COMPAQ

Tape Storage Management Console
Version 2.0
User Guide

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About This Guide

Purpose and Scope

This guide is designed to be used as step-by-step instructions for installation and as a reference for operation, troubleshooting, and future upgrades for the Compaq Tape Storage Managament Console program.

Intended Audience

This document is written for Compaq customers and trained service personnel.

⚠ Important Safety Information

Before installing this product, read the *Important Safety Information* document provided.

Text Conventions

This document uses the following conventions to distinguish elements of text:

Keys	Keys appear in boldface. A plus sign (+) between two keys indicates that they should be pressed simultaneously.
USER INPUT	User input appears in a different typeface and in uppercase.
FILENAMES	File names appear in uppercase italics.
Menu Options, Command Names, Dialog Box Names	These elements appear in initial capital letters.
COMMANDS, DIRECTORY NAMES, and DRIVE NAMES	These elements appear in uppercase.
Type	When you are instructed to *type* information, type the information **without** pressing the **Enter** key.
Enter	When you are instructed to *enter* information, type the information and then press the **Enter** key.

Symbols in Text

The following symbols are found in the text of this guide to indicate different types of information.

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

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

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

Getting Help

If you have a problem and have exhausted the information in this guide, you can get further information and other help in the following locations.

Compaq Technical Support

In North America, call the Compaq Technical Phone Support Center at 1-800-OK-COMPAQ. This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored.

Outside North America, call the nearest Compaq Technical Support Phone Center. Telephone numbers for worldwide Technical Support Centers are listed on the Compaq website. Access the Compaq website:

www.compaq.com

Be sure to have the following information available before you call Compaq:

■ Technical support registration number (if applicable)

■ Product serial number

■ Product model name and number

■ Applicable error messages

■ Add-on boards or hardware

■ Third-party hardware or software

■ Operating system type and revision level

Compaq Website

The Compaq website has information on this product as well as the latest drivers and Flash ROM images. Access the Compaq website:

www.compaq.com

Compaq Authorized Reseller

For the name of your nearest Compaq authorized reseller:

- In the United States, call 1-800-345-1518.

- In Canada, call 1-800-263-5868.

- Elsewhere, see the Compaq website for locations and telephone numbers.

Chapter **1**

Introduction

Welcome to the Tape Storage Management Console (TSMC).

TSMC is a software-based management tool that is designed to aid in the installation and maintenance of Compaq tape drives, tape arrays, and tape automation products. TSMC version 2.0 is the latest version of this management tool, which incorporates a browser-based screen for the graphical user interface. TSMC includes multiple diagnostics, advanced tests, and system management functions designed to be used by both Compaq storage customers and trained service personnel.

The TSMC diagnostic tools can search for and report problems and failures with all Compaq tape products connected via Fibre Channel, SCSI, or Serial interfaces. This is primarily accomplished through the use of Standard and Custom Tests that are built into TSMC. These tests emulate No Trouble Found (NTF) tests developed by Compaq. The advanced tests allow the user to test specific areas of functionality. For instance, if you are installing a device for the first time, you can run TSMC to verify that the tape device is properly installed and is available to your system before you attempt to load any other application software. The system management functions within TSMC provide users with the ability view information regarding their tape device, change the system's settings, as well as upload firmware revisions for your tape device. If you are connected to the World Wide Web, TSMC will search the appropriate Compaq website for the latest available firmware needed by your tape device. The newest versions of TSMC can also be delivered to you over the web.

IMPORTANT: When using TSMC, be sure that you are in offline mode and that no other applications are issuing tape commands to your devices.

Assumptions about the Reader

This manual assumes that you have a working knowledge of Microsoft Windows NT 4.0 and/or Microsoft Windows 2000 along with an Internet Browser. You should also have a basic knowledge of the terms employed in describing and using the SCSI interface and the application of SCSI devices. These are suggested levels and not absolute requirements. TSMC is a flexible tool and can be used equally well by both the novice and the expert.

