1 million frames.
port 9 Rx/Tx 1 of 1 million frames.
port 10 Rx/Tx 1 of 1 million frames.
port 11 Rx/Tx 1 of 1 million frames.
port 12 Rx/Tx 1 of 1 million frames.
port 13 Rx/Tx 1 of 1 million frames.
port 14 Rx/Tx 1 of 1 million frames.
port 15 Rx/Tx 1 of 1 million frames.
```

```

Diagnostics Status:  Tue Apr  6 04:10:12 1999
port#:  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
diags: OK OK OK OK OK OK OK OK OK OK OK OK OK OK OK OK
state: UP UP UP UP UP UP UP UP UP UP UP UP UP UP UP UP

lm0:  2059619 frTx  2052666 frRx  0 LLI_errs.  <looped-15>
lm1:  2054565 frTx  2052620 frRx  0 LLI_errs.  <looped-11>
lm2:  2050424 frTx  2048321 frRx  0 LLI_errs.  <looped-6>
lm3:  2053094 frTx  2042762 frRx  0 LLI_errs.  <looped-4>
lm4:  2042957 frTx  2053290 frRx  0 LLI_errs.  <looped-3>
lm5:  2056586 frTx  2053910 frRx  0 LLI_errs.  <looped-8>
lm6:  2048992 frTx  2048569 frRx  0 LLI_errs.  <looped-12>
lm9:  2039595 frTx  2051975 frRx  0 LLI_errs.  <looped-14>
lm10: 2050130 frTx  2052565 frRx  0 LLI_errs.  <looped-13>
lm11: 2054678 frTx  2056622 frRx  0 LLI_errs.  <looped-1>
lm12: 2049707 frTx  2050131 frRx  0 LLI_errs.  <looped-7>
lm13: 2053410 frTx  2050976 frRx  0 LLI_errs.  <looped-10>
lm14: 2053358 frTx  2040971 frRx  0 LLI_errs.  <looped-9>
lm15: 2056132 frTx  2063094 frRx  0 LLI_errs.  <looped-0>

Central Memory OK
Total Diag Frames Tx: 31712
Total Diag Frames Rx: 32816
value = 0

```

Errors Below are the possible error messages if failures are detected:

```

DIAG-INIT
DIAG-PORTDIED
DIAG-XMIT
DIAG-PORTSTOPPED
DIAG-ERRSTAT
DIAG-ERRSTATS

```

See Also

```

camTest
centralMemoryTest
cmemRetentionTest
cmiTest
crossPortTest
portLoopbackTest
portRegTest
ramTest
sramRetentionTest

```

sramRetentionTest

Data retention test of the miscellaneous SRAMs in ASIC.

Synopsis `sramRetentionTest [passCount]`

Availability admin

Description Use this command to verify that data written into the miscellaneous SRAMs in the ASIC are retained after a 10 second wait.

The method used is to write a fill pattern to all SRAMs, wait 10 seconds, and then read all SRAMs checking that data read matches data previously written. Repeat using the complementary version of the pattern.

The following patterns are used:

```
0xffffffff (and 0x00000000)
0x55555555 (and 0xaaaaaaaa)
0x33333333 (and 0xcccccccc)
0x0f0f0f0f (and 0xf0f0f0f0)
QUAD_RAMP with a random seed value (and its invert)
```

Operands This command has the following operand:

`passCount` Specify the number of times to execute the test. The default value is 1. This command is optional.

Example To run a data retention test:

```
switch:admin> sramRetentionTest
Running SRAM Retention Test ... passed.
```

Errors Below are the possible error messages if failures are detected:

```
DIAG-REGERR
DIAG-REGERR_UNRST
DIAG-BUS_TIMEOUT
```

See Also

- `camTest`
- `centralMemoryTest`
- `cmemRetentionTest`
- `cmiTest`
- `crossPortTest`
- `portLoopbackTest`
- `ramTest`
- `spinSilk`

supportShow

Print switch information for debugging purposes.

Synopsis supportShow [firstPort, lastPort, nLog]

Availability All users

Description Use this command to print the switch information for debugging purposes. This command executes the listed commands in the following order:

1. version
2. uptime
3. tempShow
4. psShow
5. licenseShow
6. diagShow
7. errDump
8. switchShow
9. portFlagsShow
10. portErrShow
11. mqShow
12. portSemShow
13. portShow
14. portRegShow
15. portRouteShow
16. fabricShow
17. topologyShow
18. qlShow
19. nsShow
20. nsAllShow
21. cfgShow
22. configShow
23. faultShow
24. traceShow
25. portLogDump

Operands This command has the following operands:

<code>firstPort</code>	Specify the first port, of a range of ports, to dump information. The default (if no operand specified) is to print state of port 0. If only <code>firstPort</code> is specified, only information for <code>firstPort</code> is printed.
<code>lastPort</code>	Specify the last port, of range of ports, to dump information. If <code>firstPort</code> is specified but <code>lastPort</code> is not specified, only <code>firstPort</code> information is printed for the port based commands (<code>portShow</code> , <code>portRegShow</code> , <code>portRouteShow</code>). If no operand is supplied, <code>firstPort</code> is set to 0 and <code>lastPort</code> is set to maximum port of switch.
<code>nLog</code>	Specify the number of lines of <code>portLogDump</code> to print: <ul style="list-style-type: none"> • 0 = dump all lines (default) • N = dump the last N lines • <0 = skip <code>portLogDump</code>

Example To display switch information for debugging:

```
switch:admin> supportShow
Kernel:      5.3.1

Fabric OS:   v2.1
Made on:    Tue Apr 6 16:57:22 PDT 1999
Flash:     Thu Apr 1 10:23:43 PST 1999
BootProm:  Thu Oct 1 13:34:29 PDT 1998

Up for:      12 secs
Powered for: 472 days, 19:15
Last up at:  Tue May  2 10:48:21 2000
Reason:     Reboot

37  34  37  45  49  Centigrade
98  93  98 113 120 Fahrenheit

Power Supply #1 is absent
Power Supply #2 is absent
byRdzdSRxyzSe0D:

Web license

Diagnostics Status: Tue Apr  6 16:22:34 1999

< ... sample output truncated ... >
```

See Also `switchShow`

switchBeacon

Set switch beaconing mode on or off.

Synopsis `switchBeacon 0|1`

Availability admin

Description Use this command to set the switch beaconing mode on (if the operand is 1) or off (if the operand is 0).

When beaconing mode is turned on, the port LEDs flash amber in a running pattern from port 0 to port 15, and then back again. The user sees a running pattern in amber LEDs, from left to right and right to left. The pattern continues until turned off by the user.

Beaconing mode affects only the port LEDs. Other commands are still executable and functional. The normal flashing LED pattern (associated with an active, faulty or disabled port) is suppressed and the beaconing pattern is shown. However, if diagnostic frame based tests (`portLoopbackTest`, `crossPortTest`, and `spinSilk`) are executed, two patterns are interleaved. The diagnostic test flickers the LEDs green and simultaneously the beaconing mode runs the LEDs amber.

Use the `switchShow` command to display the status of beaconing.

Operands This command has the following operand:

0|1 Specify the beaconmode for the switch. Valid values are 0 or 1. Specify 1 to enable beaconmode or 0 to disable beaconmode. This operand is required.

Example To turn beaconing mode ON:

```
switch:admin> switchBeacon 1
```

To turn beaconing mode OFF:

```
switch:admin> switchBeacon 0
```

See Also `switchShow`

switchDisable

Disable the switch.

Synopsis `switchDisable`

Availability `admin`

Description Use this command to disable the switch. All fibre channel ports are taken offline; if the switch was part of a fabric, the remaining switches reconfigure.

The switch must be disabled before making configuration changes (using `configure` or `configDefault`) or before running many of the diagnostic tests. All commands that require the switch to be disabled send an error if invoked while the switch is enabled.

The switch does not need to be disabled before rebooting or powering off.

As each port is disabled, the front panel LED changes to a slow flashing yellow.

Operands None.

Example To disable the switch:

```
switch:admin> switchDisable
```

See Also `switchEnable`

`switchShow`

switchEnable

Enable the switch.

Synopsis `switchEnable`

Availability `admin`

Description Use this command to enable the switch. All fibre channel ports that passed POST are enabled. They can come online if connected to a device, or remain offline if disconnected. A switch may need to be enabled if it was previously disabled to make configuration changes or to run diagnostics.

If the switch is connected to a fabric, it rejoins the fabric. When this command is issued, the 10 second fabric stability count down is displayed. If this switch remains the principal switch at the end of the count down, then it assigns itself a domain ID. If another switch assumes the principal role, then this switch becomes a subordinate switch, and accepts a domain ID from the principal. See FC-SW for a complete description of this process.

As each port is enabled, the front panel LED changes to green for online ports, black for disconnected ports, or yellow for uninitialized ports.

Operands None.

Example To enable a switch:

```
switch:admin> switchEnable
10 9 8 7 6 5 4 3 2 1
fabric: Principal switch
fabric: Domain 1
```

See Also `switchDisable`

`switchShow`

switchName

Display or set switch name.

Synopsis `switchName ["newName"]`

Availability All users (display)
 admin (set)

Description Use this command without a operand to display the current switch name. This name is also shown in the telnet prompt, under each switch icon on the BROCADE WEB TOOLS Fabric View, and in the output of many telnet commands.

Use this command with the `newName` operand to assign a new switch name. Switch names can be up to 19 characters long, must begin with an alpha character, and can consist of a combination of alpha, numeric, and underscore characters.

Changing the switch name causes a domain address format RSCN to be issued (see FC-FLA for a description of RSCNs).

Operands This command has the following operand:

`newName` Specify a new name for the switch, in quotation marks. This operand is optional.

Example To change a switch name to `sw10`:

```
switch:admin> switchName "sw10"  
Updating flash ...  
sw10:admin>
```

See Also `switchShow`
 `fabricShow`

switchShow

Display switch and port status.

Synopsis `switchShow`

Availability All users

Description Use this command to display switch and port status information. Information may vary by switch model. Below is the information provided. The first section provides switch summary information; it is followed by a section covering summary information by port.

Switch summary information:

<code>switchName</code>	Switch symbolic name.
<code>switchType</code>	Switch model and revision numbers.
<code>switchState</code>	Switch state: online, offline, testing, faulty.
<code>switchRole</code>	Switch role: principal, subordinate, disabled.
<code>switchDomain</code>	Switch domain ID: 0-31 or 1-239.
<code>switchId</code>	Switch embedded port D_ID.
<code>switchWwn</code>	Switch worldwide name.
<code>switchBeacon</code>	The switch's beaconing state (either ON or OFF).

The switch summary is followed by one line per port:

`port number` Port number. Valid values are 0-7 or 0-15 depending on the switch type.

`module type` Port module type (GBIC or other):

- no module present

sw - shortwave laser

lw - longwave laser

cu - copper

id - serial ID

`port state` Port state:

No_Card - no interface card present

No_Module - no module (GBIC or other) present

No_Light - module not receiving light

No_Sync - module receiving light but out of sync

In_Sync - module receiving light and in sync

Laser_Flt - module signaling a laser fault

Port_Flt - port marked faulty

Diag_Flt - port failed diagnostics

Lock_Ref - locking to the reference signal

Testing - running diagnostics

Online - port is up and running

comment The comment field may be blank, or it may display:

Disabled - port is disabled

Bypassed - port is bypassed (loop only)

Loopback - port is in loopback mode

E-Port - fabric port, shows WWN of attached switch

F-Port - point-to-point port, shows WWN of attached N_Port

G-Port - point-to-point but not yet E-Port or F-port

L-Port - loop port, shows number of NL_Ports

Operands None.

Example The following illustrates a 16 port switch. Two ports are F_Ports (point-to-point connections to N_Ports), two ports are loop ports (one has 8 private loop devices), and two ports are connected to another switch “sw6”.

