

Quantum Scalar 50 TC2201 iSCSI Bridge Upgrade Instructions

Introduction	3
TC2201 Bridge Operation	3
Preparing for the TC2201 Installation	3
Required Upgrade Kits	3
Required Tools	4
TC2201 Upgrade Procedure	4
Preparing the Quantum Scalar 50 Library	4
Removing Tape Drive SCSI Cables	5
Installing the TC2201 Bridge	6
Installing the Ethernet Cables	8
Installing SCSI Cables	8
Configuring the TC2201 Bridge Software	11

Made in the USA.

Quantum Corporation provides this publication “as is” without warranty of any kind, either express or implied, including but not limited to the implied warranties of merchantability or fitness for a particular purpose. Quantum Corporation may revise this publication from time to time without notice.

COPYRIGHT STATEMENT

© Copyright 2007 by Quantum Corporation. All rights reserved.

Your right to copy this document is limited by copyright law. Making copies or adaptations without prior written authorization of Quantum Corporation is prohibited by law and constitutes a punishable violation of the law.

TRADEMARK STATEMENT

Capacity on Demand (CoD), Crosslink Mechanism, DLT, DLTsage, DLTtape, Super DLTtape, Performance on Demand, (PoD), PRISM, PRISM Storage Architecture logo, SiteCare, StackLink, StorageCare, SuperLoader, and ValueLoader are all trademarks of Quantum Corporation. Quantum, the Quantum logo, and the DLTtape logo are all registered trademarks of Quantum Corporation.

Other trademarks may be mentioned herein which belong to other companies.

Introduction

The Quantum Scalar 50 automated tape libraries are controlled by a host computer via a SCSI LVD bus using the SCSI-3 medium changer command set.

The Quantum Scalar 50 allows for easy conversion from the SCSI host interface to an iSCSI host interface. This document describes upgrading a standard Scalar 50 library equipped with a SCSI host interface to an iSCSI host interface using a TC2201 Upgrade kit.

TC2201 Bridge Operation

Once a TC2201 bridge option is installed and tested, the library operates exactly as a Scalar 50 with a SCSI host interface. Operation of the library via the operator control panel (OCP) is unchanged.

Preparing for the TC2201 Installation

Before beginning the installation procedure, make sure that you have the required upgrade kit and tools.

Required Upgrade Kits

The TC2201 installation requires the following upgrade kit for every two tape drives in a Scalar 50 library (see [table 1](#)):

Note: All part numbers are subject to change without notice.

Table 1 TC2201 Upgrade Kit PN PR-UU9WG-YF

Qty	Description
1	TC2201 PWA
2	SCSI Cables
1	Ethernet cross-over cable
1	Terminator
1	Quantum Scalar 50 TC2201 Upgrade Instructions

Required Tools

The following tools are required to install the TC2201 bridge upgrade:

- #2 PHILLIPS® screwdriver

TC2201 Upgrade Procedure

The upgrade procedure is identical regardless of the number of TC2201s installed except where noted. The upgrade procedure consists of the following major steps:

- [Preparing the Quantum Scalar 50 Library](#)
- [Removing Tape Drive SCSI Cables](#)
- [Installing the TC2201 Bridge](#)
- [Installing the Ethernet Cables](#)
- [Installing SCSI Cables](#)
- [Configuring the TC2201 Bridge Software](#)

Preparing the Quantum Scalar 50 Library

To prepare the Scalar 50 library:

Caution: Use appropriate ESD procedures when assembling and installing the TC2201 option.

- 1 With the library turned on, press the **Ops** button on the OCP to access the **Operations** screen (see [figure 1](#)).

Figure 1 Operations Screen

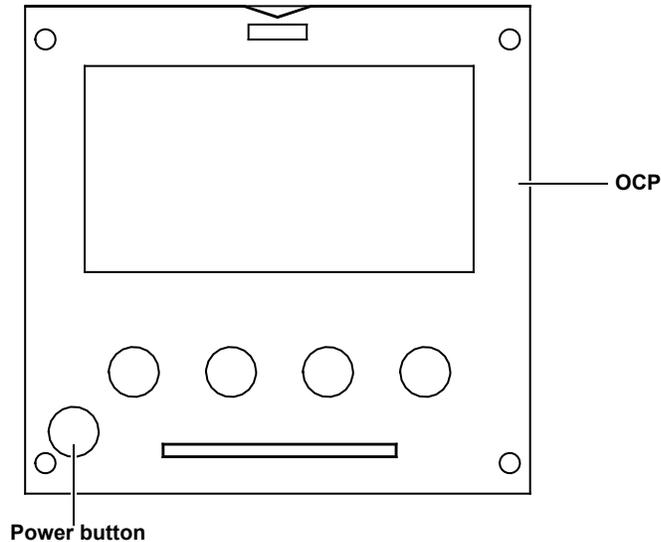


Enter

- 2 Select **Library operations** and press **Enter**.
- 3 From the library operations menu, select **Library on/offline** and press **Enter** to turn the library offline.
- 4 Verify that the OCP display indicates "Offline" from the **OCP** screen.

- 5 Turn off the power by pressing the power button located on the front of the library (see [figure 2](#)).