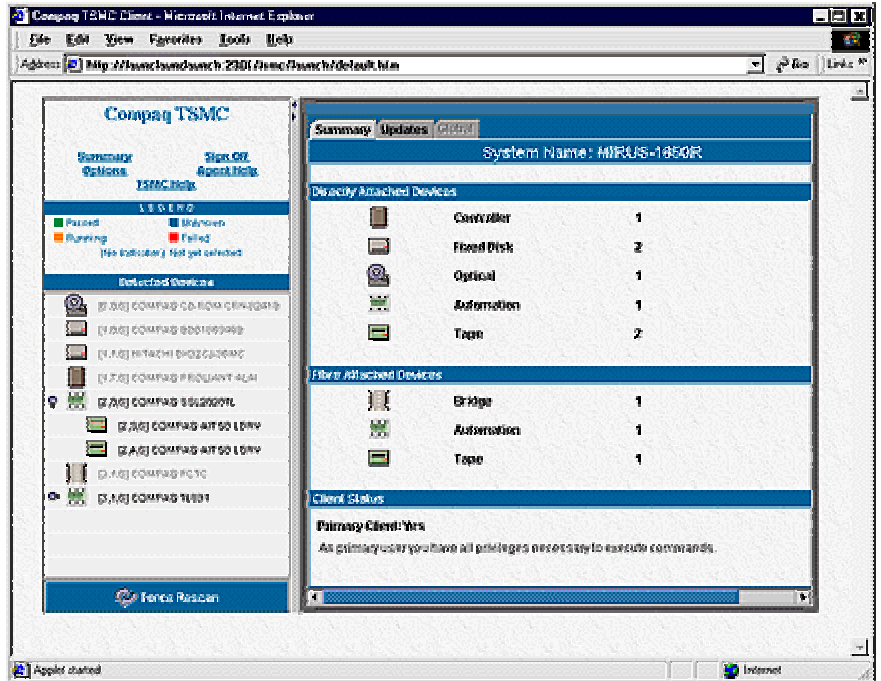Figure 1-1. TSMC window after launch

SCSI Requirements

This section discusses SCSI concepts you need to understand for a successful installation of TSMC.

Every SCSI system bus requires that you:

1. Have a host bus adapter (HBA) or initiator and target device.

2. Connect the HBA or initiator and target device with cabling, or daisy chain a string of target devices together to the initiator.

3. Terminate devices at both ends, either at the device/adapter or by adding an inline/external terminator.

SCSI ID

Your devices are displayed by TSMC in the Device Tree window, as shown in Figure 1-2.

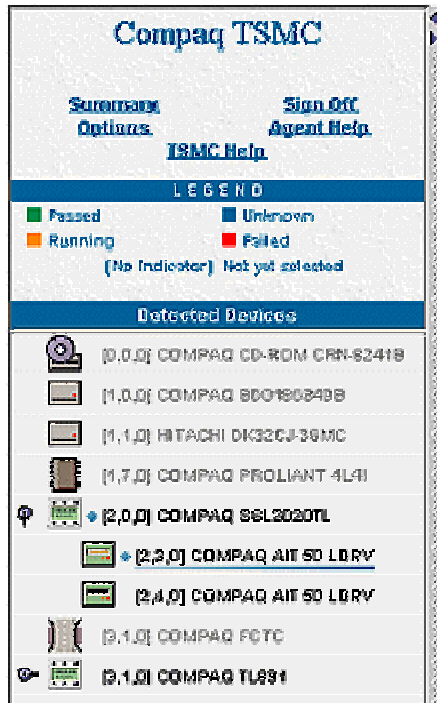Figure 1-2. SCSI information displayed in Device Listing

Icons indicate if the device is a tape drive, tape library, or fibre device. Next to each icon, TSMC displays the corresponding SCSI Bus, ID, and LUN, respectively, in the brackets before each device name.

Device Listing Icons

Table 1-1
Device Listing Icons

Icon	Description
	Hard Disk NOTE: This icon is not active in TSMC
	Fibre Bridge
	Tape Device with tape inserted
	Controller NOTE: This icon is not active in TSMC
	Tape Automation or Library

Fibre Products

The following devices are supported in the Compaq Storage Area Network (SAN).

■ 8 and 12 port hub

■ Fibre switches

■ Fibre to SCSI Bridge (for attaching fibre to SCSI tape libraries)

 NOTE: Fibre Hubs are not identified on the Bus.