```
switch:admin> switchshow
switchName:      switch
switchType:      2.2
switchState:     Online
switchRole:      Principal
switchDomain:     1
switchId:        fffc01
switchWwn:       10:00:00:60:69:00:73:71
switchBeacon:    OFF
port 0: sw No_Light
port 1: sw No_Light
port 2: lw No_Light
port 3: sw No_Light
port 4: sw No_Light
port 5: sw No_Light
port 6: sw No_Light
port 7: sw No_Light
port 8: sw No_Light
port 9: sw No_Light
port 10: -- No_Module
port 11: sw No_Light
port 12: lw No_Light
port 13: sw No_Light
port 14: -- No_Module
port 15: -- No_Module
switch:admin>
```

See Also switchDisable
switchEnable
switchName

switchStatusPolicySet

Set the policy parameters that determine the overall switch status.

Synopsis `switchStatusPolicySet`

Availability admin

Description Use this command to set the policy parameters for calculating the overall status of the switch enclosure. The policy parameter values determine how many failed or faulty units of each contributor are allowed before triggering a status change in the switch from HEALTHY to MARGINAL or DOWN.

The command will print the current parameters in a three column table format. The first column specifies the contributor; the second column specifies the minimum number that contributes to the DOWN/FAILED status; the third column specifies the minimum number that contributes to the MARGINAL/WARNING status. This command then prompts the user to change the values for each policy parameter. The default values for the policy parameters are as follows:

Table 1-13 Contributor Value and Status

Contributor	Default Value for DOWN	Default Value for MARGINAL
FaultyPorts	2	1
MissingGBICs	0	0
PowerSupplies	2	1
Temperatures	2	1
Fans	2	1
PortStatus	0	0
sgroup ISLStatus	2	1

Any single contributor can force the overall status of the switch to MARGINAL or DOWN.

This command enables you to set a threshold for each contributor, so that a certain number of failures are allowed before changing the status of the switch.

If the value of a policy parameter is set to 0, it means that this factor is not used to determine the status of the switch. If the range of values for a particular contributor are set to 0 for both MARGINAL and DOWN, that contributor is not used in the calculation of the overall switch status.

ISLStatus monitors ISLs that are part of a defined switch group. The status of other ISLs on the same switch but outside of the group definition will not be considered when calculating switch status. If no switch groups are defined on this switch, then these ISLStatus settings will have no effect on switch status.

The sgroup ISLStatus does not affect the status of the switch as quickly as the other contributors. It may take a few minutes for a switch group ISL status change to affect the state of the switch.

Note: When PortStatus monitoring is set to values of (0,0), port status changes are not logged to the event log and console. Similarly, GBIC removal does not generate a message to the event log and console if MissingGBICs is set to (0,0). By configuring these options, the user can more closely monitor for port status and/or removal of GBICs.

Operands None.

Example Notice that in the following example, the only parameters modified are the number of FaultyPorts allowed before the status of the switch changes to MARGINAL and DOWN.

```

switch:admin> switchStatusPolicySet
To change the overall switch status policy parameters
The current overall switch status policy parameters:
          Down    Marginal
-----
    FaultyPorts  1        0
    MissingGBICs 0        1
    PowerSupplies 2        1
    Temperatures 2        1
           Fans  2        1
    PortStatus   0        0
sgroup ISLStatus 2        1

```

Note that the value, 0, for a parameter, means that it is NOT used in the calculation.

** In addition, if the range of settable values in the prompt is (0..0),
 ** the policy parameter is NOT applicable to the switch.
 ** Simply hit the Return key.

The minimum number of

```

    FaultyPorts contributing to DOWN status: (0..8) [2]
    FaultyPorts contributing to MARGINAL status: (0..8) [1]
    MissingGBICs contributing to DOWN status: (0..8) [0]
    MissingGBICs contributing to MARGINAL status: (0..8) [0] 1
    Bad PowerSupplies contributing to DOWN status: (0..2) [2]
    Bad PowerSupplies contributing to MARGINAL status: (0..2) [1]
    Bad Temperatures contributing to DOWN status: (0..5) [2]
    Bad Temperatures contributing to MARGINAL status: (0..5) [1]
    Bad Fans contributing to DOWN status: (0..6) [2]
    Bad Fans contributing to MARGINAL status: (0..6) [1]
    Down PortStatus contributing to DOWN status: (0..8) [0]
    Down PortStatus contributing to MARGINAL status: (0..8) [0]
    Down ISLStatus contributing to DOWN status: (0..16) [2]
    Down ISLStatus contributing to MARGINAL status: (0..16) [1]

```

```

Policy parameter set has been changed
... Committing configuration...done.

```

See Also switchStatusPolicyShow
 switchStatusShow

switchStatusPolicyShow

Displays the policy parameters that determine the overall switch status.

Synopsis `switchStatusPolicyShow`

Availability all users

Description Use this command to view the current policy parameters set for the switch. These policy parameters determine the number of failed or non-operational units allowed for each contributor before triggering a status change in the switch.

The command will print the current parameters in a three column table format. The first column specifies the contributor; the second column specifies the minimum number that contributes to the DOWN/FAILED status; the third column specifies the minimum number that contributes to the MARGINAL/WARNING status. The default values for the policy parameters are as follows:

Table 1-14 Contributor Value and Status

Contributor	Default Value for DOWN	Default Value for MARGINAL
FaultyPorts	2	1
MissingGBICs	0	0
PowerSupplies	2	1
Temperatures	2	1
Fans	2	1
PortStatus	0	0
sgroup ISLStatus	2	1

The policy parameters determine the number of failed or non-operational units for each contributor that trigger a status change in the switch. For example, if the FaultyPorts DOWN parameter is set to 3, and 3 ports fail in the switch, then the status of the switch changes to DOWN.

Operands None.

Example To display the switch status policy:

```
switch:admin> switchStatusPolicyShow
The current overall switch status policy parameters:
          Down      Marginal
-----
    FaultyPorts    1         0
    MissingGBICs  0         1
    PowerSupplies  2         1
    Temperatures  3         1
         Fans     3         1
    PortStatus    0         0
sgroup ISLStatus  2         1
```

See Also switchStatusShow
switchStatusPolicySet

switchStatusShow

Displays the overall status of the switch.

Synopsis switchStatusShow

Availability All Users

Description Use this command to display the overall status of the switch. The overall status is calculated based on the most severe status of all contributors:

- Internal Switch Status
- Faulty Ports
- Missing GBICs
- Power Supplies
- Fans
- Temperatures
- Port Status

The overall status can be one of the following:

- Healthy/OK - every contributor is healthy
- Marginal/Warning - one or more components are causing a warning status
- Down/Failed - one or more contributors have failed

If the overall status is not HEALTHY/OK, the contributing factors are listed.

Operands None.

Example There are two examples below. The first shows a switch with a status of MARGINAL, the second shows the same switch after all the errors have been fixed.

```
switch:admin> switchStatusShow
The overall switch status is Marginal/Warning
Contributing factors:
* 1 missing power supply triggered the Marginal/Warning status
* 2 bad fans, 4 good fans triggered the Marginal/Warning status
* 1 missing GBIC triggered the Marginal/Warning status

switch:admin> switchStatusShow
The overall switch status is HEALTHY/OK
```

See Also switchStatusPolicyShow
 switchStatusPolicySet

syslogdIpAdd

Add the IP address of a syslog daemon.

Synopsis `syslogdIpAdd IP_address`

Availability admin

Description Use this command to add the IP address of a syslog daemon, that is the IP address of the server which is running the syslogd process. Syslog daemon (syslogd) is a process available on most Unix systems that reads and forwards system messages to the appropriate log files and/or users, depending on the system configuration.

When one or more IP addresses are configured, the switch forwards all error log entries to the syslogd on the specified server(s). Up to six servers are supported.

Operands This command has the following operand:

`IP_address` Specify the IP address of the server running syslogd. This operand is required.

Example To add the address 192.168.1.60 to the list of machines to which system messages are sent:

```
switch:admin> syslogdIpAdd "192.168.1.60"  
Committing configuration...done.
```

See Also `errShow`

`syslogdIpRemove`

`syslogdIpShow`

syslogdIpRemove

Remove the IP address of a syslog daemon.

Synopsis `syslogdIpRemove IP_address`

Availability admin

Description Use this command to remove the IP address of a syslog daemon, that is the IP address of the server which is running the `syslogd` process.

Operands This command has the following operand:
`IP_address` Specify the IP address of the server running `syslogd`.

Example To remove the address 192.168.1.60 from the list of machines to which system messages are sent:

```
switch:admin> syslogdIpRemove "192.168.1.60"  
Committing configuration...done.
```

See Also `errShow`
`syslogdIpAdd`
`syslogdIpShow`

syslogdIpShow

Display all syslog daemon IP addresses.

Synopsis `syslogdIpShow`

Availability All users

Description Use this command to display all syslog daemon IP addresses in the configuration database.

Operands None.

Example To display all syslog daemon IP addresses:

```
switch:admin> syslogdIpShow  
syslog.IP.address.1: 192.168.1.60  
syslog.IP.address.2: 192.168.1.88  
syslog.IP.address.3: 192.168.2.77
```

See Also `errShow`
`syslogdIpAdd`
`syslogdIpRemove`

tempShow

Display temperature readings.

Synopsis tempShow

Availability All users

Description Use this command to display the current temperature readings from each of five temperature sensors located on the main printed circuit board of the switch. The sensors are located, approximately, one in each corner and one at the center of the PCB.

Operands None.

Example To display the temperature readings for a switch:

```
switch:admin> tempShow
43  40  44  48  45  Centigrade
109 104 111 118 113 Fahrenheit
```

See Also fanShow

psShow

timeOut

Used to set or clear idle telnet connection timeout value.

Synopsis timeOut [0 | minutes]

Availability all users (display)
 admin (set/clear)

Description This command changes the telnet timeout value used by the shell. The default value of zero means that telnet timeouts are disabled. A non-zero value specifies the number of minutes to wait before an idle telnet session is timed out. The minimum value is 1 minute, the maximum is 512640 minutes (1 year).

Operands The following operand is optional:

0 Specify a 0 to disable telnet timeouts.

minutes Specify a number of minutes before an idle telnet session is timed out.

Example To display the current telnet timeout value, then change it to 10 minutes:

```
sw5:admin> timeOut
TimeOut is Disabled
sw5:admin> timeOut 10
Committing configuration...done.
TimeOut is now 10 minutes
```

See Also help
 version

topologyShow

Display the unicast fabric topology.

Synopsis `topologyShow [domainnumber]`

Availability All users

Description Use this command to display the fabric topology, as it appears to the local switch.

This includes:

- A list of all domains that are part of the fabric, and to each of those domains, all possible paths from the local switch.
- For each path - cost, the number of hops from the local switch to the destination switch, name of the destination switch, and a summary of all ports are routed through that path.

A path is described by the output port that a frame addressed to a certain domain will be forwarded to by the switches' routing hardware, in order to reach the domain.

With the domain number specified, this command displays the topology information for the specified destination domain.

The display contains the following fields:

Local Domain ID:

Domain number of local switch.

Domain: Domain number of destination switch.

Metric: Cost of reaching destination domain.

Hops: The number of hops to reach destination domain.

Out Port: Port that incoming frame will be forwarded to, in order to reach the destination domain.

In Ports: Bit map of input ports to use the corresponding Out Port to reach the destination domain. A bit set to 1 indicates port is being routed through the corresponding Out Port. The least significant bit represents port 0. This is the same information provided in a different format by `portRouteShow` and `uRouteShow`.

Flags: Always 'D', indicating a dynamic path. A dynamic path is discovered automatically by the FSPF path selection protocol.

Name: Name of destination switch.

Operands This command has the following operand:

`domainnumber`

Specify the destination domain for which topology information is to be displayed. This operand is optional.

Examples To display the unicast fabric topology:

```
switch:admin> topologyShow
Local Domain ID: 1
Domain  Metric  Hops  Out Port  In Ports  Flags  Name
-----
0       1000      1     2         0x00002000  D     "sw25"
          1     6         0x00000000  D
          1     7         0x00000000  D
3       1000      1     13        0x000000c4  D     "sw4"
4       2000      2     2         0x00002000  D     "sw10"
          2     6         0x00000000  D
          2     7         0x00000000  D
8       2000      0     2         0x00002000  D     "sw16"
          0     6         0x00000000  D
          0     7         0x00000000  D

switch:admin> topologyShow 4
Local Domain ID: 1
Domain  Metric  Hops  Out Port  In Ports  Flags  Name
-----
4       2000      2     2         0x00002000  D     "sw10"
          2     6         0x00000000  D
          2     7         0x00000000  D
```

See Also portRouteShow
uRouteShow

trackChangesSet

Enables configuring of track-changes feature.

Synopsis trackChangesSet [mode], [snmptrapmode]

Availability admin

Description This command enables or disables the track-changes feature. An SNMP-TRAP mode can also be enabled. Trackable changes are:

- Successful login
- Unsuccessful login
- Logout
- Config file change from task
- Track-changes on
- Track-changes off

Operands This command has the following operands:

mode Specify 1 to enable the track-changes feature or specify 0 to disable the feature. The default (if no operand is specified) is to disable the track-changes feature.

snmptrapmode Specify 1 to enable errors to be sent to the SNMP-TRAP in addition to the errlog or specify 0 to disable the SNMP-TRAP messages. The default (if no operand is specified) is to disable SNMP-TRAP messages.

Example Below are two examples. The first sets the track-changes feature and disables SNMP TRAP messages. The second disables both the track-changes feature and SNMP TRAP messages.

```
switch:admin> trackChangesSet 1, 0
0x10f9bcd0 (tShell): Feb 10 15:04:38
Error TRACK-TRACK_ON, 4, Track-changes on
Committing configuration...done.
0x10f9bcd0 (tShell): Feb 10 15:04:42
Error TRACK-CONFIG_CHANGE, 4, Config file change from task:tShell

switch:admin> trackChangesSet 0, 0
0x10f9bcd0 (tShell): Feb 10 15:04:50
Error TRACK-TRACK_OFF, 4, Track-changes off
Committing configuration...done.
```

See Also agtcfgSet
agtcfgShow

uptime

Display length of time the system has been operational.

Synopsis `uptime`

Availability All users

Description Use this command to display the length of time the system has been in operation (also known as “up time”), the total cumulative amount of “up time” since the system was first powered-on, the date and time of the last reboot, and the reason for the last reboot.

For up and powered-on times less than 60 seconds, the time is displayed in seconds. For times greater than or equal to 60 seconds, the time is displayed in minutes. The output format adjusts accordingly.

The reason for the last switch reboot is also recorded in the error log. Reasons are listed below. Not all reasons are applicable to all switch models:

Unknown	Reason is unknown.
Bus time-out*	Port ASIC was accessed and no response was received.
Bus error*	Non-existent system address was accessed.
Panic*	Firmware detected a critical hardware error or an internal inconsistency.
Fault*	CPU signaled a fault condition (critical firmware error).
Power-on	Last reboot was caused by a power-on.
Watchdog*	Watchdog timer caused a reset.
PushButton	Push buttons 1 and 3 were depressed for two seconds, causing a system reset.
Reboot	Last reboot was caused by a user (from any management interface).
Powerfail NMI*	Power supply caused a nonmaskable interrupt.
Watchdog NMI*	Watchdog timer caused a nonmaskable interrupt.
PushButton NMI*	Push buttons 2 and 4 were depressed for two seconds, causing a nonmaskable interrupt.
Software NMI*	Firmware caused a nonmaskable interrupt.

Note: The items marked with an asterisk (*) are usually caused by hardware or firmware failures. Information on the failure is stored in the switch. Follow the procedures in the switch manual.

Operands None.

Example To display the uptime for a switch:

```
switch:admin> uptime
Up for:          3 days, 18:35
Powered for:    30 days, 16:05
Last up at:     Mon Mar 22 12:00:00 1999
Reason:         Power-on
```

See Also

- date
- errShow
- fastboot
- reboot

uRouteConfig

Configure a static route.

Synopsis `uRouteConfig portnumber, domainnumber, outputportnumber`

Availability admin

Description Use this command to configure static routes. A static route is assigned a specific path; the path does not change with a topology change unless the path becomes unavailable.

After this command is issued, and if `output_portnumber` is a usable port, all frames coming in from port `portnumber` addressed to `domainnumber` are forwarded through port `output_portnumber`. If `output_portnumber` is not usable, the routing assignment is not affected. When `output_portnumber` becomes usable the static route assignment for `portnumber` is enforced.

`output_portnumber` is usable if the associated neighbor associated is in `NB_ST_FULL` state. See `interfaceShow` for more information.

Using static routes can affect load sharing. If a large number of routes are statically configured to the same output port, the ability of the switch to achieve optimum load sharing may be impaired.

To prevent routing loops, static route configuration using a non-minimum cost path is not allowed. If you attempt to configure such a route, you are asked if the entry should be saved in the database.

Operands This command has the following operands:

`portnumber` Specify the port to be statically routed; can be either an `F_Port` or an `E_Port`. This operand is required.

`domainnumber` Specify the destination domain. This operand is required.

`outputportnumber` Specify the output port where traffic is to be forwarded. This operand is required.

Examples To configures a static route for all traffic coming in from port 1 and addressed to domain 2 to go through port 5:

```
switch:admin> uRouteConfig 1,2,5
The configuration will now contain the static route:
switch:admin> configShow "route"
route.ucastRoute.1.2: 5
route.ucastRouteCount: 1
```

See Also `configShow`
`interfaceShow`
`uRouteRemove`
`uRouteShow`

uRouteRemove

Remove a static route.

Synopsis `uRouteRemove portnumber, domainnumber`

Availability admin

Description Use this command to remove a statically configured route.

When this command is issued, the route to `domainnumber` for `portnumber` may not change. It does not change if the previous static route was along a minimum cost path.

After this command is issued, the load sharing to domain `domainnumber` is reevaluated.

Operands This command has the following operands:

`portnumber` Specify the port to be statically routed; can be either an `F_Port` or an `E_Port`. This operand is required.

`domainnumber`
Specify the destination domain. This operand is required.

Examples To remove a static route for all traffic coming in from port 1 and addressed to domain 2:

```
switch:admin> uRouteRemove 1, 2
```

See Also `configShow`
`uRouteConfig`
`uRouteShow`

uRouteShow

Display unicast routing information.

Synopsis `uRouteShow [portnumber],[domainnumber]`

Availability All users

Description Use this command to display the unicast routing information for a port, as it is known by the FSPF path selection/routing task. The routing information describes how a frame, that is received from a port on the local switch, is to be routed to reach a destination switch.

The following information is displayed:

Local Domain ID:Domain number of local switch.

In Port: Port from which a frame is received.

Domain: Destination domain of incoming frame.

Out Port: Port to which incoming frame is to be forwarded.

Metric: Cost of reaching the destination domain.

Hops: Number of hops required to reach the destination domain.

Flags: Indicates if route is dynamic (D) or static (S). A dynamic route is discovered automatically by the FSPF path selection protocol. A static route is assigned using the command `uRouteConfig`.

Next (Dom, Port):Domain and port number of the next hop. These are the domain number and the port number of the switch to which Out Port is connected.

Operands This command has the following operands:

No Operand Displays routing information for all active ports on the local switch, to all the domains in the fabric.

`portnumber` Displays routing information for port `portnumber` to all the domains in the fabric.

`portnumber, domainnumber`
Displays routing information for port `portnumber` to domain `domainnumber`.

Examples To display the unicast routing information:

```
switch:admin> uRouteShow
Local Domain ID: 1
In Port  Domain  Out Port  Metric  Hops  Flags  Next(Dom,Port)
-----
2         3         13       1000    1     D      3,7
Type <CR> to continue, Q<CR> to stop:
6         3         13       1000    1     D      3,7
Type <CR> to continue, Q<CR> to stop:
7         3         13       1000    1     D      3,7
Type <CR> to continue, Q<CR> to stop:
13        0         7        1000    1     D      0,8
         4         2        2000    2     D      0,13
switch:admin> uRouteShow 13

