

# Quantum ATL P-Series User's Guide Addendum - Prism FC230 Router

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## Introduction

In default configuration, the Quantum ATL P-Series tape library is controlled by a host computer through a SCSI differential bus that uses the SCSI-2 medium changer command set. There is also an RS-232 diagnostic port interface.

Through the installation of the FC230 Router with Prism Architecture™, you can easily convert the ATL P-Series library from a SCSI host interface to Fibre Channel. This document describes the FC230 router, including configuration procedures common to ATL P-Series libraries.

**Note:** The term "ATL P-Series" refers to the following ATL Tape Library™ models: P2000, P3000, P4000, and P7000.

For a complete description of ATL P-Series library operating procedures, refer to the appropriate ATL P-Series Library User's Guide.

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### Fibre Channel Description

Fibre Channel is a serial data transfer architecture for use with computers and mass storage devices. Fibre Channel is rapidly emerging to challenge SCSI as the interface of choice for host-to-storage applications.

Fibre Channel advantages include:

- Up to 500-meter connection range
- 1 GB/S data transfer rate
- Support of up to 126 devices on a loop
- Support of 24-bit addressing for over 16 million devices in point-to-point mode or fabric
- Operating system independence
- Interconnect flexibility
- Full direct connectivity between all ports on a network, increasing the total throughput of all devices on a network

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### FC230 Router Operation

Once the FC230 router is installed and tested, the library operates exactly the same as a ATL P-Series library with a SCSI host interface.

The look, feel, and operation of the library's graphical user interface (GUI) panel remains unchanged.

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### Key to Successful Configuration of the FC230

The FC230 must be configured using the on-board FC230 router Services software. The key to successfully configuring the FC230 Option is to know how many:

- SCSI buses are present in the library
- SCSI devices are connected to each bus

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## FC230 Router Configuration

The FC230 router configuration includes the following steps:

- [Connect a Service PC to the Library](#)
- [Start the FC230 Services Software](#)
- [Upgrade the FC230 Firmware](#)
- [Scan the SCSI Buses](#)

**Caution:** If there is more than one FC230 board in the library, be sure to repeat this procedure for each board.

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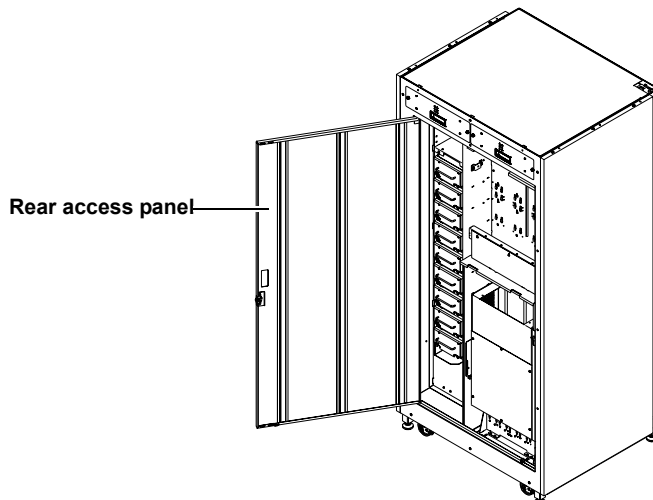
### Connect a Service PC to the Library

To connect a service PC to the library:

- 1 Open the library back access panel (see [figure 1](#)).

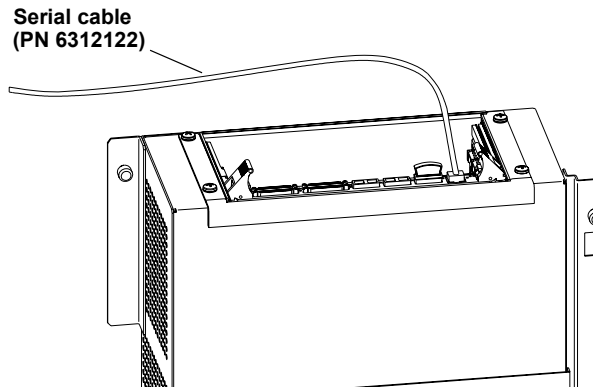
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Figure 1 Opening the Rear Access Panel (ATL P2000 library shown)



- 2 Locate the RJ-45 connector on the top of the first FC230 board in the library (see [figure 2](#)).
- 3 Connect a 9-pin serial cable (PN 6312122) to the RJ-45 connector.