Fibre Bridge

With a Fibre Bridge, a SCSI device is attached to the SCSI connections on the bridge. The Bridge appears as one device, regardless of the number of SCSI buses internal to it.

Chapter 2

Installation

System Requirements

The following are the system requirements for TSMC:

- Any Intel-based Compaq server that supports:

  - ❑ Microsoft Windows NT 4.0 with Service Pack 4 or greater

  - ❑ Microsoft Windows 2000 Professional, Server, and Advanced Server with Service Pack 1 or greater

- Any Compaq fast-wide SCSI 2 host adapter or Low Voltage Differential (LVD) with the driver *CPQ32FS2.SYS* (available on the Compaq SmartStart CD-ROM) installed

- Any Compaq 64-Bit/66-Mhz Wide Ultra 3 host adapter with the driver Adpu160m.sys (available on the Compaq Smart Start CD-ROM) installed

  NOTE: Support is constantly being updated. Check the Compaq website for the latest information on supported adapters.

- Compaq Fibre Channel Host Bus Adapter with the driver *CPQFCALM.SYS* (available on the Compaq SmartStart CD-ROM) installed

- A Web browser to view HTML Help files and view the client, such as Microsoft Internet Explorer 5.0 with Java Support.

■ TSMC assumes you are only using Compaq tape drive or tape automation products.

⚠ **CAUTION:** Using unqualified 3rd party host adapters that are not certified may cause problems with firmware downloads.

Internet Access

Internet access allows for program updates and access to firmware files. Without Internet access you will need to copy files from a network server or media.

Installing TSMC

The following sequence should be performed when installing your TSMC software for the first time.

IMPORTANT: Before continuing, exit any Windows programs.

1. If installing from a CD, insert your TSMC CD into the CD-ROM drive. If the installation does not start automatically, locate the file Setup.exe on your CD, then-double click on it to start your installation. If you downloaded the TSMC Setup.exe file from the internet, locate the file and double-click on it to start the installation of TSMC.

2. You should see a series of files being unpacked in preparation for installation. When that is complete, the InstallShield Wizard should appear. Click Next to continue with the installation. Please note that you can choose Cancel in any of the Setup screens to abort the installation.

3. The License Agreement screen appears. Please read the agreement and choose Yes if you agree to the terms or No if you would like to abort the installation.

4. An Information screen appears if you chose Yes in Step 3. This screen contains valuable instructions on how to access TSMC Server from your browser. Choose Next when you are ready to continue.

5. The Choose Destination Location screen appears. This specifies the folder where TSMC files will be installed. You may accept the default destination folder or click on Browse to specify another location. Choose Next when you are ready to continue.

6. The Setup Type screen appears. This allows you to choose the type of setup you want for TSMC. Please select Typical (default selection) as the setup type unless directed otherwise by Compaq personnel. Choose Next to continue.

7. The Select Program Folder screen appears. This specifies the name of the Program folder where TSMC icons will reside. The default folder is TSMC Server. You may choose to create your own folder name or select from the list of existing folders. Choose Next when you are ready to continue.

8. The installation of files begins. When complete, the Install Shield Wizard Complete screen appears and the boxes to start TSMC Server and TSMC Client are automatically checked. Click OK to start TSMC Server and TSMC Client, this will launch your browser and display the logon screen. To start TSMC Server and TSMC Client later, uncheck the boxes and click OK. To start TSMC Server and TSMC Client, go to the Compaq TSMC Server folder in the Start Menu under Programs and select Lauch Server and Launch Client.

> ⚠ **CAUTION:** When using TSMC, be sure that you are in offline mode and that no other applications are issuing tape commands to your devices.

Starting TSMC Server

1. Once you have completed the Installation, TSMC Server and TSMC Client automatically starts up if you accepted the defaults during the installation. To start TSMC Server manually, go to the Compaq TSMC Server folder in the Start Menu under Programs and choose Launch Server.

2. A TSMC icon should appear on the taskbar. Moving the cursor over the icon shows the message TSMC server activated. If you need to deactivate TSMC server, right click on the icon and choose Deactivate TSMC Server. Depending on your system configuration, the TSMC Server launch may take up to 45 seconds or more to complete.