Local Domain ID: 1
In Port  Domain  Out Port  Metric  Hops  Flags  Next(Dom,Port)
-----
13        0         7        1000    1     D      0,8
         4         2        2000    2     D      0,13
```

See Also portRouteShow
topologyShow
uRouteConfig

version

Display firmware version information.

Synopsis `version`

Availability All users

Description Use this command to display firmware version information and build dates.

The following is displayed:

Kernel: Version of switch kernel operating system
Fabric OS: Version of switch Fabric OS
Made on: Build date of firmware running in switch
Flash: Build date of firmware stored in flash proms
BootProm: Build date of firmware stored in boot prom

Usually the `Made on` and `Flash` dates are the same, since the switch starts running flash firmware at power-on. However, in the time period between `firmwareDownload` and the next reboot, the dates can differ.

Operands None.

Example To display firmware version information:

```
switch:admin> version
Kernel:      5.3.1
Fabric OS:   v2.1
Made on:     Fri Jan 22 15:21:20 PST 1999
Flash:       Fri Jan 22 15:21:20 PST 1999
BootProm:    Tue Dec 29 17:32:00 PST 1998
switch:admin>
```

See Also `firmwareDownload`
`reboot`

Error Messages

This chapter explains the Fabric OS error message format and possible errors, including:

- *System Error Message Formats* on page 2-1
- *Displaying Error Messages Using Telnet* on page 2-2
- *Resetting Bad Ports* on page 2-2
- *Post Test Commands* on page 2-3
- *POST Test Failure and Recovery Actions* on page 2-3
- *Error Message Numbers* on page 2-4
- *Diagnostic Error Messages* on page 2-8
- *System Error Messages* on page 2-14

System Error Message Formats

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.

Errors are listed in reverse chronological order. Up to 64 messages can be held in the buffer. Once the buffer limit is exceeded, the oldest message is deleted.

The `errShow` command displays all detected errors. The `errShow` command output provides more information than the front panel display. The following information is displayed:

- Task ID
- Task name
- Date and time of the error
- Number of occurrences
- Error type
- Error level
- A description of the error
- The error number is displayed for diagnostic errors

Note: The error counter goes to a maximum of 999.

The display halts after each error is displayed, prompting you to either press <Enter> to continue or type a Q to quit. Continue pressing `Enter` until the prompt (`=>`) is displayed. In Figure 4-1, Error 02 represents a system error and Error 01 represents a diagnostic error (error number #004). Only diagnostic errors are assigned error numbers.

Note: Duplicate error messages may be displayed in the shell if too many error messages are received consecutively, but the data in `errShow/errDump`, `syslog`, and `snmp` are correct.