Figure 2 FC230 Board  
RJ-45 Connector



- 4 Route the serial cable down through the cable slot in the base of the library cabinet.
- 5 Close the library back access panel.

**Caution:** If the panel is left open with the library power on, the electronics will overheat and generate an error.

- 6 Connect the opposite end of the serial cable to the com port on a service PC.
- 7 Turn on the PC.
- 8 Bring up a terminal emulation program on the PC such as HyperTerminal or ProComm.
- 9 Set the PC com port operation as follows:
  - Baud rate: 9600
  - Data bits: 8
  - Stop bits: 1
  - Parity: none
  - Flow control: none
  - Properties/Setting/Function,...keys act as: Windows keys

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## Start the FC230 Services Software

To start FC230 services software:

- 1 Turn on the library or cycle the library power.
- 2 Upon power-up, the POST output scrolls past the PC screen, shown in [figure 3](#), and the services software is immediately available.

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Figure 3 POST Output Screen

```
mc100 - HyperTerminal
File Edit View Call Transfer Help

PRISM FC230
(c) 2000 ATTO Technology, Incorporated.

Firmware version 2.11 release date May 14 2001, 15:16:28 Build 005W

Power-On Self-Test Completion Status: GOOD
64 Megabytes of RAM Installed.

3 1.0624 Gb/s Fibre Channel Interfaces.
4 HVD SCSI Interface Ports.

Interface 0 World Wide Name = 20 00 00 10 86 10 0A B4
Interface 1 World Wide Name = 20 00 00 10 86 10 0A B5
Interface 2 World Wide Name = 20 00 00 10 86 10 0A B6

FC230 Serial Number = "230H100385"
FC230 Name = " "
Internal Temperature = 48 c [0 - 70]
ErrorLog Contents: NO ERRORS
For help, type HELP.

Ready.
```

- 3 If the initial screen is not displayed, check the PC COM port settings then power cycle the library.
- 4 Press <Enter> when POST completes and Ready displays. The PC is now in command line mode.

If this is an initial installation, or a replacement FC230 board has been installed, the HyperTerminal screen may not display characters that are entered at the keyboard.

**Note:** Firmware version 2.11 or higher automatically enables echo mode.

- 5 Enter the following commands to enable echo mode:
  - a Type `set serialportecho enabled`, then press <Enter>.
  - b Type `saveconfiguration`, then press <Enter>.  
Wait for the Ready prompt before proceeding.
  - c Type `firmwarerestart`, then press <Enter>.

The POST screen displays and the FC230 services software is now ready for use.

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## Upgrade the FC230 Firmware

If a new version of FC230 firmware is available, use the following procedure to download the new firmware to the FC230 board:

- 1 Copy the new firmware file to a directory on the service PC.
- 2 Set the FC230 baud rate and the HyperTerminal baud rate to 115200 using the following steps (this speeds the firmware download process):
  - a At the Ready prompt type `set serialportbaudrate 115200`, then press <Enter>.
  - b Type `saveconfiguration`, then press <Enter>.  
Wait for a new Ready prompt.
  - c From the HyperTerminal menu (located at the top of the screen) select Call/Disconnect.
  - d From the HyperTerminal menu select File/Properties/Connect To tab/ Configure button.
  - e Set the baud rate to 115200.
  - f From the HyperTerminal menu, select Call/Connect.