3. Open a browser and type in the following URL:

   http://YOURSERVER:2301

   Where YOURSERVER is the network name of the computer you are trying to access (see Figure 2-1). If your unsure of the name of the computer, you can locate the name in System Properties.(see Figure 2-2). If your computer name is longspeak, you would type the following:

   http://longspeak:2301
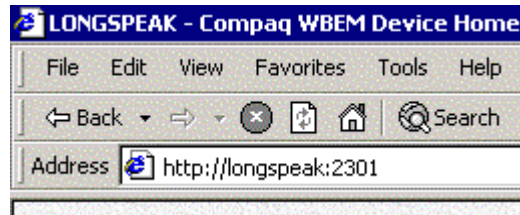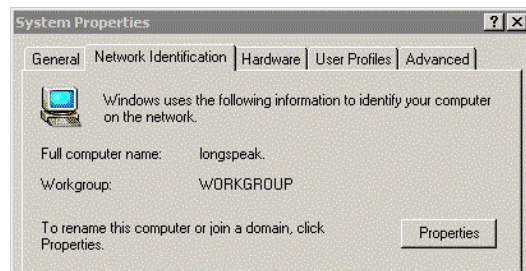
Figure 2-1. Address to launch TSMC

Figure 2-2. Locating computer name on Windows 2000

Instructions for locating computer name on Windows 2000:

   a. Right click on the My Computer icon on your desktop

   b. Select Properties

   c. Click on the Network Identification tab

   d. Your computer name is shown along with your Workgroup

Instructions for locating computer name on Windows NT

>   a. Select Control Panel
>
>   b. Select Network from Control Panel
>
>   c. Computer name is located on Identification tab

>   If your computer's IP address is 16.201.205.43, you would type the following:

>   http://16.201.205.43:2301

4. The Device Home Page screen should appear. Locate the Tape Storage Management Console icon on this screen and click on it.
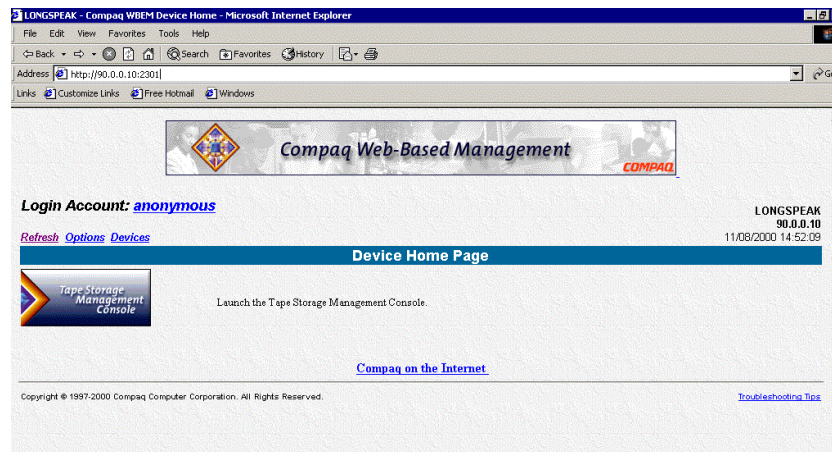
Figure 2-3. Device Home Page screen

5. The next screen that appears should be Java plug-in information screen. If you do not have Java installed, a Java certificate should appear asking you if you would like to install the Java plug-in available from Sun Microsystems. If you trust the authentication of this certificate, please choose YES and follow the instructions to install Java.

NOTE: If you do not have web access, click on the link at the bottom of the page to install the Java plug-in. Follow the instructions on the screen. You may need to reboot if you have to install the Java plug-in. When complete, click on the browsers refresh button to continue.

6. After the Java plug-in is installed (if necessary), a Login screen should appear. This is where you enter your User Name and Password to access the computer. The default User Name and Password is administrator (valid users are documented in the Server Agent help files in the TSMC application). Enter your User Name and Password and click OK to continue.

   NOTE: If you are already authenticated, the login screen will not appear.