```

switch:admin> errShow
-----
Error 02
0x103dc470 (tSwitch): Apr  9 10:41:06 (4)
      Error I2c-TIMEOUT, 2, i2c (0x48, 0x2) bus timeout
Type <CR> to continue, Q<CR> to stop:
Error 01
-----
0x103dc470 (tSwitch): Apr  9 10:40:51
      Error DIAG-TIMEOUT, 1,
      Skipped POST tests:assuming all ports are healthy,
      Err#004
Type <CR> to continue, Q<CR> to stop:
  
```

The screenshot shows the output of the `errShow` command. It displays two error messages. The first is Error 02, a system error, and the second is Error 01, a diagnostic error. Callouts point to specific fields in the output:

- Task ID:** Points to the hexadecimal address `0x103dc470`.
- Task Name:** Points to the task name `(tSwitch)`.
- Date and Time of Occurrence:** Points to the timestamp `Apr 9 10:41:06`.
- Number of Occurrences:** Points to the number `(4)`.
- Error Type:** Points to the error name `Error I2c-TIMEOUT`.
- Description:** Points to the error details `2, i2c (0x48, 0x2) bus timeout`.
- Error Number:** Points to the error number `Err#004`.

Figure 2-1 `errShow` Command Example

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.
3. To scroll through the error list, type `CR`.
4. Scroll through error log to view the error messages. If no errors are encountered, this command displays “No Error”.

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 (port#)` command. This command clears the port status only and does not clear the logs or change the port’s condition. The `diagClearError (port#)` command should only be used during diagnostic procedures to reset a bad port for retest.

Post Test Commands

When the switch is booted a series of commands are executed to test the hardware of the switch. This procedure is called the POST (power on self test).

The Fabric OS POST includes the following tests:

Table 2-1 Post Tests

Command	Description
ramTest	Bit write / read test of SDRAMs in the switch.
portRegTest	Bit write / read test of the ASIC SRAMs and registers.
centralMemoryTest	Bit write / read test of the ASIC central memory.
cmiTest	ASIC to ASIC connection test of the CMI bus.
camTest	Functional test of the CAM memory.
portLoopbackTest	Functional test of switch by sending and receiving frames from the same port.

For more information about these tests, refer to the individual command descriptions in Chapter 1.

Note: The cold boot (power reset) runs the long ramTest while the warm boot (software reset) runs the short ramTest.

POST Test Failure and Recovery Actions

The table below lists what actions to perform if the switch fails any of the POST tests.

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 2-2 Post Test Recovery Action

Failed test	Recovery Action
ramTest *	replace DRAM module or mainboard assembly
portRegTest *	replace mainboard assembly
centralMemoryTest *	replace mainboard assembly
cmiTest *	replace mainboard assembly
cmemRetentionTest	replace mainboard assembly
sramRetentionTest	replace mainboard assembly
camTest *	replace mainboard assembly

Table 2-2 Post Test Recovery Action (Continued)

Failed test	Recovery Action
portLoopbackTest *	replace mainboard assembly
crossPortTest	replace mainboard assembly, GBIC, or fiber cable
spinSilk	replace mainboard assembly, GBIC, or fiber cable
* These tests are run during the POST (power on self test).	

Error Message Numbers

An error number ERR#xxxx appears at the end of a diagnostic error message. Table 4-2 matches each error number with the test that caused the error and the name of the error. Look up the complete definition of the error name and the actions that will correct it in Table 4-3.

Table 2-3 Error Message Numbers

Error Number	Test Name	Error Name
0001	n/a	DIAG-CLEAR_ERR
0004	n/a	DIAG-POST_SKIPPED
0B15	sramRetentionTest	DIAG-REGERR
0B16		DIAG-REGERR_UNRST
0B0F		DIAG-BUS_TIMEOUT
1F25	cmemRetentionTest	DIAG-LCMRS
1F26		DIAG-LCMTO
1F27		DIAG-LCMEM
0110	ramTest *	DIAG-MEMORY
0111		DIAG-MEMSZ
0112		DIAG-MEMNULL
0415	portRegTest *	DIAG-REGERR
0416		DIAG-REGERR_UNRST
040F		DIAG-BUS_TIMEOUT

Table 2-3 Error Message Numbers (Continued)

Error Number	Test Name	Error Name	
1020	centralMemoryTest *	DIAG-CMBISRTO	
1021		DIAG-CMBISRF	
1025		DIAG-LCMRS	
1026		DIAG-LCMTO	
1027		DIAG-LCMEM	
1028		DIAG-LCMEMTX	
1029		DIAG-CMNOBUF	
102A		DIAG-CMERRTYPE	
102B		DIAG-CMERRPTN	
102C		DIAG-INTNOTCLR	
1030		DIAG-BADINT	
106F		DIAG-TIMEOUT	
2030		cmiTest *	DIAG-BADINT
2031			DIAG-INTNIL
2032	DIAG-CMISA1		
2033	DIAG-CMINOCAP		
2034	DIAG-CMIINVCAP		
2035	DIAG-CMIDATA		
2036	DIAG-CMICKSUM		
223B	camTest *	DIAG-CAMINIT	
223C		DIAG-CAMSID	

Table 2-3 Error Message Numbers (Continued)

Error Number	Test Name	Error Name
2640	portLoopbackTest *	DIAG-ERRSTAT (ENCIN)
2641		DIAG-ERRSTAT (CRC)
2642		DIAG-ERRSTAT (TRUNC)
2643		DIAG-ERRSTAT (2LONG)
2644		DIAG-ERRSTAT (BADEOF)
2645		DIAG-ERRSTAT (ENCOUT)
2646		DIAG-ERRSTAT (BADORD)
2647		DIAG-ERRSTAT (DISCC3)
264F		DIAG-INIT
265F		DIAG-PORT_DIED
266E		DIAG-DATA
266F		DIAG-TIMEOUT
2660		DIAG-STATS(FTX)
2661		DIAG-STATS(FRX)
2662		DIAG-STATS(C3FRX)
2670		DIAG-PORTABSENT
2671		DIAG-XMIT

Table 2-3 Error Message Numbers (Continued)

Error Number	Test Name	Error Name
3040	crossPortTest	DIAG-ERRSTAT(ENCIN)
3041		DIAG-ERRSTAT(CRL)
3042		DIAG-ERRSTAT(TRUNC)
3043		DIAG-ERRSTAT(2LONG)
3044		DIAG-ERRSTAT(BADEF)
3045		DIAG-ERRSTAT(ENCOUT)
3046		DIAG-ERRSTAT(BADORD)
3047		DIAG-ERRSTAT(DISC3)
304F		DIAG-INIT
305F		DIAG-PORTDIED
3060		DIAG-STATS (FTX)
3061		DIAG-STATS (FRX)
3062		DIAG-STATS (C3FRX)
306E		DIAG-DATA
306F		DIAG-TIMEOUT
3070		DIAG-PORTABSENT
3071		DIAG-XMIT
3078		DIAG-PORTWRONG

Table 2-3 Error Message Numbers (Continued)

Error Number	Test Name	Error Name
3080	spinSilk	DIAG-PORTM2M
3081		DIAG-NOSEGMENT
384F		DIAG-INIT
385F		DIAG-PORTDIED
3840		DIAG-ERRSTAT (ENCIN)
3841		DIAG-ERRSTAT (CRC)
3842		DIAG-ERRSTAT (TRUNC)
3843		DIAG-ERRSTAT (2LONG)
3844		DIAG-ERRSTAT (BADEOF)
3845		DIAG-ERRSTAT (ENCOUT)
3846		DIAG-ERRSTAT (BADORD)
3847		DIAG-ERRSTAT (DISCC3)
3870		DIAG-PORTABSENT
3871		DIAG-XMIT
3874		DIAG-PORTSTOPPED
3880		DIAG-PORTM2M
3881		DIAG-NOSEGMENT
* These tests are run during the POST (power on self test). For more information about these tests, refer to the individual command description in Chapter 3.		

Diagnostic Error Messages

This section provides information on the probable cause of a diagnostic error and what actions to take.

Table 2-4 Diagnostic Error Messages

Message	Description	Probable Cause	Action
DIAG-BADINT Err#1030, 2030 [centralMemoryTest, cmiTest]	Port received an unexpected interrupt	ASIC failure	Replace mainboard assembly
DIAG-BUS_TIMEOUT Err#0BoF, 4040F [portRegTest, sramRetentionTest]	ASIC register or ASIC SRAM did not respond to an ASIC data access	ASIC failure	Replace mainboard assembly
DIAG-CAMINIT Err#223B [camTest]	Port failed to initialize due to one of the following reasons: <ul style="list-style-type: none"> • 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
DIAG-CAMSID Err#223C [camTest]	ASIC failed SID NO translation test	ASIC failure	Replace mainboard assembly
DIAG-CLEAR_ERR Err#0001	Port's diag error flag (OK or BAD) is cleared	Informational Only	None required
DIAG-CMBISRF Err#1021 [centralMemoryTest]	ASIC's Central Memory SRAMs did not complete the BISR within the timeout period	ASIC failure	Replace mainboard assembly
DIAG-CMBISRTO Err#1020 [centralMemoryTest]	ASIC's Central Memory SRAMs did not complete the BISR within the timeout period	ASIC failure	Replace mainboard assembly
DIAG-CMERRPTN Err#102B [centralMemoryTest]	Error detected at the wrong port	ASIC failure	Replace mainboard assembly
DIAG-CMERRTYPE Err#102A [centralMemoryTest]	Port got the wrong CMEM error type	ASIC failure	Replace mainboard assembly

Table 2-4 Diagnostic Error Messages (Continued)

Message	Description	Probable Cause	Action
DIAG-CMICKSUM Err#2036 [cmiTest]	CMI message received failed bad checksum test	ASIC or mainboard failure	Replace mainboard assembly
DIAG-CMIDATA Err#2035 [cmiTest]	CMI data received did not match data transmitted	ASIC or mainboard failure	Replace mainboard assembly
DIAG-CMIINVCAP Err#2034 [cmiTest]	Unintended ASIC erroneously got CMI capture flag	ASIC or mainboard failure	Replace mainboard assembly
DIAG-CMINOCAP Err#2033 [cmiTest]	CMI intended receiver ASIC failed to get CMI capture flag	ASIC or mainboard failure	Replace mainboard assembly
DIAG-CMISA1 Err#2032 [cmiTest]	An attempt to send a CMI message from ASIC to ASIC failed	ASIC failure	Replace mainboard assembly
DIAG-CMNOBUF Err#1029 [centralMemoryTest]	Port could not get any buffer	ASIC failure	Replace mainboard assembly
DIAG-DATA Err#266E, 306E [portLoopbackTest, crossPortTest]	Payload received by port did not match payload transmitted	mainboard, GBIC module or fiber cable failure	Replace mainboard assembly, GBIC module or fiber cable

Table 2-4 Diagnostic Error Messages (Continued)

Message	Description	Probable Cause	Action
DIAG-ERRSTAT Err#2640-2647, 3040-3047, 3840-3847 [portLoopbackTest, crossPortTest, spinSilk]	Port Error Statistics counter is non-zero, meaning an error was detected when receiving frames. One of the following status errors occurred. <ul style="list-style-type: none"> • Enc_in – Encoding error, inside frame • CRC_err – Cyclic redundancy check on frame failed • TruncFrm – Truncated frame • FrmTooLong – Frame too long • BadEOF – Bad end of file • Enc_out – Encoding error, outside frame • BadOrdSet – Bad symbol on fiber-optic cable • DiscC3 – Discarded Class 3 frames 	ASIC, mainboard, GBIC module or fiber cable failure	Replace mainboard assembly, GBIC module or fiber cable
DIAG-INIT Err#264F, 304F, 384F [portLoopbackTest, crossPortTest, spinSilk]	Port failed to go active in the loopback mode requested	ASIC, main board, GBIC module or fiber cable failure	Replace mainboard assembly, GBIC module or fiber cable
DIAG-INTNIL Err#2031 [cmiTest]	ASIC failed to get a CMI error (interrupt)	ASIC failure	Replace mainboard assembly
DIAG-INTNOTCLR Err#102C [centralMemoryTest]	The interrupt bit could not be cleared	ASIC failure	Replace mainboard assembly
DIAG-LCMEM Err#1027 [centralMemoryTest, cmemRetentionTest]	Data read from the Central Memory location did not match data previously written into the same location	ASIC failure	Replace mainboard assembly
DIAG-LCMEMTX Err#1F27, 1028 [centralMemoryTest]	Central Memory transmit path failure: ASIC 1 failed to read ASIC 2 using the transmit path	mainboard failure	Replace mainboard assembly

Table 2-4 Diagnostic Error Messages (Continued)

Message	Description	Probable Cause	Action
DIAG-LCMRS Err#1F25, 1025 [centralMemoryTest, cmemRetentionTest]	Central Memory Read Short: M bytes requested but not received	ASIC failure	Replace mainboard assembly
DIAG-LCMTO Err#1F26, 1026 [centralMemoryTest, cmemRetentionTest]	Central Memory Timeout: Data transfer initiated did not complete within the timeout period	ASIC failure	Replace mainboard assembly
DIAG-MEMNULL Err#0112 [ramTest]	Test failed to malloc	mainboard failure	Replace mainboard assembly
DIAG-MEMSZ Err#0111 [ramTest]	Memory size to be tested is less than or equal to zero	mainboard failure	Replace mainboard assembly
DIAG-MEMORY Err#0110 [ramTest]	Data read from RAM location did not match previously written data into same location	CPU RAM failure	Replace mainboard assembly or DRAM module
DIAG-NOSEGMENT Err#3081,3881 [crossPortTest, spinSilk]	Port failed to go into loopback mode	Improper GGIC or cable connection	Reseat GBICs and cables and re-execute test
DIAG-PORTABSENT Err#2670, 3070, 3870 [portLoopbackTest, crossPortTest, spinSilk]	Port is not present	ASIC or mainboard failure	Replace mainboard assembly
DIAG-PORTDIED Err#265F, 305F, 385F [portLoopbackTest, crossPortTest, spinSilk]	Port was in loopback mode and then went inactive	ASIC, GBIC module or fiber cable failure	Replace mainboard assembly, GBIC module or fiber cable
DIAG-PORTM2M Err#3080, 3880 [crossPortTest, spinSilk]	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

Table 2-4 Diagnostic Error Messages (Continued)

Message	Description	Probable Cause	Action
DIAG-PORTSTOPPED Err#3874 [spinSilk]	Port is no longer transmitting, as indicated by the Number Of Frames Transmitted counter being stuck at N frames	ASIC, GBIC module or fiber cable failure	Replace mainboard assembly, GBIC module or fiber cable