**Note:** Press <Enter> until you see the ready prompt.

- 3 At the Ready prompt:
  - a Type `saveconfiguration` and then press <Enter>.
  - b Type `firmwarerestart` and then press <Enter>.
  - c Type `zmodem receive` and then press <Enter>.
- 4 From the HyperTerminal menu at the top of the screen select:  
`Transfer/Send File`
- 5 Browse to the location of the new firmware file:  
`xxx.IMA`
- 6 In the Send File dialog box, select protocol:  
`zmodem`
- 7 Click the **Send** button.  

The firmware download begins and takes a few minutes to complete. When the download is complete a new Ready prompt appears on the HyperTerminal screen.
- 8 At the Ready prompt, power cycle the library.

**Note:** The library has to be power cycled for the new firmware to take effect.

Confirm the new firmware revision is displayed in the HyperTerminal screen as the software comes ready. Wait for the Ready prompt.

- 9** Reset the FC230 and the service PC back to 9600 baud:
  - a** At the Ready prompt, type `set serialportbaudrate 9600` and then press <Enter>.
  - b** Type `saveconfiguration`, then press <Enter>.  
Wait for a new Ready prompt.
  - c** From the HyperTerminal menu, located at the top of the screen, select Call/Disconnect.
  - d** From the HyperTerminal menu select File/Properties/Connect To tab/Configure button.
  - e** Set the baud rate to 9600.
  - f** From the HyperTerminal menu select Call/Connect.

---

## Scan the SCSI Buses

Use the following procedure to confirm that the SCSI buses are cabled properly and the SCSI IDs are properly set, as shown in [figure 4](#).

- 1** Connect the serial cable to the RJ-45 connector of the first FC230 board in the library.
- 2** Cycle power on the library to start the FC230 services software.
- 3** At the Ready prompt:
  - a** Type `scsitargets 0`, then press <Enter> as shown in [figure 4](#).  
This command scans and displays all SCSI devices found on SCSI bus 0 - the robotics controller and drives 0 and 1.
  - b** Type `scsitargets 1`, then press <Enter> as shown in [figure 4](#).  
Scans bus 1 - displays drives 2 and 3.
  - c** Type `scsitargets 2`, then press <Enter>.  
Scans bus 2 - displays drives 4 and 5.
  - d** Type `scsitargets 3`, then press <Enter>.  
Scans bus 3 - displays drives 6 and 7.
- 4** Move the serial cable to the RJ-45 connector of the second FC230 board in the library.
- 5** Press <Enter>.

Ready is displayed on the screen. The PC is now in command line mode.



If this is an initial installation, or a replacement FC230 board has been installed, the HyperTerminal screen may not display characters that are entered at the keyboard.

**Note:** Firmware version 2.11 or higher automatically enables echo mode.

**6** Enter the following commands to enable echo mode:

**a** Type `set serialportecho enabled`, then press <Enter>.

**b** Type `saveconfiguration`, then press <Enter>.

Wait for the Ready prompt before proceeding.

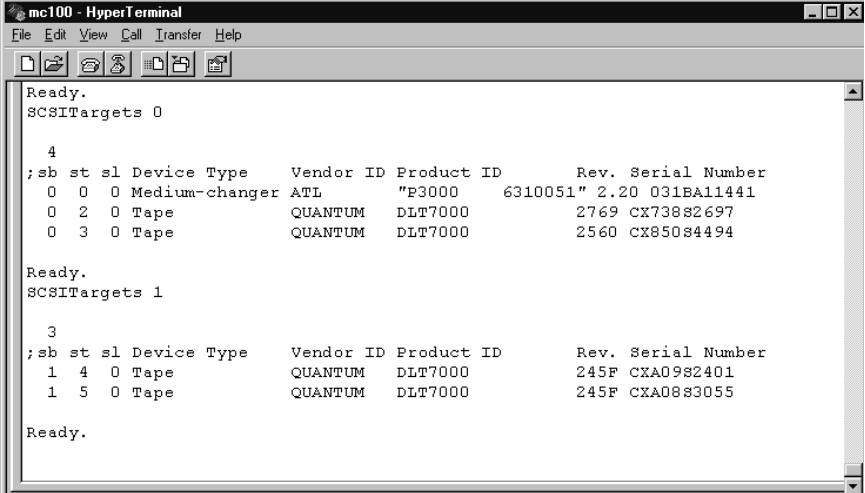
**c** Type `firmwarerestart`, then press <Enter>.