7. You may briefly see a TSMC Client screen with a Status bar. This should disappear and the TSMC Summary screen for the computer should appear. Check the Client Status at the bottom of the screen to ensure that you are the Primary User (only Primary Users are able to issue commands to devices – Secondary Users can only view the screens). You are now ready to start using TSMC!

Chapter **3**

Screen Layout

TSMC Startup

After TSMC is started, access the TSMC client through your browser. The first screen to appear is the Summary screen, which will list all Fibre and directly attached devices, along with the client status. From the Summary screen you will be able to check the Status, and update your firmware list. The Global Tab includes some enhancements for future releases of TSMC.
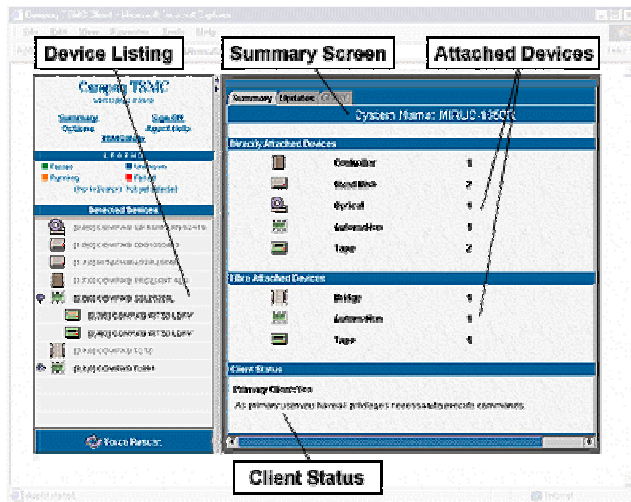

Figure 3-1. TSMC screen

NOTE: TSMC supports primary and secondary clients. A primary client has full access and control. A secondary client can only view events, not control them.

Device Listing

When scanning is complete, the Device Listing screen appears, showing each SCSI or Fibre device. The number of SCSI devices on a Bus can range from 0 to 7, or 0 to 15 with Wide SCSI. Fibre devices can be directly attached or as part of a switch network, therefore the numbers get much larger.

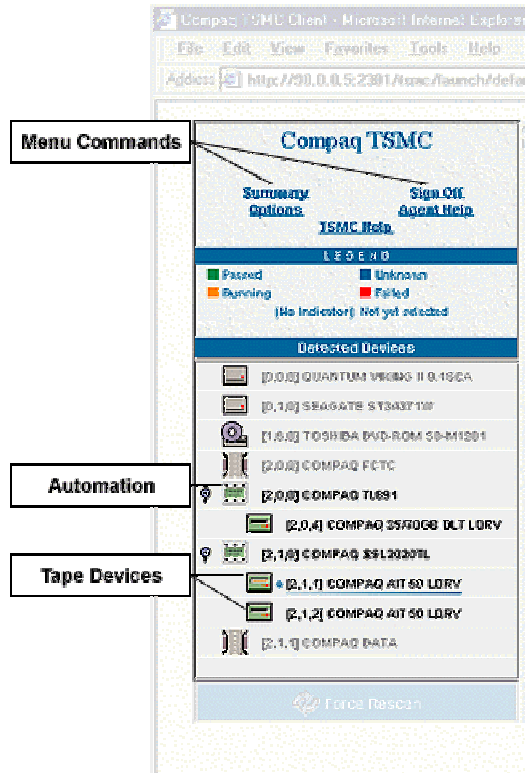**NOTE:** TSMC does support large LUN setups.

Figure 3-2. Device Listing

NOTE: Drives in libraries are displayed in association with the libraries in which they reside. Some drives may display incorrectly if the library is in standby mode or if a drive is unavailable and the user has not reconfigured the library. To ensure correct display, place the library online or reconfigure the library as needed.

Device Description

Icons indicate if the device is a tape drive, tape automation, or fibre device. Next to each icon, TSMC displays the corresponding SCSI Bus, ID, and LUN, respectively, in the brackets before each device name. A special icon will appear for tape drives loaded with media. Devices listed in the Device Listing but not supported by TSMC will be grayed out.

Selecting a Device to Work On

Use your mouse to click on a tape device in the Device Listing. This opens the device qualifier screen for the selected device.