DIAG-PORTWRONG Err#3078 [crossPortTest]	Frame erroneously received by port M instead of the intended port N	ASIC failure	Replace mainboard assembly
DIAG-POST_SKIPPED Err# 0004 [switch initialization]	POST is skipped	Informational Only	None required
DIAG-REGERR Err#0B15, 0415 [portRegTest, sramRetentionTest]	Data read from ASIC register or ASIC SRAM did not match data previously written into same location	ASIC failure	Replace mainboard assembly
DIAG-REGERR_UNRST Err#0B16, 0416 [portRegTest, sramRetentionTest]	Port failed to unreset	ASIC failure	Replace mainboard assembly
DIAG-STATS Err#2660-2662, 3060 - 3062 [portLoopbackTest, crossPortTest]	Port counter value did not match the number of frames actually transmitted. Possible counters reporting: <ul style="list-style-type: none"> • FramesTx - number of frames transmitted • FramesRx - number of frames received • Cl3FrmRx - number of Class 3 frames received 	ASIC, GBIC module or fiber cable failure	Replace mainboard assembly, GBIC module or fiber cable
DIAG-TIMEOUT Err#266F, 306F, 386F [portLoopbackTest, crossPortTest, centralMemoryTest]	For portLoopbackTest and crossPortTest: <ul style="list-style-type: none"> • Port failed to receive frame within timeout period • For centralMemoryTest • Port failed to detect an interrupt within the timeout period 	ASIC, GBIC module or fiber cable failure	Replace mainboard assembly, GBIC module or fiber cable
DIAG-XMIT Err#2271, 2671, 3071, 3871 [portLoopbackTest, crossPortTest, spinSilk, camTest]	Port failed to transmit frame	ASIC failure	Replace mainboard assembly

System Error Messages

This section provides information on the probable cause of a system error and what actions to take.

Table 2-5 System Error Messages

Message	Description	Probable Cause	Action
ASIC, MINI_BUFFER, LOG_WARNING	ASIC Failure	Bad main board	Contact customer support
CONFIG CORRUPT	The switch configuration information has become irrevocably corrupted.	OS error	The system automatically resorts to the default configuration settings.
CONFIG OVERFLOW	The switch configuration information has grown too large to be saved or has an invalid size.	OS error	Contact customer support
CONFIG VERSION	The switch has encountered an unrecognized version of the switch configuration.	OS error	The system automatically reverts to the default configuration settings.
FABRIC, SEGMENTED, LOG_WARNING	Fabric segmented.	Incompatible fabric parameters/switches Conflict zones	Reconfigure fabric or zones. See “configure” on page 21.
FABRIC, BADILS, LOG_WARNING	Bad ISL-ELS size	The ISL-ELS payload is wrong.	Contact customer support
FABRIC, NO_ALIASID, LOG_WARNING	No free multicast alias	Too many multicast groups in use	Remove some of the groups
FANS, 1_FAILED, LOG_WARNING	Switch overheated	Fan Failure	Contact customer support
FANS, 2_FAILED, LOG_ERROR	Switch overheated	Fan Failure	Contact customer support
FANS, 3_FAILED, LOG_CRITICAL	Switch overheated	Fan Failure	Contact customer support
FANS, 4_FAILED, LOG_CRITICAL	Switch overheated	Fan Failure	Contact customer support
FANS, 5_FAILED, LOG_CRITICAL	Switch overheated	Fan Failure	Contact customer support
FANS, 6_FAILED, LOG_CRITICAL	Switch overheated	Fan Failure	Contact customer support
FCIU, IUBAD, L, S	Invalid IU	OS error	Contact customer support
FCIU, IUCOUNT, L, S	Total number of IUs Count < 0	OS error	Contact customer support

Table 2-5 System Error Messages (Continued)

Message	Description	Probable Cause	Action
FCPH, EXCHBAD, L, S	Bad exchange	OS error	Contact customer support
FCPH, EXCHFREE, L, S	Unable to free an exchange	OS error	Contact customer support
FLANNEL, PHANTOM, LOG_WARNING	Port's PLT limit exceeded	OS error	Contact customer support
FLASH, BAD_MIRROR, LOG_WARNING	The system's flash memory has encountered an error.	OS error	The system attempts to recover from its mirrored backup. Contact customer support.
FLOOD, INVLSU, LOG_WARNING	Discard received LSU	OS error	Contact customer support
FLOOD, INVLSR, LOG_WARNING	Unknown LSR type	OS error	Contact customer support
FLOOD, LSRLen, LOG_ERROR	Excessive LSU length	OS error	Contact customer support
FSPF, INPORT, LOG_ERROR	Input port out of range	OS error	Contact customer support
FSPF, NBRCHANGE, LOG_WARNING	Wrong neighbor ID in Hello message from port	OS error	Contact customer support
FSPF, REMDOMAIN, LOG_ERROR	Remote Domain ID out of range	OS error	Contact customer support
FSPF, SCN, LOG_WARNING	Illegal SCN	OS error	Contact customer support
FSPF, SECTION, LOG_ERROR	Wrong Section Id	OS error	Contact customer support
FSPF, VERSION, LOG_ERROR	FSPF version not supported	OS error	Contact customer support
HLO, DEADTIMEOUT, LOG_ERROR	Incompatible Inactivity timeout from port	OS error	Contact customer support
HLO, HLOTIMEOUT, LOG_ERROR	Incompatible Hello timeout from port	OS error	Contact customer support
HLO, INVHLO, LOG_ERROR	Invalid Hello received from port	OS error	Contact customer support
LSDB, LSID, LOG_ERROR	Link State ID 'd out of range	OS error	Contact customer support
LSDB, MAXINCARN, LOG_WARNING	Local Link State Record reached max incarnation	OS error	Contact customer support
LSDB, NOLOCALENTRY, LOG_CRITICAL	No database entry for local Link State Record	OS error	Contact customer support

Table 2-5 System Error Messages (Continued)

Message	Description	Probable Cause	Action
LSDB, NOLSR, LOG_WARNING	No Link State Record for domain	OS error	Contact customer support
MCAST, ADDBRANCH, LOG_ERROR	Add Branch failed	OS error	Contact customer support
MCAST, ADDPORT, LOG_WARNING	Add Port failed	OS error	Contact customer support
MCAST, REMBRANCH, LOG_ERROR	Remove branch failed	OS error	Contact customer support
MCAST, REMPORT, LOG_WARNING	Remove port failed	OS error	Contact customer support
MCAST, NOPARENT, LOG_ERROR	Null parent	OS error	Contact customer support
MCAST, NOPARENTLSR, LOG_ERROR	Null lsrP	OS error	Contact customer support
MQ, QWRITE, L, M	Message queue overflow	Task blocked	Contact customer support
MQ, QREAD, L, M	Message queue unread	OS error	Contact customer support
MQ, MSGTYPE, E, M	Unknown message type	OS error	Contact customer support
NBFSM, NGBRSTATE, LOG_ERROR	Wrong input to neighbor FSM	OS error	Contact customer support
PANIC, TASKSPAWN, LOG_PANIC	Task creation failed	OS error	Contact customer support
PANIC, SEMCREATE, LOG_PANIC	Semaphore creation failed	OS error	Contact customer support
PANIC, SEMDELETE, LOG_PANIC	Semaphore deletion failed	OS error	Contact customer support
PANIC, QCREATE, LOG_PANIC	Message queuer failed	OS error	Contact customer support
PANIC, QDELETE, LOG_PANIC	Message queuer deletion failed	OS error	Contact customer support
PANIC, MALLOC, LOG_PANIC	Memory allocation failed	OS error	Contact customer support
PANIC, FREE, LOG_PANIC	Memory free failed	OS error	Contact customer support
PANIC, INCONSISTENT, LOG_PANIC	Data out of sync	OS error	Contact customer support

Table 2-5 System Error Messages (Continued)

Message	Description	Probable Cause	Action
PANIC, INTCONTEXT, LOG_PANIC	Data out of sync	OS error	Contact customer support
PANIC, ZOMTIMSET, LOG_PANIC	Attempt to set a zombie timer	OS error	Contact customer support
PANIC, ZOMTIMKILL, LOG_PANIC	Zombie timer destroyed	OS error	Contact customer support
PANIC, FREETIMRLSD, LOG_PANIC	Free timer released	OS error	Contact customer support
PANIC, TIMEUSECNT, LOG_PANIC	Timer use count exceeded	OS error	Contact customer support
PANIC, LSDB_CKSUM, LOG_PANIC	Link State Database checksum failed	OS error	Contact customer support
POWER, 1_FAILED, LOG_CRITICAL	Switch Power Failure	Power Supply Failure	Contact customer support
POWER, 2_FAILED, LOG_CRITICAL	Switch Power Failure	Power Supply Failure	Contact customer support
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.
RPC, SVC_EXIT	An RPC service daemon has terminated prematurely or unexpectedly.	OS error	Contact customer support
RPC, SVC_REG	An RPC service daemon could not establish service for a particular protocol handler.	OS error	Contact customer support
SEMA, SEMGIVE, L, M	Unable to give a semaphore	OS error	Contact customer support
SEMA, SEMTAKE, L, M	Unable to take a semaphore	OS error	Contact customer support
SEMA, SEMFLUSH, L, M	Unable to flush a semaphore	OS error	Contact customer support
SYS, NOMEM, LOG_CRITICAL	No memory	OS error	Contact customer support
SYS, SYSCALL, LOG_ERROR	System call failed	OS error	Contact customer support
SYS, BADPTR, LOG_ERROR	Bad system pointer	OS error	Contact customer support

Table 2-5 System Error Messages (Continued)

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

Feature Telnet Commands

This chapter summarizes the commands that are only available with a license key.

- *Zoning Commands* on page 3-1
- *QuickLoop Commands* on page 3-2
- *QuickLoop Fabric Assist Mode Commands* on page 3-3
- *Extended Fabric Command* on page 3-3
- *Fabric Watch Commands* on page 3-4
- *Silkworm 6400 Commands* on page 3-4

Note: For detailed information about the telnet commands for a Zoning, Quickloop, Extended Fabrics, or Fabric Watch, refer to the specific user guide for that feature.

Zoning Commands

The following commands are available with the purchase of a BROCADE ZONING license key. For detailed information about these commands refer to the *BROCADE ZONING User's Guide*.

Table 3-1 Zoning Commands

Command	Description
Zone Alias	
aliAdd	Add a member to a zone alias.
aliCreate	Create a zone alias.
aliDelete	Delete a zone alias.
aliRemove	Remove a member from a zone alias.
aliShow	Show zone alias definition.
Zoning	
zoneAdd	Add a member to a zone.
zoneCreate	Create a zone.
zoneDelete	Delete a zone.
zoneRemove	Remove a member from a zone.
zoneShow	Show zone information.

Table 3-1 Zoning Commands (Continued)

Command	Description
QuickLoop Zoning	
qloopAdd	Add a member to a QuickLoop.
qloopCreate	Create a QuickLoop.
qloopDelete	Delete a QuickLoop.
qloopRemove	Remove a member from a QuickLoop.
qloopShow	Show QuickLoop information.
Zone Configuration and Management	
cfgAdd	Add a zone to a zone configuration.
cfgClear	Clear all zone configurations.
cfgCreate	Create a zone configuration.
cfgDelete	Delete a zone configuration.
cfgDisable	Disable a zone configuration.
cfgEnable	Enable a zone configuration.
cfgRemove	Remove a zone from a zone configuration.
cfgSave	Save zone configurations in flash memory.
cfgShow	Show zone configuration definition.
cfgTransAbort	Aborts the current zoning transaction.

QuickLoop Commands

The following commands are available with the purchase of a BROCADE QUICKLOOP license key. For detailed information about these commands refer to the *QuickLoop User's Guide*.

Table 3-2 QuickLoop Commands

Command	Description
qlDisable	Disables QuickLoop mode on the switch.
qlEnable	Enables QuickLoop mode on the switch.
qlPartner	Specifies a partner for a QuickLoop or displays information about the existing partner.
qlPortDisable	Disables a port from QuickLoop mode.

Table 3-2 QuickLoop Commands (Continued)

Command	Description
qlPortEnable	Enables a QuickLoop port to QuickLoop mode
qlShow	Displays QuickLoop information.
qlStatsShow	Displays QuickLoop statistics.
qlPortShowAll	Displays QuickLoop port information

QuickLoop Fabric Assist Mode Commands

The following commands are for QuickLoop Fabric Assist Mode. For detailed information about these commands refer to the *QuickLoop User's Guide*.

Table 3-3 QuickLoop Fabric Assist Mode Commands

Command	Description
fazoneAdd	Add member(s) to an existing QuickLoop Fabric Assist zone.
fazoneCreate	Creates a QLFA zone.
fazoneDelete	Delete an existing QuickLoop Fabric Assist zone.
fazoneRemove	Remove member or members from an existing QuickLoop Fabric Assist zone.
fazoneShow	Display QuickLoop Fabric Assist zone information.
faShow	Displays the port number and PID for each Fabric Assist host port located on this switch. It will also display a listing of each Target that has a Fabric Assist phantom on the host's port. The target's PID, assigned phantom ALPA and current online/offline status will all be displayed.
faStatsShow	Displays a set of statistics for each QLFA host on the switch.

Extended Fabric Command

The following commands are available with the purchase of a BROCADE EXTENDED FABRICS license key. For detailed information about this command refer to the *Distributed Fabrics User's Guide*.