The POST screen displays and the FC230 services software is ready for use.

**7** At the Ready prompt type `scsitargets 0`, then press <Enter>.

Scans bus 0 [of 2nd router board] and displays drives 8 and 9.

Figure 4 SCSI Bus Scan Screen



```
mc100 - HyperTerminal
File Edit View Call Transfer Help
Ready.
SCSITargets 0

4
;sb st sl Device Type Vendor ID Product ID Rev. Serial Number
0 0 0 Medium-changer ATL "P3000 6310051" 2.20 031BA11441
0 2 0 Tape QUANTUM DLT7000 2769 CX73882697
0 3 0 Tape QUANTUM DLT7000 2560 CX85084494

Ready.
SCSITargets 1

3
;sb st sl Device Type Vendor ID Product ID Rev. Serial Number
1 4 0 Tape QUANTUM DLT7000 245F CXA0982401
1 5 0 Tape QUANTUM DLT7000 245F CXA0883055

Ready.
```

## CLI Command Types

Fibre Channel CLI commands have four types of operation:

- Immediate – causes an immediate action; not preceded by a **get** or **set** operation
- Get – returns the current value of a parameter (abbreviated “g”)
- Set – changes the value of a parameter (abbreviated “s”).

- Usage—if an operation type cannot be determined, the “Usage” form is assumed and a brief help message appears.

Many Set commands require a SaveConfiguration command to take effect. When this is required, an asterisk appears next to the command line prompt.

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## CLI Command Syntax

The information below can help you make proper CLI entries.

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### Number and String Entry

Decimal numbers may be entered raw (ex: 123), octal numbers must be preceded by “0” (ex: 0713), and hexadecimal numbers must be preceded by the C-style “0x” prefix (ex: 9x1FA4).

Quoted strings are treated as a single parameter for any command that expects character input, regardless of space within the string.

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### Command Entry

The following is a list of symbols used commonly used with commands:

- [ ] indicates required entry
- < > indicates optional entry
- | indicates choose one entry

CLI commands are not case sensitive. Upper and lowercase characters have been used in this document to aid readability.

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### List of Abbreviations

The following list of abbreviations are used in command lines:

- fp: Fibre Channel port number (0 - 2)
- fl: Fibre Channel LUN (0 - 31)
- sb: SCSI bus number (0 - 3)
- st: SCSI target ID (1 - 15)
- sl: SCSI LUN (0 - 7)

## Fibre Channel Services Command List

This section provides a list of currently available Fibre Channel Services Software commands. Most commands are available for both the FC230 and FC310 bridges; shaded commands are supported by the FC230 bridge only.

Command	Description	Default	Syntax
AddressMap	Sets the current operating mode of the FC ports	A	set addressmap [A   B [1   2]] get addressmap
AutoMap (Immediate)	Automatically maps all currently operational SCSI devices attached to the Fibre Channel bridge across 1, 2, and all 3 ports, as defined by the user.		automap < [fp]   [fp [fp]]   [fp [fp [fp]]] >  (Typing automap by itself distributes maps across all 3 ports.)
BootFibreDelay	Sets the time in seconds for the Fibre Channel bridge to wait before announcing its presence to the Fibre switch.	30	set bootfibredelay [0   15   30] get bootfibredelay
BootScanPorts	Used to specify which FC port should be used to assign devices within a boot scan.  Addressmap B (port failover) overrides this command.	Auto	set bootscanports [fp [fp [fp]]]   [all]   [auto] get bootscanports  [all] indicates that all ports will be used. [auto] indicates that the FC bridge should detect which ports are in use.
ClearEvent (Immediate)	Clears the contents of the event log.		clearevent
DisplayEvent (Immediate)	Displays the contents of the event log. The log is filtered by the current switch settings as described in the DispEvent section.		displayevent < all >  < all > causes the display filtering to be temporarily suspended and all logged events to be displayed.