Figure 2 Turning Off the Library



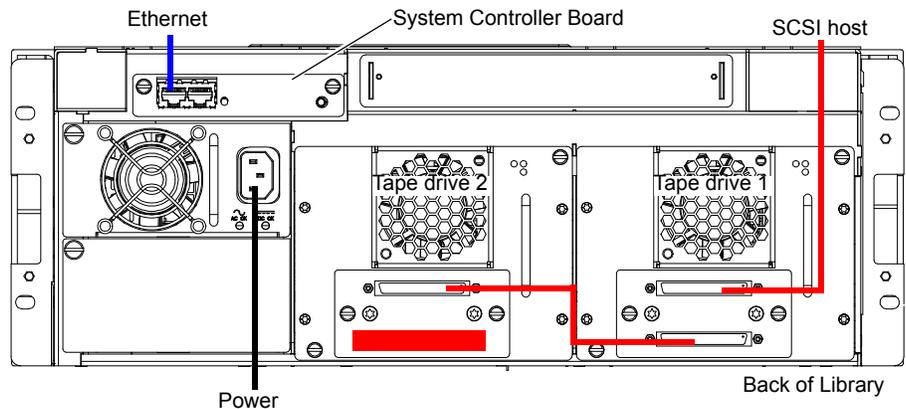
Removing Tape Drive SCSI Cables

Each pair of tape drives within the library are connected via a SCSI cable. These cables must be removed prior to cabling the TC2201.

- 1 Locate the SCSI cables connecting each pair of tape drives in the library and the host systems (see [figure 3](#)). Tape drive 1 is in the upper right-hand drive bay, tape drive 2 is in the upper left-hand drive bay, and so forth.

Note: Save the SCSI cables connected to the SCB for later use.

Figure 3 Scalar 50 Cabling Configuration



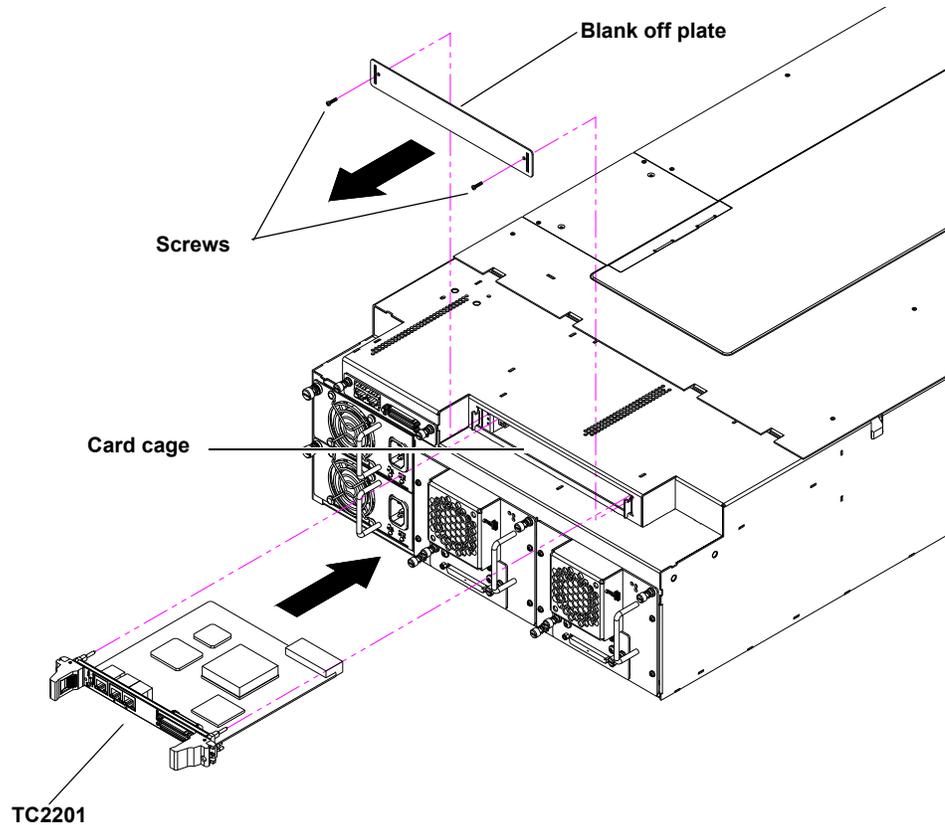
- 2 Remove all SCSI cables connecting each tape drive and also all terminators.

Installing the TC2201 Bridge

To install the TC2201 bridge:

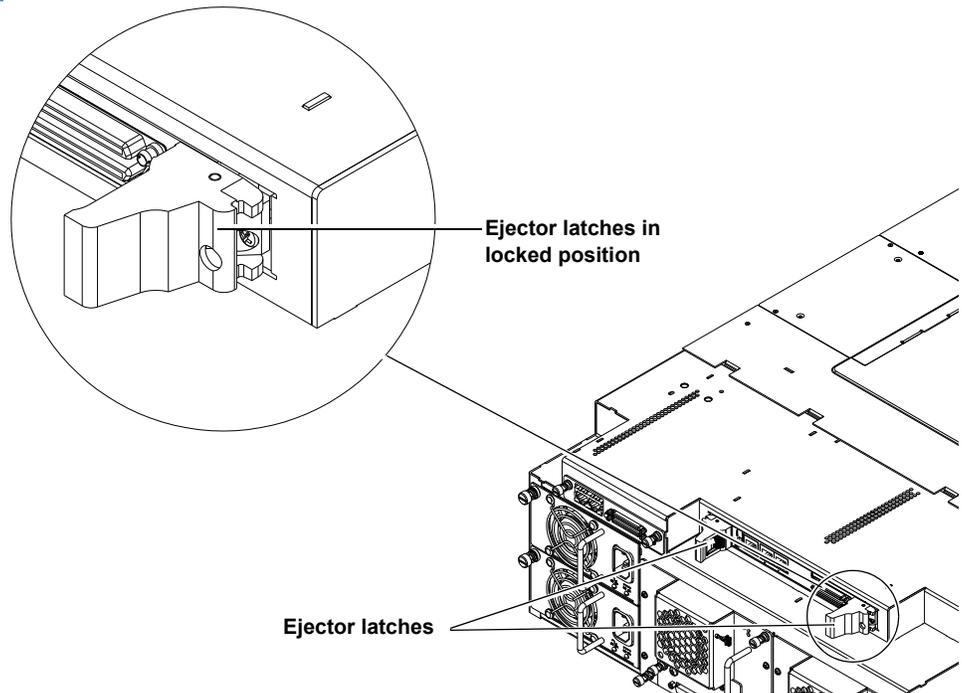
- 1 Loosen the two PHILLIPS screws securing the blank off plate to the CPCI card cage and expose the slot needed for the TC2201 installation.
- 2 With the SCSI ports located to your right as you face the back of the library, slide the first TC2201 into the slot of the card cage (see [figure 4](#)).