Table 3-4 Extended Fabric Commands

Command	Description
portCfgLongDistance	Configure a port to support long distance links.

Fabric Watch Commands

The following commands are available with the purchase of a BROCADE FABRIC WATCH license key. For detailed information about these commands refer to the *Fabric Watch User's Guide*.

Table 3-5 Fabric Watch Commands

Command	Description
fwClassInit	Initializes all classes under Fabric Watch.
fwConfigReload	Reloads the Fabric Watch configuration.
fwConfigure	Displays and allows modification of the Fabric Watch configuration and status.
fwShow	Displays the thresholds monitored by Fabric Watch.

Silkworm 6400 Commands

The following commands are specific to the administration of the Silkworm 6400 switch. For more detailed information on these commands refer to the *Silkworm 6400 Product Guide*.

Table 3-6 Silkworm 6400 Commands

Command	Description
islTopoCheck	Display ISL switch group connections for a switch.
islTopoShow	Displays ISL switch group topology and status.
sgroupDelete	Delete a switch group.
sgroupRename	Rename a switch group.
sgroupSet	Create a switch group.
sgroupShow	Display switch group configuration information.
sgroupSupportShow	Display information about the 6400 switch for support purposes.
sgroupSwReplace	Replace a member of a switch group.

Glossary

8b/10b encoding	Encoding scheme that converts each 8-bit data byte into a 10-bit transmission character. Used to balance ones and zeros in high speed transports.
Address identifier	Value used to identify source or destination of a frame.
AL_PA	Arbitrated Loop Physical Address. Unique 8-bit value assigned during loop initialization to each port in an arbitrated loop.
Alias server	Fabric software facility that supports multicast group management.
ANSI	American National Standards Institute. 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 fibre channel transport structured as a loop. Allows communication between ports without using a switch. Requires successful arbitration by a port before a circuit is established. Supports up to 126 devices and one fabric attachment.
ASIC	Application-Specific Integrated Circuit.
ATM	Asynchronous Transfer Mode. Transport 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.
Bandwidth	The total transmission capacity of a link, cable, or system.
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 number of available receive buffers. See also <i>Buffer-to-buffer flow control</i> , <i>EE_Credit</i> .
BER	Bit Error Rate. Rate at which bits are expected to be received in error. Expressed as ratio of error bits to total bits transmitted. See also <i>Error</i> .
Bit synchronization	The delivery of correctly clocked bits at the required BER. See also <i>BER</i> .
Broadcast	Transmission of data from a single source to all devices in fabric, regardless of zoning. See also <i>Multicast</i> , <i>Unicast</i> .
BROCADE SES	BROCADE product that allows monitoring, configuring, and maintenance of SilkWorm [®] switches using SCSI-3 Enclosure Services.
BROCADE Distributed Fabrics	The combined user's guides for BROCADE EXTENDED FABRICS and BROCADE REMOTE SWITCH. Not a software product.

BROCADE EXTENDED FABRICS	BROCADE product that allows interconnection of fibre channel fabric over distances of up to 100 kilometers.
BROCADE REMOTE SWITCH	BROCADE product that enables two SilkWorm 2000-series switches to connect over an ATM connection. Requires compatible fibre channel-to-ATM gateways. Can be up to 10 kilometers distance between each switch and respective gateway.
BROCADE WEB TOOLS	BROCADE product that provides a graphical interface for monitoring and managing individual switches or entire fabrics from standard workstations.
BROCADE ZONING	BROCADE product that allows partitioning of fabric into logical groupings of devices. See also <i>Zone</i> .
Buffer-to-buffer flow control	Management of frame transmission rate between directly connected ports or within an arbitrated loop. See also <i>BB_Credit</i> .
Cascade	Two or more interconnected fibre channel switches. Switches from the SilkWorm 1000 series can cascade up to 32; switches from the SilkWorm 2000 series can cascade to 239. For BROCADE switches, a maximum of seven hops is recommended (no path longer than eight switches).
Circuit	Established communication path between ports. Consists of two virtual circuits that transmit in opposite directions. See also <i>Link</i> .
Class 1	A connection-oriented service that provides a dedicated connection between two ports, with notification of delivery or non-delivery.
Class 2	A multiplex and connectionless frame switching service between two ports, with notification of delivery or non-delivery.
Class 3	A connectionless frame switching service between two ports, without notification of delivery or non-delivery. Can also be used to provide a multicast connection between originator and recipients, with notification of delivery or non-delivery.
Class F	A connectionless service for control traffic between switches, with notification of delivery or non-delivery between the E_Ports.
Class of service	A set of specific delivery characteristics and attributes for frame delivery.
Comma	Unique pattern (either 1100000 or 0011111) used in 8b/10b encoding to specify character alignment within a data stream. See also <i>K28.5</i> .
Community (SNMP)	Relationship between a group of SNMP managers and an SNMP agent, in which authentication, access control, and proxy characteristics are defined.
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 <i>BB_Credit</i> and <i>EE_Credit</i> .
Cut-through	Switching technique that allows selection of a transmission route for a frame as soon as destination address is received. See also <i>Route</i> .

Data word	Type of transmission word that occurs within frames. The frame header, data field, and CRC all consist of data words. See also <i>Frame</i> , <i>Ordered set</i> , <i>Transmission word</i> .
Defined configuration	The complete set of all zone objects defined in the fabric; can include multiple zone configurations. See also <i>Enabled configuration</i> , <i>Zone configuration</i> .
Disparity	The relationship of ones and zeros in an encoded character. Neutral disparity indicates an equal number of each, positive disparity a majority of ones, and negative disparity a majority of zeros.
DLS	Dynamic Load Sharing. Dynamic distribution of traffic over available paths. Allows for redistribution when an Fx_Port or E_Port comes up or down.
Domain ID	As applies to switches in the BROCADE SilkWorm 2000 series, a unique number between 1 and 239 that identifies the switch to the fabric.
E_D_TOV	Error Detect Time-out Value. Time allowed for round-trip transmission before recovery is initiated. Can also be defined as the minimum time an L_Port waits for sequence completion before initiating recovery. See also <i>R_A_TOV</i> .
E_Port	Expansion Port. A switch port that has the ability to connect to a similar port on another switch, allowing creation of an interswitch link. See also <i>ISL</i> .
EE_Credit	End-to-end credit. The number of receive buffers allocated by recipient port to originating port. Used by Class 1 and 2 services to manage exchange of frames across intervening ports in fabric. See also <i>End-to-end flow control</i> , <i>BB_Credit</i> .
Enabled configuration	The currently enabled zone configuration. Only one configuration can be enabled at a time. See also <i>Defined configuration</i> , <i>Zone configuration</i> .
End-to-end flow control	Governs flow of Class 1 and 2 frames between N_Ports. See also <i>Buffer-to-buffer flow control</i> , <i>EE_Credit</i> .
Error	As applies to fibre channel, a missing or corrupted frame, time-out, loss of synchronization, or loss of signal. See also <i>Loop failure</i> .
Exchange	As applies to fibre channel, a communication session between N_Ports involving the transmission of one or more related sequences, in one or both directions. See also <i>Sequence</i> .
F_Port	Fabric Port. A port that can transmit using fabric protocol and can interface over links. Can be used to connect N_Ports to a switch. See also <i>FL_Port</i> , <i>Fx_Port</i> .
Fabric	A fibre channel network of two or more switches. Also called a “switched fabric.” See also <i>SAN</i> , <i>Cascade</i> .
Fabric name	Unique 64-bit identifier assigned to each separate fabric. Communicated during login and port discovery.
Fabric OS™	Proprietary operating system on BROCADE switches.
Fabric Watch™	BROCADE product that allows monitoring and configuration of fabric and switch elements.
FC-AL-3	The Fibre Channel Arbitrated Loop standard. Defined on top of FC-PH standards.

FC-FLA	The Fibre Channel Fabric Loop Attach standard.
FCP	Fibre Channel Protocol. Mapping of protocols onto 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.
FC-PI	The Fibre Channel Physical Interface standard.
FC-PLDA	The Fibre Channel Private Loop Direct Attach standard. Applies to operation of peripheral devices on private loops.
FC-SW-2	The Fibre Channel Switch Fabric standard, second generation. Specifies tools and algorithms for interconnection and initialization of fibre channel switches.
Fibre channel transport	Protocol service that supports communication between fibre channel service providers. See also <i>FSP</i> .
Fill word	A word transmitted to keep a fibre active. Either an idle or ARB ordered set.
FL_Port	Fabric Loop Port. A port that can transmit under both fabric protocol and loop protocol. Can be used to connect NL_Ports to a switch. See also <i>F_Port</i> , <i>Fx_Port</i> .
FLOGI	Fabric Login. Process by which a node makes a logical connection to fabric. Used by ports to determine if fabric is present, and if so to exchange service parameters with the fabric. See also <i>PLOGI</i> .
Frame	Fibre channel structure used to transmit data. Consists of start-of-frame delimiter, header, any optional headers, data payload, cyclic redundancy check (CRC), and end-of-frame delimiter. There are two types: data frames and link control frames. Similar to the networking concept “packet”. See also <i>Sequence</i> , <i>data word</i> .
FRU	Field Replaceable Unit. A component that can be replaced on site.
FS	Fibre Channel Service. A service that is defined by fibre channel standards and exists at a well-known address. For example, Name Server is a fibre channel service. See also <i>FSP</i> .
FSP	Fibre Channel Service Protocol. The common protocol used for all fabric services, transparent to fabric type or topology. See also <i>FS</i> .
FSPF	Fabric Shortest Path First. BROCADE routing protocol for fibre channel switches.
Full-duplex	Mode of communication that allows a port to simultaneously transmit and receive frames. See also <i>Half-duplex</i> .
Fx_Port	Fabric port that can operate either as <i>F_Port</i> or <i>FL_Port</i> . See also <i>F_Port</i> , <i>FL_Port</i> .
G_Port	Generic Port. Port that can operate either as <i>E_Port</i> or <i>F_Port</i> . Ports are defined as <i>G_Ports</i> when disconnected or have not assumed specific function within fabric.
Gateway	IP address assignment that provides translation for incompatible networks. For example, ATM gateway can connect a fibre channel link to an ATM connection.
GBIC	Gigabit Interface Converter. Removable serial transceiver module that allows gigabit physical-layer transport for fibre channel.

Gbps	Gigabits (1,062,500,000 bits) per second.
GBps	Gigabytes (1,062,500,000 bytes) per second.
Half-duplex	Mode of communication that allows a port to either transmit or receive frames, but not both at once. The only exception is link control frames, which can be transmitted at any time. See also <i>Full-duplex</i> .
Hard address	The AL_PA that an NL_Port attempts to acquire during loop initialization.
HBA	Host Bus Adapter. Interface card between a server or workstation bus and the fibre channel network. Similar to a network interface card.
Hub	Fibre channel wiring concentrator that collapses loop topology into physical star topology. Nodes are automatically added when active and removed when inactive.
Idle	Continuous transmission of an ordered set when no data is being transmitted to maintain an active fibre channel link and synchronization. See also <i>Fill word</i> .