Command	Description	Default	Syntax
<p>DispEvent</p> <p>Set the switches which control the filtering performed when displaying events. Switches have the following meanings and settings:</p> <p>(subsystem) switch: mask that controls which subsystem events are displayed. The mask is a byte value with the following bit patterns corresponding to the currently supported subsystems:</p> <p>0x01 FCP Processor /i960 Interaction</p> <p>0x02 SCSI Processor/i960 Interaction</p> <p>0x04 Ethernet (Future)</p> <p>0x20 NVRAM &amp; Flash</p> <p>To display the events from several different subsystems, use a mask value equal to the logical OR of the corresponding subsystem values. To display events from all subsystems enter the value 3Fh for the mask.</p> <p>(event_level) switch: mask that controls what reporting level events are displayed. The mask is a byte value with the following bit patterns corresponding to the currently supported reporting levels:</p> <p>0x01 Info; general information</p> <p>0x02 Warning; unexpected situation/condition</p> <p>0x04 Critical; operation limited/curtailed</p> <p>0x08 Failure; hard failure</p> <p>0x10 Other; otherwise not categorized</p> <p>0x20 Debug; tracking events</p> <p>To display events from several different reporting levels, use a mask value equal to the logical OR of the corresponding reporting levels. To display events for all reporting levels enter the value 3Fh for the mask.</p> <p>(status) switch: has the following two values which correspond to the status of the events to be displayed:</p> <p>all All events, regardless of their status values are displayed.</p> <p>ngood Only events with a status other than good are displayed.</p>	<p>3Fh</p> <p>3Fh</p> <p>all</p>	<p>3Fh</p> <p>3Fh</p> <p>all</p>	<p>set dispevent [subsystem] [event_level] [status]</p> <p>get dispevent</p> <p>Example: 0x01 0x01 all</p>
<p>DispFcPortDB (Immediate)</p>	<p>Displays the contents of the specified FC port's internal port database.</p>		<p>dispfcportdb &lt;fp&gt;</p>

Command	Description	Default	Syntax
EccLog	Displays/clears ECC log statistics for the FC bridge.		set ecclog clear get ecclog  The get command displays the statistics. The set commands clears the statistics.
EthernetSpeed	Sets/displays the Ethernet speed of the card	auto	set EthernetSpeed [10   100   auto] get EthernetSpeed
FcConnMode	Set the connection mode for the FC230 to arbitrated loop or point-to-point. Applies to all three Fibre Channel ports on each board.	ptp	set fcconnmode [loop   ptp] get fcconnmode
FcFairArb	Turn on or off the FC-AL arbitration fairness. Applies to all three Fibre Channel ports on each board.	enabled	set fcfairarb [enabled   disabled] get fcfairarb
FcFrameLength	Specify the maximum number of payload bytes in a Fibre Channel frame. If the frame length is not specified, the current frame length is displayed.	2048 bytes	set fcframeLength [512   1024   2048] get fcframeLength
FcFullDuplex	Enables/disables full duplex communication between the FC bridge and other Fibre devices.	enabled	set fcfullduplex [enabled   disabled] get fcfullduplex
FcHard	Enable or disable Fibre Channel hard address assignment. Under soft addressing the FC230 loop address is assigned during loop initialization.	hard	set fchard [enabled   disabled] get fchard
FcHardAddress	Set the value used as the FC-AL hard address. There is an individual hard address value for each of the three Fibre Channel ports on each board.	port 0 = 0x03 port 1 = 0x04 port 2 = 0x05	set fchardaddress [fp [address]] get fchardaddress [fp]
FcInitiator	Enables/disables the FC bridge as an initiator on the Fibre network. This functionality is required for features such as Extended Copy to locate and send commands to Fibre devices.	disabled	set fcinitiator [enabled   disabled] get fcinitiator