Figure 4 Installing a TC2201 Bridge



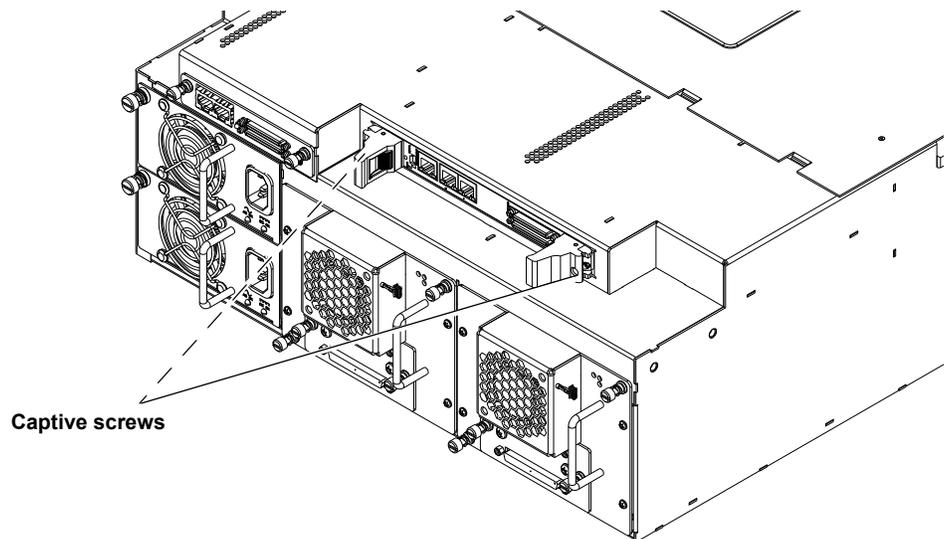
- 3 Gently press down on the TC2201 until the board is seated in the card cage and the ejector latches lock in place (see [figure 5](#)).

Figure 5 Seating the
TC2201 Bridge



- 4 Secure each bridge to the CPCI card cage by tightening the captive screws located in the ejector latches with a PHILLIPS screw driver (see [figure 6](#)).

Figure 6 Securing the
TC2201 Bridge



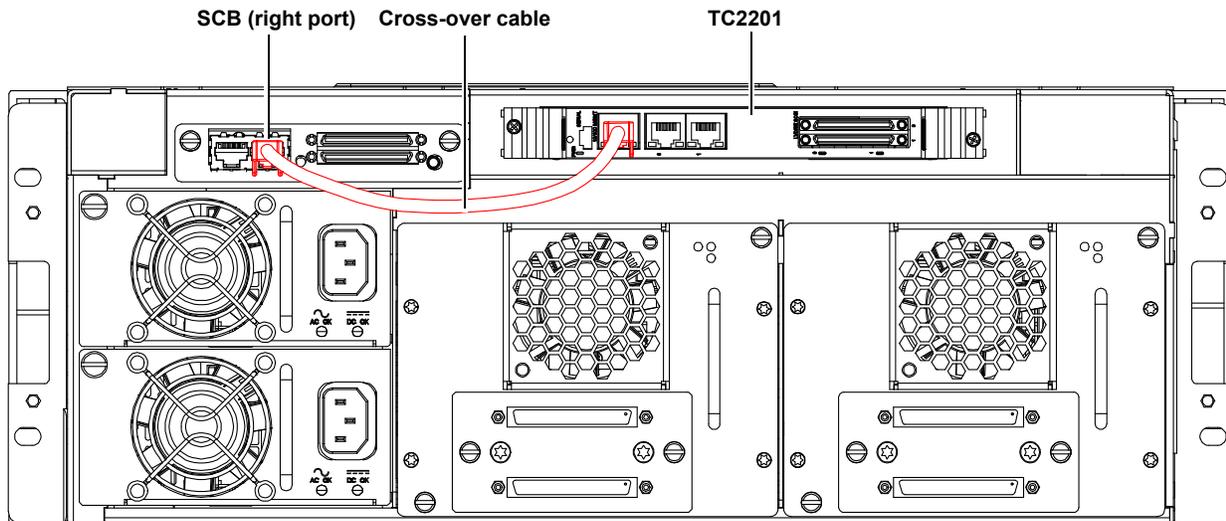
- 5 Repeat [step 2](#) through [step 4](#) for additional TC2201 bridges if necessary, using the next available card cage slot.

Installing the Ethernet Cables

Scalar 50 libraries with an installed TC2201 iSCSI bridge must have the following Ethernet connection:

- 1 Connect a cross-over cable between the right port of the library system controller board (SCB) and the TC2201 (see [figure 7](#)).

Figure 7 Scalar Ethernet Connection



Installing SCSI Cables

The SCSI cable installation procedure differs depending on the type of tape drive installed. Refer to the following sections for installing the SCSI cables:

- [Installing SCSI Cables with Full Height Tape Drives](#)
- [Installing SCSI Cables with Half-Height Tape Drives](#)

Installing SCSI Cables with Full Height Tape Drives

Use the following procedure to connect the SCSI cables and terminators to the tape drives and TC2201.