Figure 3-3. Tape drive with media inserted

Device Screens

All SCSI diagnostic commands are executed from the Device screens. The appropriate screen is automatically selected when you click on a tape device in the Device Listing. For example, in testing DLT based libraries you would test the individual DLT drive with tape device screens or test your library with the automation screens. Open the Device screens by clicking on a device in the Device Listing screen.

Tape Device Screens

Tape device screens include:

■ Status

■ Firmware

■ Logs
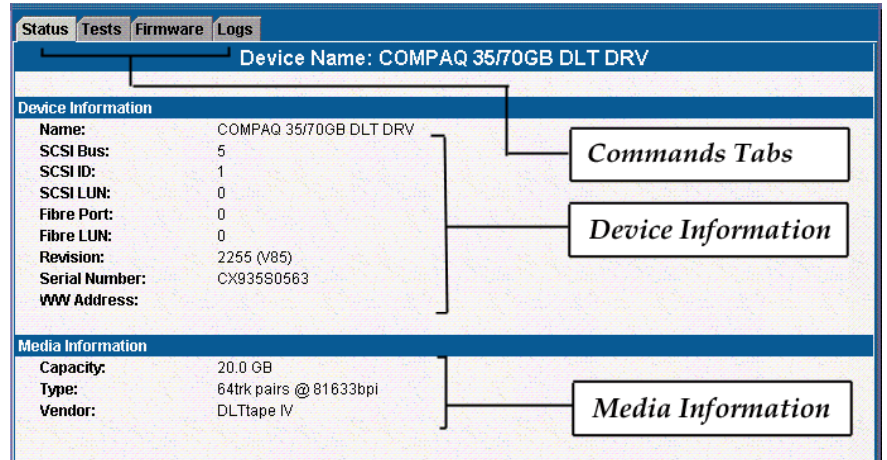
Figure 3-4. Tape Status screen

Table 3-1
Tape Device Tabs

Tab Name	Description
Status	Displays the current status of Tape or Automation device.
Tests	Tests and Commands that are available for the device.
Firmware	Download and update firmware for device.
Logs	Displays the Message, Error, and SCSI logs.

The current selected device will appear with a double line under the device name.
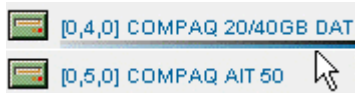
Figure 3-5. Device Listing screen with device selected

Automation Screen

This screen is associated with Libraries and Automation.
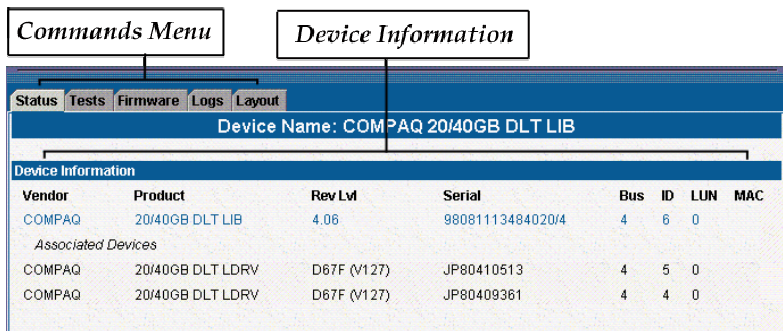
Figure 3-6. Automation Tool

The associated devices section displays only those tape drives that are members of the Automation device or library.

Table 3-2
Automation Tabs

Tab Name	Description
Status	Displays the current status of Tape or Automation device.
Tests	Tests and Commands that are available for the device.
Firmware	Download and update firmware for device.
Logs	Displays the Message, Error, and SCSI logs.
Layout	Allows you to Inventory and transport media between drives.

Chapter **4**

Menu and Toolbar Commands

Menu Options

TSMC uses menu commands, such as Summary, Sign Off, Options, Agent Help, and Force Rescan. The Menu Bar is located in the upper left hand corner of the TSMC screen, with the exception of Force Rescan, which is located at the bottom left of TSMC screen.
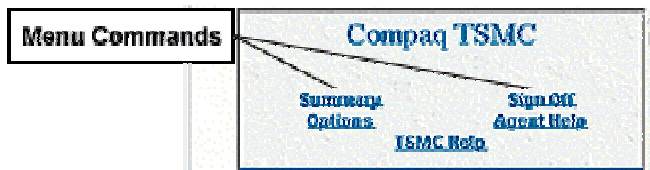

Figure 4-1. Menu Commands

Menu

The Menu commands are described in the following table.