Command	Description	Default	Syntax
FcPortFailure (Immediate)	Controls the behavior of FC ports while the bridge is in AddressB (failover) mode.		fcportfailover fp [recover   force [loopdown   portdown   isperr]]  The recover option should be selected for actual failover operation.  The force option forces a failure for testing and demonstration purposes by simulating loss of FC synchronization (loopdown), ISP chip failure detected by fabric (portdown), or internal ISP chip error (isperr).
FcPortList (Immediate)	List the available Fibre Channel ports and their current status.		fcportlist
FcSCSIBusyStatus	Specify the SCSI status value returned when the FC230 is unable to accept a SCSI command due to a temporary lack of internal resources.	QFULL	set fcscsibusystatus [busy   qfull] get fcscsibusystatus
FcTargets (Immediate)	Displays information about every FC device visible to a bridge operating in initiator mode.		fctargets <fp>
FcWWName	Reports the World Wide Name (WWN) of the referenced Fibre Channel interface.		get fcwwname [portnumber]
FibreBridgeModel	Report the specific FC230 model information.		get fibrebridgemodel
FibreBridgeName	Specify the 8-character name assigned to the FC bridge.	"....."	set fibrebridgename [name] get fibrebridgename
FibreBridgeTargetLUN	Specify the soft target LUN used by the FC bridge when addressed by the host. This LUN is taken from NVRAM.	14 (all FC ports)	set fibrebridgetargetlun [0 - 31]
FirmwareRestart (Immediate)	Reboot the FC bridge firmware.		firmwarerestart
Help (Immediate)	Displays a list of available commands. When the optional command name is present, detailed command-specific information is displayed.		help [command name]
IdentifyFibreBridge	Causes the "Fault" LED on the FC230 board to blink continuously until disabled.	disabled	set identifyfibrebridge [enabled   disabled] get identifyfibrebridge

Command	Description	Default	Syntax
Info (Immediate)	Displays version numbers and other product information for key FC bridge components.		info
IPAddress	Sets/displays the current IP address of the FC		set IPAddress xxx.xxx.xxx.xxx get IPAddress
IPDHCP	Enables/disables the FC to request an IP address from the network. Requires the bridge be attached to a network with at least one DHCP server.	enabled	set IPDHCP [enabled   disabled] get IPDHCP
IPGateway	Sets/displays the current default gateway. If IPDHCP is enabled, the get command reports the current IP gateway assigned by the nameserver.		set IPGateway xxx.xxx.xxx.xxx get IPGateway
IPSubnetMask	Sets/displays the current subnet mask. IF IPDHCP is enabled, the get command reports the current IP subnet mask assigned by the nameserver.		set IPSubnetMask xxx.xxx.xxx.xxx get IPSubnetMask
LicensedOption	Enables/disables a user-defined licensed option.	none	set licensedoption [option_name [enabled   disabled]] get licensedoption  The get option reports whether a particular option is enabled.
LogEvent	Sets the switches which control the filtering performed when logging events. The switches have the following meanings and settings:  (enabled   disabled) switch: controls whether or not events logging is enabled or disabled.  (subsystem) switch: same as switch for DispEvent in previous section  (event_level) switch: same as switch for DispEvent in previous section  (status) switch: same as switch for DispEvent in previous section	disabled	set logevent [enabled   disabled]   [[subsystem] [event_level] [status]] get logevent
MaxEnclTempAlrm	Sets/displays the maximum enclosure temperature alarm of the unit in degrees C (5-40 degrees C).	70 degrees Centigrade	set maxencltempalrm [5 - 40] get maxencltempalrm