- SCSI connectors 0 through 1 on the TC2201 are used to connect to the system controller board and tape drives 1 through 2.

To cable a TC2201 bridge to the tape drive(s):

- 1 To connect the SCSI cables from the TC2201 to the tape drives (see [figure 10](#) and [figure 9](#)):
 - a Connect a SCSI cable (VHDC 68-pin to HD 68-pin) from the top port of the system controller board to Port 0 on the TC2201.
 - b Connect a SCSI cable (VHDC 68-pin to HD 68-pin) from the bottom port of the system controller board to the upper port of tape drive 1.
 - c Install a terminator on the bottom port of tape drive 1.

- d** Connect a SCSI cable (VHDC 68-pin to HD 68-pin) from the top port of tape drive 2 to Port 1 on the TC2201.
- e** Install a terminator on the bottom port of tape drive 2.

Figure 8 Cabling a TC2201 Bridge to the Tape Drives

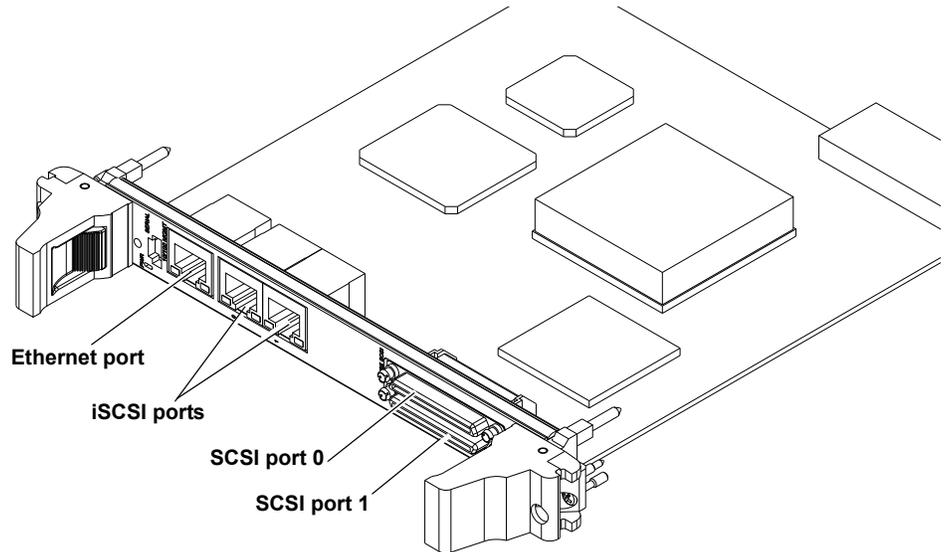
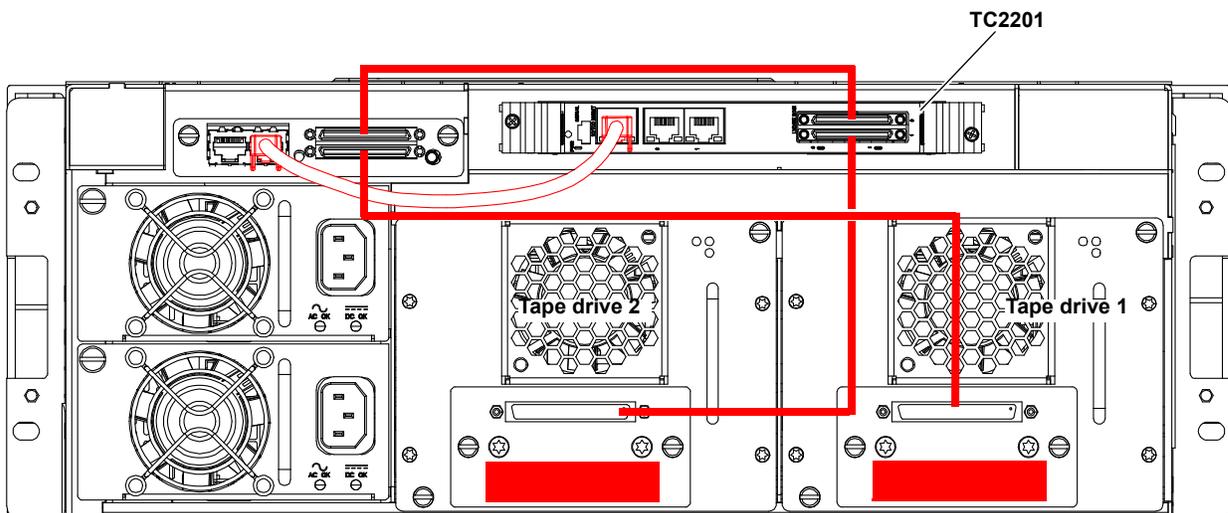


Figure 9 Scalar SCSI Connections (Full Height Drives)



Installing SCSI Cables with Half-Height Tape Drives

Use the following procedure to connect the SCSI cables and terminators to the tape drives and TC2201.

- SCSI connectors 0 through 1 on the TC2201 are used to connect to the system controller board and tape drives 1 through 4.