Initiator	Server or workstation that initiates communications with storage devices over a fibre channel network. See also <i>Target</i> .
IOD	In Order Delivery. A parameter that, when set, guarantees that frames are delivered in-order if possible, and dropped if not.
ISL	Interswitch Link. Fibre channel link from the E_Port of one switch to E_Port of another.
IU	Information Unit. An individual set of information as defined by higher level process protocol definition, or upper-level protocol mapping.
JBOD	Just a Bunch Of Disks. A number of disks connected in a single chassis to one or more controllers. See also <i>RAID</i> .
K28.5	Special 10-bit character used to indicate beginning of transmission words that perform fibre channel control and signaling functions. First seven bits are comma pattern. See also <i>Comma</i> .
L_Port	Loop Port. Node or fabric port that can use loop protocol or fabric protocol. See also <i>Non-participating mode</i> , <i>Participating mode</i> .
Latency	Time required to transmit a frame, from the time sent until time of arrival.
Link	As applies to fibre channel, a physical connection between two ports, consisting of both transmit and receive fibres. See also <i>Circuit</i> .
Link services	Protocol for link-related actions.
LIP	Loop Initialization Primitive. The signal used to begin initialization in a loop. Indicates either loop failure or resetting of a node. See also <i>Loop initialization</i> .
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 <i>E_D_TOV</i> .
Loop initialization	Logical procedure used by L_Ports to discover environment. Can be used to assign AL_PA addresses, detect loop failure, or reset a node. See also <i>LIP</i> .

Loop_ID	Hex value representing one of 127 possible AL_PA values in a loop.
Looplet	Set of devices connected in a loop to a port that is part of another loop.
LPSM	Loop Port State Machine. Logical entity that performs arbitrated loop protocols and defines behavior of L_Ports when they require access to arbitrated loop.
LWL	Long wavelength fibre optic cable. Based on 1300 nm lasers supporting 1.0625 Gbps link speeds. Connectors are color-coded blue. See also <i>SWL</i> .
MIB	Management Information Base. SNMP structure that provides configuration and device information to assist with device management.
Multicast	Transmission of data from a single source to a number of specified N_Ports. See also <i>Broadcast</i> , <i>Unicast</i> .
Multimode	Fibre-optic cabling specification allowing up to 500 meters between devices.
N_Port	Node Port. Port that can attach to a fibre channel port. See also <i>NL_Port</i> , <i>Nx_Port</i> .
Name server	Service of storing names, addresses, and attributes for up to 15 minutes, provided by a switch to other entities in fabric. Defined by fibre channel standards, and existing at a well-known address. Also called Simple Name Server, SNS, or directory service. See also <i>FS</i> .
NL_Port	Node Loop Port. An N_Port that can use loop protocol. See also <i>N_Port</i> , <i>Nx_Port</i> .
Node	Fibre channel entity with one or more N_Ports or NL_Ports.
Node name	Unique identifier for a node, communicated during login and port discovery.
Non-participating mode	Mode in which L_Port is inactive in loop and cannot arbitrate or send frames, but can retransmit received transmissions. Port enters mode if there are more than 127 devices in loop, and an AL_PA cannot be acquired. See also <i>Participating mode</i> .
Nx_Port	Node port that can operate as either an N_Port or NL_Port.
Ordered set	A type of transmission word that occurs outside of frames, and is used to manage frame transport and differentiate fibre channel control information from data. See also <i>Data word</i> , <i>Transmission word</i> .
Participating mode	Mode in which an L_Port in a loop has valid AL_PA and can arbitrate, send frames, and retransmit received transmissions. See also <i>Non-participating mode</i> .
Phantom device	Device not physically in a loop but logically included by phantom address.
Phantom address	AL_PA value assigned to device not physically in loop. Also called phantom AL_PA.
PLOGI	Port Login. Port-to-port login process by which initiators establish sessions with targets. See also <i>FLOGI</i> .
Point-to-point	Two fibre channel devices connected by a direct link. See also <i>Topology</i> .
Port_Name	Unique FC identifier for port, communicated during login and port discovery.

POST	Power On Self Test. Series of self-tests run after a switch is rebooted or reset.
Private NL_Port	NL_Port that does not log into the fabric and communicates only with private NL_Ports in same loop.
Private device	Device that supports arbitrated loop protocol and understands 8-bit addresses, but cannot log into fabric.
Private loop	An arbitrated loop with no fibre channel attachment.
Protocol	A defined method and standards for communication.
Public NL_Port	NL_Port that logs into the fabric, can function within public or private loops, and can communicate with public or private NL_Ports.
Public device	Device that supports arbitrated loop protocol, understands 8-bit addresses, and can log into fabric.
Public loop	An arbitrated loop attached to a switch.
QuickLoop™	Can indicate either the BROCADE product that allows private devices within loops to communicate over the fabric with other devices, or the set of actual devices or looplets connected in a loop by BROCADE's QuickLoop technology.
R_A_TOV	Resource Allocation Time-out Value. Maximum time a frame can be delayed in the fabric and still be delivered. See also <i>E_D_TOV</i> .
RAID	Redundant Array of Independent Disks. Collection of disk drives that appear as a single volume to the server, and are fault-tolerant through mirroring or parity checking. See also <i>JBOD</i> .
Route	As applies to fabric, a communication path between two switches. See also <i>FSPF</i> .
RSCN	Registered State Change Notification. Switch function that sends notification of fabric changes from the switch to specified nodes.
SAN	Storage Area Network. Network of systems and storage devices that usually communicate using fibre channel protocols. See also <i>Fabric</i> .
Sequence	A fibre channel structure containing one or more frames transmitted in a unidirectional manner between N_Ports. See also <i>Exchange, Frame</i> .
SilkWorm®	Brand name for line of BROCADE switches.
Single mode	Fibre-optic cabling standard that provides for distances of up to 10 kilometers between devices.
SNMP	Simple Network Management Protocol. Internet management protocol that does not rely on underlying communication protocols and can therefore be made available over other protocols, such as UDP/IP. See also <i>Community (SNMP)</i> .
SNS	Simple Name Server. See <i>Name server</i> .
Switch	A combination of hardware and firmware that routes frames according to fibre channel protocol. Switches can have G_Ports, E_Ports, F_Ports, and FL_Ports.

Switch Domain_ID	Unique identifier for a switch, used in routing frames. Usually automatically assigned by the switch, but can be manually assigned by administrator.
Switch name	Arbitrary name assigned to switch by administrator. See also <i>Switch Domain_ID</i> .
SWL	Short wavelength fiber-optic cable. Based on 850 nm lasers supporting 1.0625 Gbps link speeds. Connectors are color-coded black. See also <i>LWL</i> .
Target	Storage device that receives communications from a server or workstation over a fibre channel network. See also <i>Initiator</i> .
Topology	As applies to fibre channel, the structure of the fibre channel network and the resulting possible communication paths. There are three fibre channel topologies: point-to-point, fabric, and arbitrated loop.
Translative mode	Mode in which public devices can communicate with private devices across fabric.
Transmission Character	A 10-bit character encoded according to the rules of the 8b/10b algorithm. See also <i>8b/10b encoding</i> , <i>Transmission word</i> .
Transmission Word	Group of four transmission characters, totaling 40 bits. Two types: data words and ordered sets. See also <i>Data word</i> , <i>Ordered set</i> , <i>Transmission character</i> .
Trap (SNMP)	Message sent by SNMP agent to inform SNMP management station of critical error. See also <i>SNMP</i> .
Tunneling	Technique for enabling source and destination hosts to communicate when on same type of network but connected by a different type of network.
U_Port	Universal Port. Switch port that can operate as G_Port, E_Port, F_Port, or FL_Port. A port is defined as a U_Port if not connected or if it has not assumed a specific function in the fabric.
ULP	Upper Layer Protocol. Protocol that runs on top of fibre channel. Typical upper layer protocols: SCSI, IP, HIPPI, IPI.
Unicast	Transmission of data from a single source to single destination. See also <i>Broadcast</i> , <i>Multicast</i> .
Well-known address	As applies to fibre channel, a logical address stored on the switch and defined by fibre channel standards as being assigned to a specific function.
WWN	World Wide Name. Identifier that is unique world-wide. Each entity in a fabric has a separate WWN.
Zone	Set of hosts and devices attached to same fabric and having access permission, including RSCNs and user data, to each other. Entities inside a zone are not visible to entities outside the same zone, even if the outside entities are in another zone.
Zone configuration	A specified set of zones. Enabling a zone configuration enables all zones in that configuration. See also <i>Defined configuration</i> , <i>Enabled configuration</i> .

Index

A

- agtcfgDefault 1-1
- agtcfgSet 1-3
- agtcfgShow 1-5
- aliasShow 1-7

B

- BadEOF 2-11
- BadOrdSet 2-11
- bcastShow 1-9
- BROCADE EXTENDED FABRICS 1-111

C

- camTest 1-10
- centralMemoryTest 1-11
- cmemRetentionTest 1-12
- cmiTest 1-13
- configDefault 1-15
- configDownload 1-16
- configShow 1-18
- configUpload 1-20
- configure 1-22
- CRC_err 2-11
- crossPortTest 1-28

D

- date 1-32
- diagClearError 1-33
- diagDisablePost 1-34
- diagEnablePost 1-35
- diagHelp 1-37

- diagnostic error messages 2-8
- diagShow 1-38
- DiscC3 2-11
- displaying error messages 2-2
- dlsReset 1-40
- dlsSet 1-41
- dlsShow 1-42

E

- Enc_in 2-11
- Enc_out 2-11
- errDisplayFilter 1-43
- errDump 1-44
- error message numbers 2-4
- error messages, displaying 2-2
- errShow 1-45, 2-1

F

- fabricShow 1-50
- fanShow 1-52
- fastboot 1-53
- Fibre Channel Association x
- firmwareDownload 1-54
- FrmTooLong 2-11
- fspfShow 1-56

G

- gbicShow 1-58

H

h command 1-60
help 1-61

I

i command 1-62
ifModeSet 1-64
ifModeShow 1-65
ifShow 1-66
interfaceShow 1-68
iodReset 1-71
iodSet 1-72
iodShow 1-73
ipAddrSet 1-74
ipAddrShow 1-75
islTopoCheck 1-76
islTopoShow 1-77

L

licenseAdd 1-79
licenseHelp 1-80
licenseRemove 1-81
licenseShow 1-82
linkCost 1-83
login 1-85
logout 1-86
loopdiagClear 1-87
loopdiagDone 1-88
LSDBShow 1-89

M

mcastShow 1-92
msConfigure 1-93
msPlatShow 1-95
msPICapabilityShow 1-97
msPIClearDB 1-96
msPIMgmtActivate 1-98

msPIMgmtDeactivate 1-99

N

nbrStateShow 1-101
nbrStatsClear 1-100
nsAllShow 1-102
nsShow 1-103

P

parityCheck 1-105
passwd 1-106
portCfgLongDistance 1-111
portCfgMcastLoopback 1-113
portDisable 1-115
portEnable 1-116
portErrShow 1-117
portLogClear 1-119
portLogDump 1-120
portLogShow 1-121
portLoopbackTest 1-128
portPerfShow 1-130
portRegTest 1-131
portRouteShow 1-133
portShow 1-135
portStatsShow 1-137
POST 2-3
psShow 1-140

Q

quietMode 1-141

R

ramTest 1-142
reboot 1-144
resetting bad ports 2-2
routeHelp 1-145

S

- setGbicMode 1-146
- setSplbMode 1-147
- sgroupDelete 1-148
- sgroupRename 1-149
- sgroupSet 1-150
- sgroupShow 1-152
- sgroupSupportShow 1-154
- sgroupSwReplace 1-157
- snmpMibCapSet 1-159
- spinSilk 1-160
- sramRetentionTest 1-164
- support, technical x
- supportShow x, 1-165
- switchBeacon 1-167
- switchDisable 1-168
- switchEnable 1-169
- switchName 1-170
- switchShow 1-171
- switchStatusPolicySet 1-174
- switchStatusPolicyShow 1-177
- switchStatusShow 1-179
- syslogdIpAdd 1-180
- syslogdIpRemove 1-181
- syslogdIpShow 1-182
- system error message formats 2-1
- system error messages 2-14

T

- technical support x
- tempShow 1-183
- timeOut 1-184
- topologyShow 1-185
- trackChangesSet 1-187
- TruncFrm 2-11

U

- uptime 1-188

- uRouteConfig 1-190
- uRouteRemove 1-191
- uRouteShow 1-192

V

- version 1-194