Command	Description	Default	Syntax
MinEnclTempAlrm	Sets/displays the minimum enclosure temperature alarm of the unit in degrees C (5-40 degrees C).	0 degrees Centigrade	set minencltempalrm [5 - 40] get minencltempalrm
OEMConfigFile	Reports the name (i.e., the contents of the first record) of the OEM configuration file stored in persistent memory.	ATTO	get oemconfigfile
ParityLog	Displays/clears the parity error statistical log for the FC bridge.		set parity clear get paritylog  The get command displays the statistics. The set commands clears the statistics.
Reserve (Immediate)	Reservation of the FC230 is implicit; once the configuration image is changed by any user of services (Serial/Ethernet/Etc.) the FC230 becomes RESERVED. Performing a SaveConfiguration, RestoreConfiguration or FcRestart RELEASES the FC230 so that other devices may access it.  When the FC230 services interface is reserved, set commands are unavailable, but get commands are available. Note that at least one service interface always has access to the FC230 at all times. This interface always reports a RELEASED status, since it may issue set commands.		reserve
RestoreConfiguration (Immediate)	Restore to factory default configuration or the last saved configuration. The new configuration must be saved to take effect.		restoreconfiguration [default   saved]
RouteChange (Immediate)	Map a Fibre Channel port and LUN to a SCSI bus, target, and LUN. Valid route change entries are:  fp (0-2) fl (0-31) sb (0-3) st (0-15) sl (0-7).		routechange [fp] [fl] [sb] [st] [sl]
RouteDisplay (Immediate)	List the currently mapped Fibre Channel-to-SCSI routes.		routedisplay routedisplay [fp] routedisplay [online   offline] routedisplay [fp [fl]] routedisplay [fp [online   offline]]



Command	Description	Default	Syntax
RouteOffline	Set the status of a route to offline.		set routeoffline [fp] [fl] get routeoffline [fp] [fl]
RouteOnline	Set the status of a route to online.		set routeonline [fp] [fl] get routeonline [fp] [fl]
SaveConfiguration (Immediate)	Save the new configuration. If a firmware restart is required to make the change, the user is prompted to confirm the restart. The user can override the confirmation request by indicating the override value on the command line.		saveconfiguration < restart   norestart >
ScsiInitID	Specify the SCSI initiator ID to be used on the specified SCSI port.	0x07 (all SCSI buses)	set scsiinitid [sb [0-15]] get scsiinitid [sb]
ScsiPortList (Immediate)	List the available SCSI ports and their status.		scsiportlist
ScsiPortReset (Immediate)	Reset the specified SCSI bus.		scsiportreset [sb]
ScsiPortResetOnStartup	Specify whether the SCSI port should be reset on power-up.	Reset each SCSI bus on startup	set scsiportresetonstartup [sb [enabled   disabled]] get scsiportresetonstartup [sb]
ScsiPortSelTimeout	Show the time (msec) that the router waits for a response from a SCSI device on the selected port after a selection request.	256 msec	set scsiportseltimeout [sb [256   128   64   32   16   8   4   2   1]] get scsiportseltimeout [sb]
ScsiPortSyncTransfer	Specify whether synchronous SCSI transfers should be negotiated with devices on the specified SCSI port.	enabled	set scsiportsynctransfer [[sb] [enabled   disabled]] get scsiportsynctransfer [sb]
ScsiPortTaggedQueuing	Specify whether tagged command queuing is allowed on the SCSI port.	disabled	set scsiporttaggedqueuing [sb [enabled   disabled]] get scsiporttaggedqueuing [sb]
ScsiPortUltra2	Specify whether the selected port supports Ultra2 (LVD) transfers.		set scsiportultra2 [sb [enabled   disabled]] get scsiportultra2 [sb]
ScsiPortWideTransfer	Specify whether wide SCSI transfers should be negotiated.	enabled	set scsiportwidetransfer [sb [enabled   disabled]]
ScsiTargets	List the SCSI devices that are on the referenced SCSI bus.		get scsitargets [sb]
ScsiTermination	Set the internal termination of the referenced SCSI port.	enabled	set scsitermination [sb [enabled   disabled]] get scsitermination [sb]
SerialNumber	Report the FC230 board serial number.	230x...	get serialnumber