To cable a TC2201 bridge to the tape drive(s):

- 1 To connect the SCSI cables from the TC2201 to the tape drives (see [figure 10](#) and [figure 9](#)):
 - a Connect a SCSI cable (VHDC 68-pin to HD 68-pin) from the top port of the system controller board to Port 0 on the TC2201.
 - b Connect a SCSI cable (VHDC 68-pin to HD 68-pin) from the bottom port of the system controller board to the upper port of tape drive 1.
 - c Connect a SCSI cable (HD 68-pin to HD 68-pin) from the bottom port of tape drive 1 to the top port of tape drive 2.
 - d Install a terminator on the bottom port of tape drive 2.
 - e Connect a SCSI cable (VHDC 68-pin to HD 68-pin) from the top port of tape drive 3 to Port 1 on the TC2201.
 - f Connect a SCSI cable (HD 68-pin to HD 68-pin) from the bottom port of tape drive 3 to the top port of tape drive 4.
 - g Install a terminator on the bottom port of tape drive 4.

Figure 10 Cabling a
TC2201 Bridge to the Tape
Drives

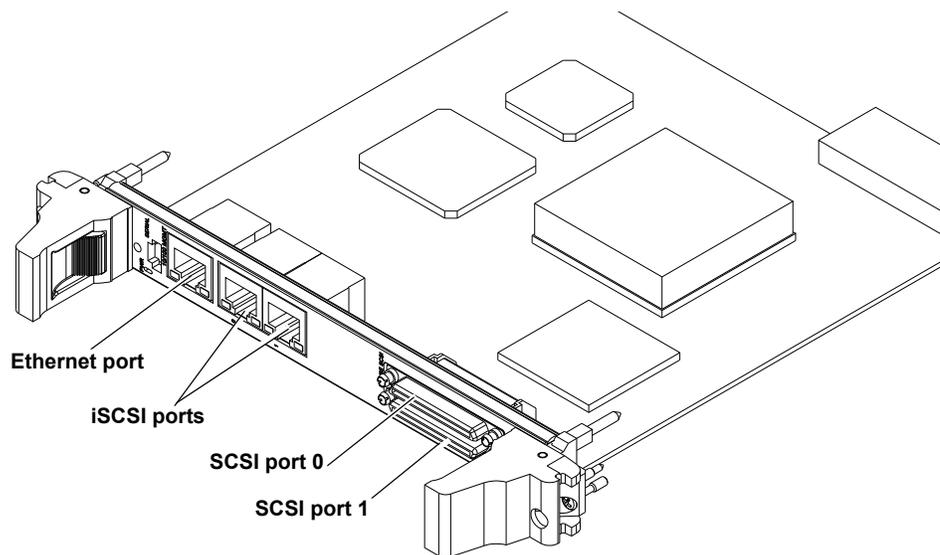
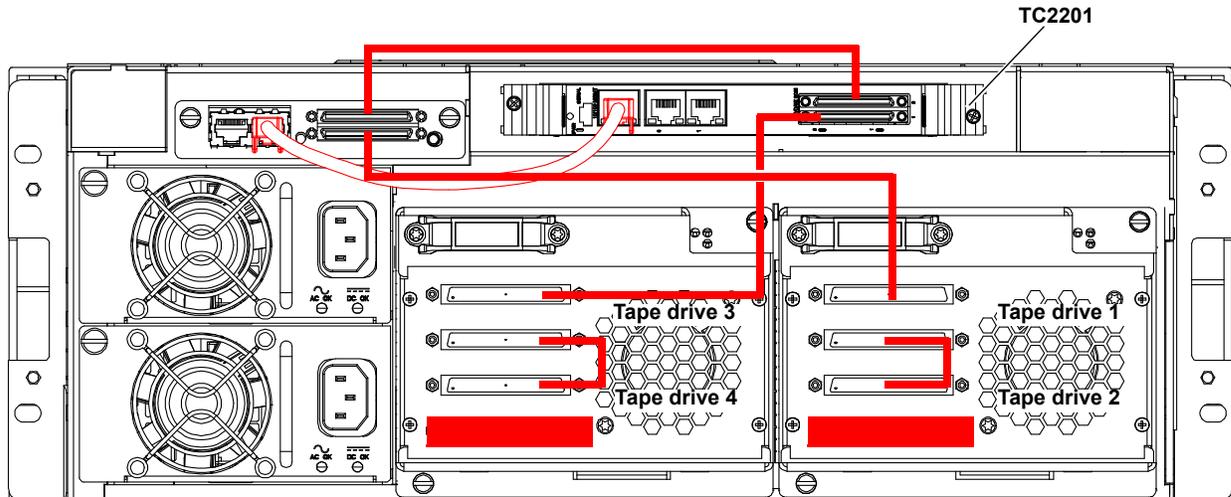


Figure 11 Scalar SCSI
Connections (Half-Height
Drives)



Configuring the TC2201 Bridge Software

After the TC2201 is installed, you must configure the bridge and map the tape drives and library robotics controller to the iSCSI port. Configuring the TC2201 consists of the following steps:

- [Accessing the TC2201 Bridge](#)
- [Discovering Attached Devices](#)
- [Configuring the iSCSI Ports](#)