Table 4-1
Menu Commands

Menu Item	Function
Summary	Opens the Summary screen which shows all attached devices.
Sign Off	Closes the application. You must abort or cancel all running or pending tests before closing the application window.
Options	Sets behavior and display characteristics of TSMC using the option tabs shown in figure 4-2.
Agent Help	Launches a Compaq web-based Management Help.
TSMC Help	Launches the TSMC Help files
Force Rescan	Initializes all attached SCSI buses and discovers any devices on them. It also updates the Windows NT or Windows 2000 device list, even if the devices were not attached on boot. This function is found at the bottom left-hand corner of the Device Listing screen.

Options Screen

From the Options screen, you can set behavior and display characteristics of TSMC using the options shown in figure 4-2.

Tape Bin Colors

These options allow you to set the colors for the Test, Cleaning and Data media. Test media barcodes begin with "TST" and Cleaning media barcodes begin with "CLN". Those settings affect the display of the media in the Layout tab for Automation devices.
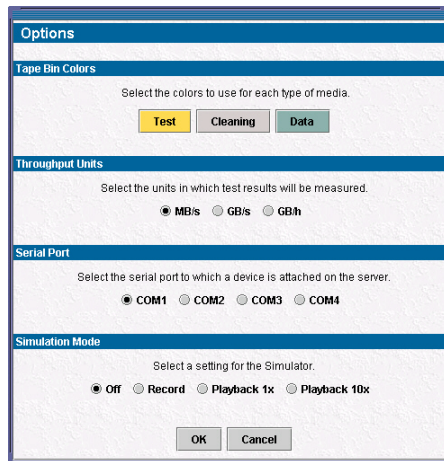
Figure 4-2. Display Settings tab

Units

These options allow the user to establish the throughput units displayed for tests in the Message Log. Available options include:

■ MB/s – Megabytes per second

■ GB/s – Gigabytes per second

■ GB/h – Gigabytes per hour

Serial Connection

If you have tape libraries that support firmware updates via serial ports, you can set the serial port to use, as shown in Figure 4-2. The default is COM Port 2.

Simulation

The Simulation feature is unsupported at this time. Use this option only if directed by Compaq support personal.

> **IMPORTANT:** Use this option only if directed by Compaq support personnel.

Device and Automation Tests

Basic Functionality

SCSI devices often need to be programmed, or setup to function properly for a particular operating environment. Additionally, the media often needs to be examined and perhaps formatted, partitioned, or otherwise prepared.

Testing devices and media can be accomplished through TSMC. Both Standard and Custom tests are available for tape devices. The tests for automation devices include Standard and extended tests. These are all available through the Tests tab.

Figure 5-1. Tests tab

Standard and Extended Tests

The Standard and Extended Tests examine various features of the tape automation devices. The time to perform these tests varies depending on devices. See Appendix 1 for descriptions of the tests.
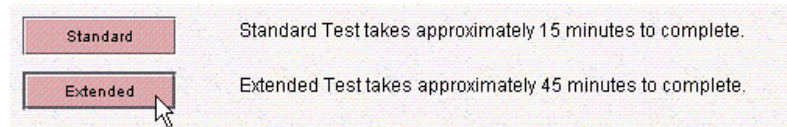
| Standard | Standard Test takes approximately 15 minutes to complete. |
| Extended | Extended Test takes approximately 45 minutes to complete. |

Figure 5-2. Standard and Extended test buttons.