Command	Description	Default	Syntax
SerialPortBaudRate	Set the baud rate for the FC230 serial port (2400, 9600, 19200, 38400, 57600, or 115200).	9600	set serialportbaudrate [rate] get serialportbaudrate
SerialPortEcho	Enables/disables echoing of keyboard input.	disabled	set serialportecho [enabled   disabled]
SerialPortHandshake	Set the data handshaking method used for controlling the flow between the transmitter and receiver (hardware, software, or none).	none	set serialporthandshake [hard   xon   none] get serialporthandshake
SerialPortStopBits	Set the number of stop bits for the FC230 serial port (1 or 2).	1	set serialportstopbits [1   2] get serialportstopbits
SpeedWrite	Enables/disables the Speed Write command. Speed Write is designed to improve the performance of FCP WRITE commands to SCSI devices attached to the FC bridge.	disabled	set speedwrite [sb st sl   all] [enabled   disabled] get speedwrite [sb st sl   all]  "sb" specifies SCSI bus, "st" specifies SCSI target, and "sl" specifies SCSI LUN.
SpeedWriteDefault	Sets Speed Write functionality to be enabled for subsequent SCSI devices mapped to the FC bridge.	disabled	set speedwritedefault [enabled   disabled] get speedwritedefault
Temperature	Report the unit temperature in degrees C.		get temperature
VerboseMode	Sets the Command Line Interface to display extended information about a parameter when the help command is given. When verbose mode is enabled, parameter values are generally preceded by labels in responses to the get commands. Only the parameter value is output when verbose mode is disabled.	enabled	set verbose [enabled   disabled] get verbose
XCDevices	Allows the user to obtain information about the devices used in a particular Extended Copy command. The Extended Copy command to query is specified by the CmdNumber for the command as presented in the SCStatus CLI command. The 'DeviceType' field displays the SCSI device type for each device. The 'VendorId', 'ProductId', and 'Serial Number' fields display the SCSI Inquiry data identifying the device. Note that the SerialNumber field displays up to 16 of the least significant digits of the device serial number. the 'DataDirection' field specifies whether a device is a data source, a data destination, or both as specified in the segment descriptors of an Extended Copy command; the field can take on the values [Source   Destination   Both].		get XCDevices [CmdNumber]

Command	Description	Default	Syntax
XCError	Retrieves any SCSI sense data returned by an Extended Copy command as the result of an error. The Extended Copy command to query is specified by the CmdNumber for the command as presented in the XCStatus CLI command. The 'SCSIStatus', 'SenseKey', 'ASC', and 'ASCQ' fields display the sense data returned by the Extended Copy command. If a device involved in the command's data transfer also returned sense data, that device's serial number is displayed in the 'DeviceId' field and that device's sense data is displayed in the 'DStat', 'DSK', 'DASC', and 'DASCQ' fields. Any field that does not contain valid data is filled in with 00.		get SCError [CmdNumber]
XCStatus	Allows the user to poll for the status of Extended Copy commands issued to the FC. The 'CmdNumber' field presents a unique identifier for a particular Extended Copy command. The 'ListId' field displays the List ID specified in the CDB of the Extended Copy command. The 'HostId' field displays the 8-byte Node Name of the Fibre Channel host that issued the Extended Copy command. The 'Status' field displays the current state of the Extended Copy command, which can be [Initializing   Active   Done   Error]. The 'Transferred' field displays the amount of data transferred by the Extended Copy command in MB.		get XCStatus
Zmodem (Immediate)	Transfer a firmware image or NVRAM parameter file to or from the router using ZMODEM file transfer protocol.		zmodem [send [filename]   receive]