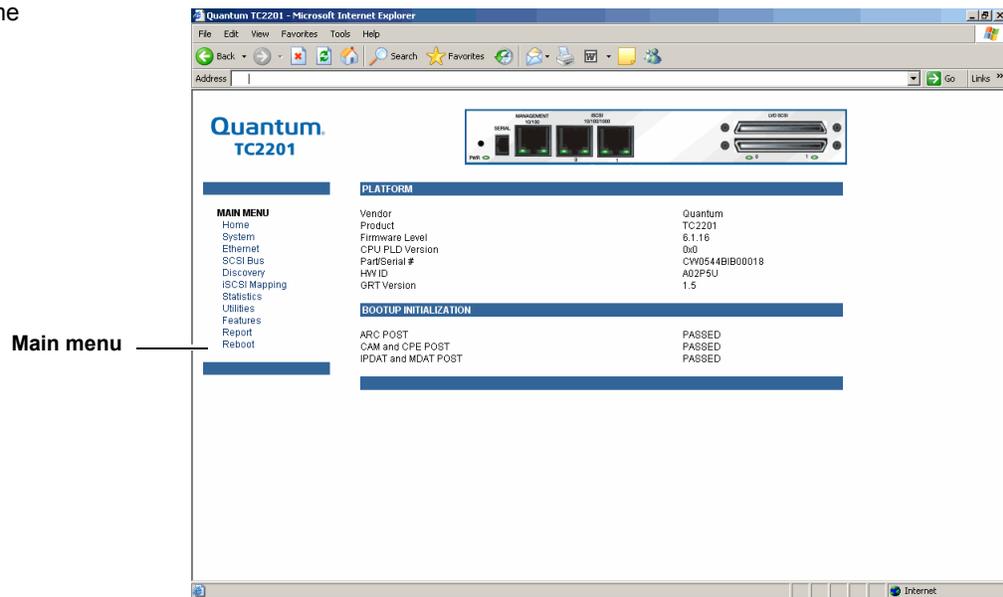
Accessing the TC2201 Bridge

To access the TC2201 bridge:

- 1 Turn on the library power by pressing the power button located on the front of the library (see [figure 2](#)).
- 2 Open a web browser on a PC located on the same subnet as the library.
- 3 In the **Address** field, type `http://IPaddress/` where IP address is the IP address for the Scalar 50 library (refer to the *Quantum Scalar 50 User's Guide* PN 81-81768 for information on the Scalar 50 remote management web pages).
- 4 Select the **iSCSI Bridge** tab from the **Setup** page on the Scalar 50 remote management web pages.
- 5 Select the TC2201 bridge you want to configure.

The **TC2201 Home Page** screen displays (see [figure 12](#)).

Figure 12 TC2201 Home
Screen

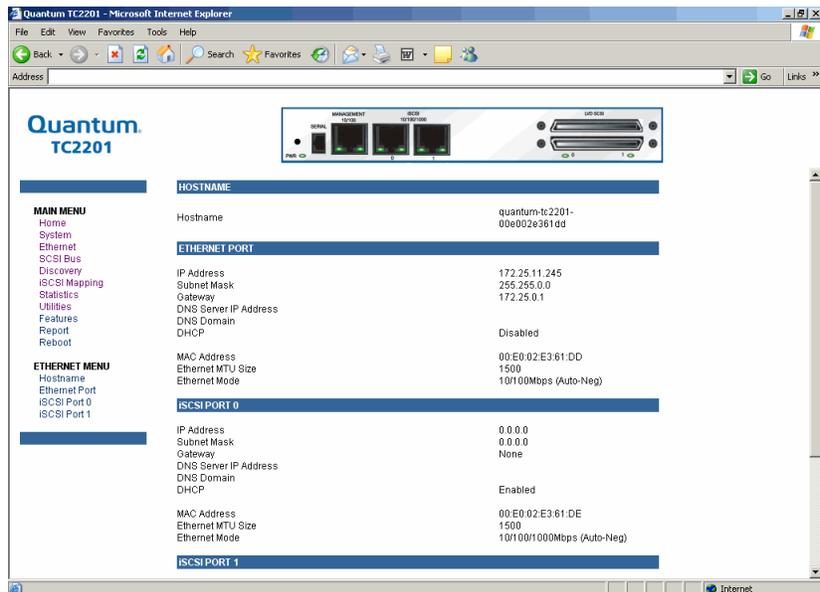


Discovering Attached Devices

To configure the TC2201 bridge and map the tape drives to the iSCSI ports:

- 1 From the **Home** screen, click **Ethernet** from the main menu.
The bridge prompts you for a username and password.
- 2 Enter **root** for the username and **password** for the password.
The **Ethernet** screen displays (see [figure 13](#)).

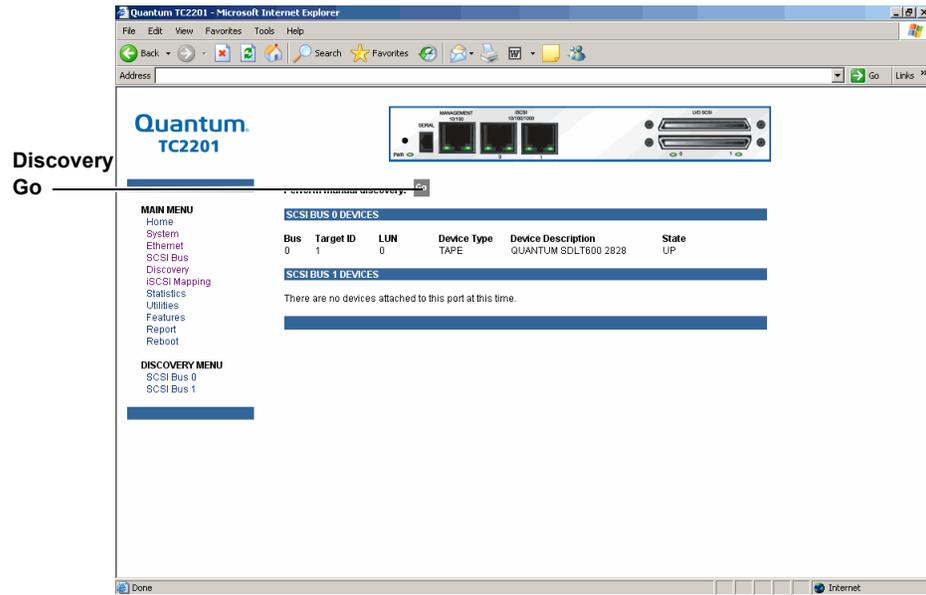
Figure 13 TC2201
Ethernet Screen



Verify that all the network ports are configured correctly for the network environment.

- 3 Click **Discovery** from the **Main** menu.
The **Discovery** screen displays (see [figure 14](#)).

Figure 14 Discovery Screen

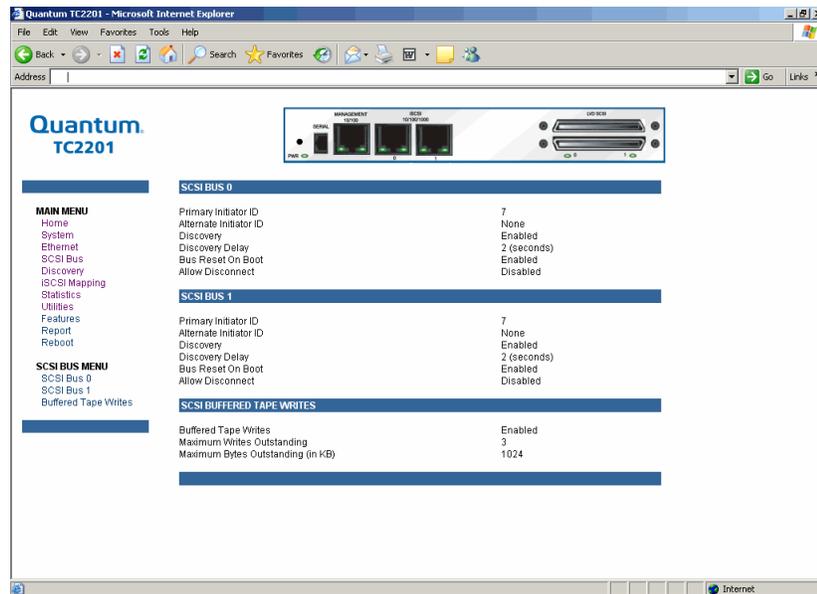


4 Click **Go** to discover all attached devices.

5 Click **SCSI Bus** from the **Main** menu.

The **SCSI Bus** screen displays (see [figure 15](#)).

Figure 15 SCSI Bus Screen



SCSI ID 7 is the default SCSI Initiator ID for each of the TC2201's SCSI buses. If any devices attached to a TC2201 bus are using SCSI ID 7, then that bus's Initiator ID must be changed. To change a bus's Initiator ID: Select the desired bus from the TC2201 GUI or the SCSI Bus submenu. Then use the Initiator ID field drop-down list to select an unused ID number. Click the **Submit** button to record the change.

If the TC2201 does not see all of the devices expected, check that the initiator ID(s) are set to a unique value for each bus attached to devices. For any changes, submit those changes and reboot the TC2201.

Configuring the iSCSI Ports

After you have discovered the attached devices, you must:

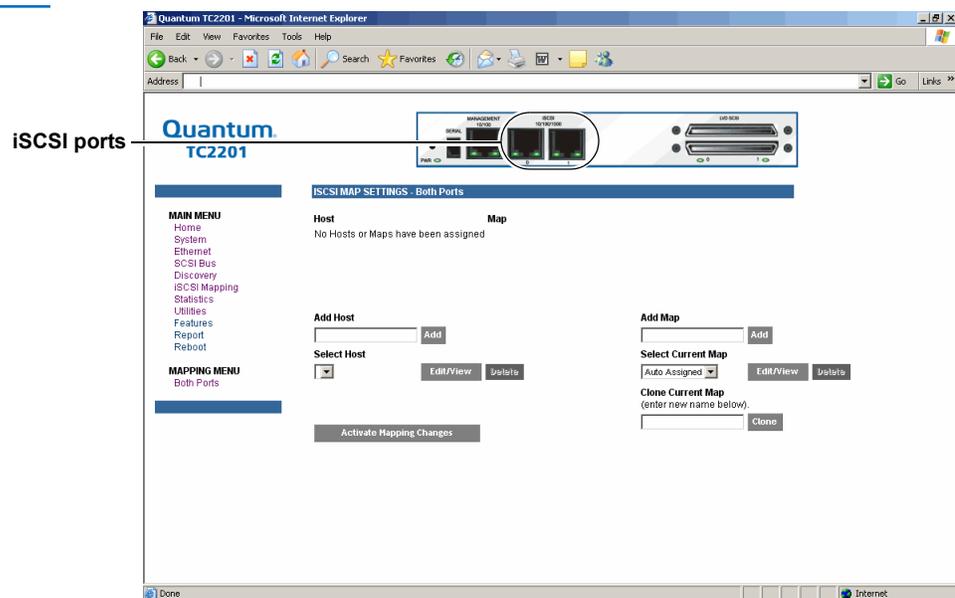
- Configure the iSCSI ports with an iSCSI host
- and
- Map the tape drive and media changer to the iSCSI ports.

To configure the iSCSI ports:

- 1 Click **iSCSI Mapping** from the **Main** menu.

The **iSCSI Mapping** screen displays (see [figure 16](#)).

Figure 16 iSCSI Mapping Screen



- 2 Select the iSCSI port to configure.

The current mapping information for that port is displayed including the name of the port, the currently selected host and map.

- 3 There are two ways to configure the iSCSI host:
 - a Add a new host or map by clicking **Add**.
 - b Select an existing host or map from the pull-down lists for **Select Host** and **Select Map**.

If you are adding a new host or map and click **Add**, the **iSCSI Host Add** screen displays (see [figure 17](#)).

Figure 17 Add Host
Screen

iSCSI PORTAL GROUP - Both Ports Current Host Information for Host01	
Host Name	Host01
iSCSI Name	Host01
Map Name	Auto Assigned

Host Name	<input type="text" value="Host01"/>
iSCSI Name	<input type="text" value="Host01"/>
Map Name	<input type="text" value="Auto Assigned"/>

To save changes, click the Submit button.

*To enable changes, exit this screen and select **Activate Mapping Changes***

- 4 New or updated information can be typed into the field boxes for **Host Name**, **iSCSI Name**, and **Map Name**.
- 5 The **Map Name** can be selected from the drop-down list.
- 6 To make the changes permanent, select the **Submit** button.

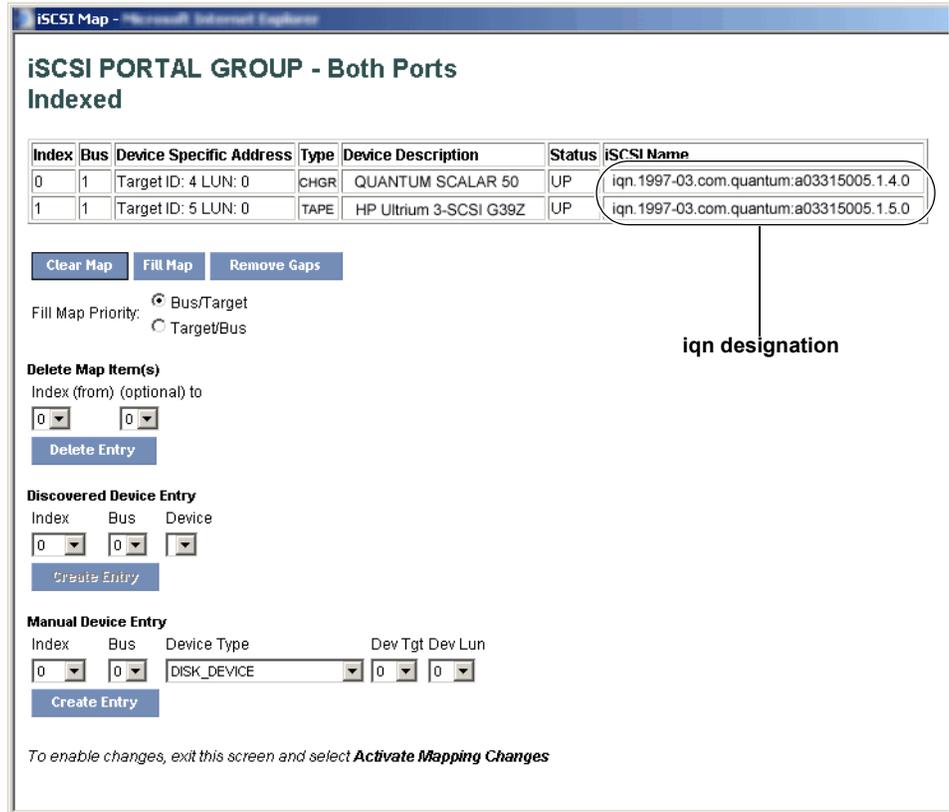
Note: Host settings are saved to memory when the **Submit** button is selected but are not activated until either the **Activate Mapping Changes** button is selected or the TC2201 is rebooted.

After the iSCSI host information is configured, you must map the attached devices to the appropriate iSCSI port.

- 7 From the **iSCSI Mapping** screen, click **Select Current Map Edit/View**.

The **Select Current Map Edit/View** screen displays (see [figure 18](#)).

Figure 18 Select Current Map Edit/View Screen



Note: The **iqn** name may be necessary for some customer iSCSI host configurations.

8 To map the iSCSI ports:

- a** To completely clear the current map of all entries, select the **Clear Map** button.
- b** To fill the map, select the fill option from the pull-down list and then select the **Fill Map** button. When the map is filled, the menu shows the current mappings.
- c** To remove all gaps, or unfilled entries, from this map, select the **Remove Gaps** button. When removing gaps from the table, this option also renumbers all Indexes in sequential order starting with Index 0.

Note: Some operating systems require gaps be removed in the mapping table in order to detect all devices.

- d** To delete a specific map entry, select an Index from the pull-down list under **Delete Map Item**. To delete multiple Indexes, also select the end of the range from the optional pull-down list. Either way, select the **Delete Entry** button to remove the item(s) from the map.

- e To create a specific map item, the Index, Bus, and Device can be selected from the pull-down lists for either **Discovered Device Entry** or **Manual Device Entry**. **Discovered Device Entry** is limited to devices already discovered. **Manual Device Entry** allows you to manually set up a device type at a specific **Device Target** and **Device LUN**. To make the changes permanent, select the **Create Entry** button.

Note: Maps named **Auto Assigned** may not be modified, cleared, filled, or have entries removed.

Note: Map settings are saved to memory when any of the buttons within the page are selected but are not activated until either the **Activate Mapping Changes** button is selected or the TC2201 is rebooted.

- 9 After the iSCSI ports are mapped, select the **Activate Mapping Changes** button to dynamically update the current map without rebooting the TC2201. These changes are made effective immediately after being submitted.

Caution: Before activating any port mapping changes, it is strongly recommended that the user verify there are not any command or data operations occurring in conjunction with devices affected by the mapping changes. For example, deleting a LUN or device from a map may disrupt I/O transfers with that device. It is the user's responsibility to ensure that no operations will be negatively impacted due to the activation of mapping changes.

Note: All current Mapping Settings will take effect immediately! If another management interface has made unsaved mapping changes, those changes will be lost.

Note: If the **Activate Mapping Changes** button is not selected, the mapping changes will not take effect unless the TC2201 is rebooted.

- 10 After activating the mapping options for the Ethernet ports, click **Reboot** from the **Main** menu.

The **System Reboot** screen displays (see [figure 19](#)).