Standard and Custom Tests

The Standard and Custom Tests examine features of tape devices. The Custom test starts with a default list that you may subtract from. The time to perform this test will vary depending on devices. See Appendix 1 for descriptions of the tests.
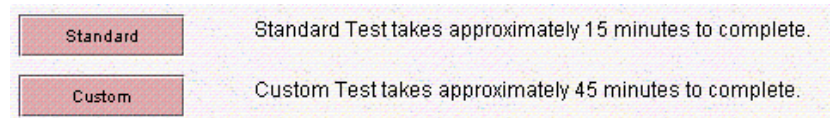
| Standard | Standard Test takes approximately 15 minutes to complete. |
| Custom | Custom Test takes approximately 45 minutes to complete. |

Figure 5-3. Standard and Custom tests buttons.

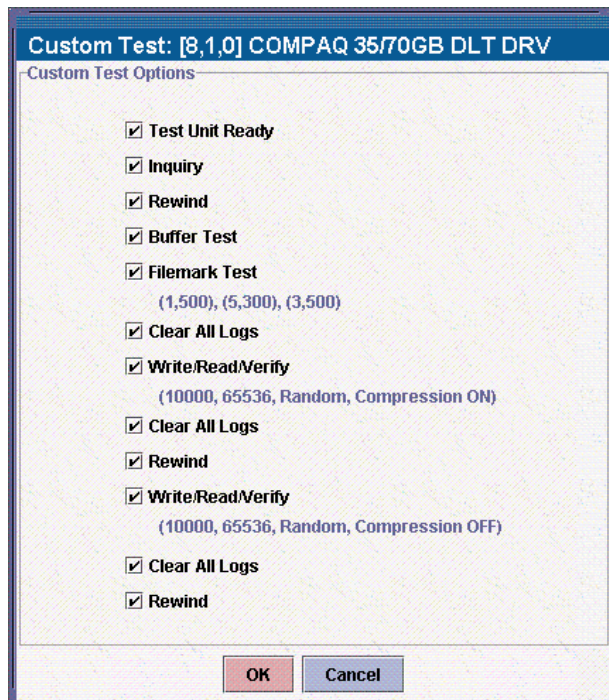Figure 5-4. Custom test options

Advanced Functionality

In addition to performing tests, TSMC allows you to execute device specific commands. There are commands specific to tape automation as well as tape devices.

Automation Commands

The Automation Commands are comprised of Status, Info, and Setup Commands. Descriptions of each of these commands can be found in Table 5-1 through Table 5-3.

Figure 5-5. Automation Tool commands available for a library

NOTE: Some command buttons become disabled if no internal testing information is available for the device.

Device Commands

The Tape Device Commands are comprised of Status, Info, and Setup Commands. Descriptions of each of these commands can be found in tables 5-1 through 5-3.

Figure 5-6. Commands available for a tape device or tape device in a library.

Status Commands

The Status Commands consist of Ready, Reset, Eject, and Rewind. Only the Ready and Reset commands are available in the Automation screen.

Table 5-1
Status Commands

Command Name	Description
Ready	Issues a Test Unit Ready Command to detect if the device is ready
Reset	Issues a soft reset to the device
Eject	Issues an eject command
Rewind	Issues a rewind command

Info Commands

The Info commands are Inquiry, Log Sense, Mode Sense, and Request Sense. These commands are used to provide operational and error information for SCSI devices. By selecting these commands you can view available Log, Mode, or Inquiry Pages and Page Contents. In addition, these pages are written to the Message log.

Table 5-2
Info Commands

Command Name	Description
Inquiry	Shows the inquiry pages maintained for the device. See Figure 5-7.
Log Sense	Shows the log pages maintained for the device. See Figure 5-8.
Mode Sense	Displays mode parameter pages for the device. See Figure 5-9.
Request Sense	Displays status information for the device. See Figure 5-10.

Setup Commands

Table 5-3
Setup Commands

Command Name	Description
Home	This command resets the robotics arm to its starting point. Note that some devices do not reposition their arm physically in response to this command. Available for Automation commands only.
Erase	Erases data on selected media. Options include a long erase and a quick erase. Available for Tape Device commands only.

△ **CAUTION:** Use caution when running the Erase command The quick erase writes a new Beginning of Tape (BOT) and completes in less than 30 seconds. The long erase, once issued, cannot be aborted and runs to completion. The drive reports "busy", and if you need to close TSMC and re-open it while an erase is running, the bus can report back as busy and TSMC may not complete its scan.
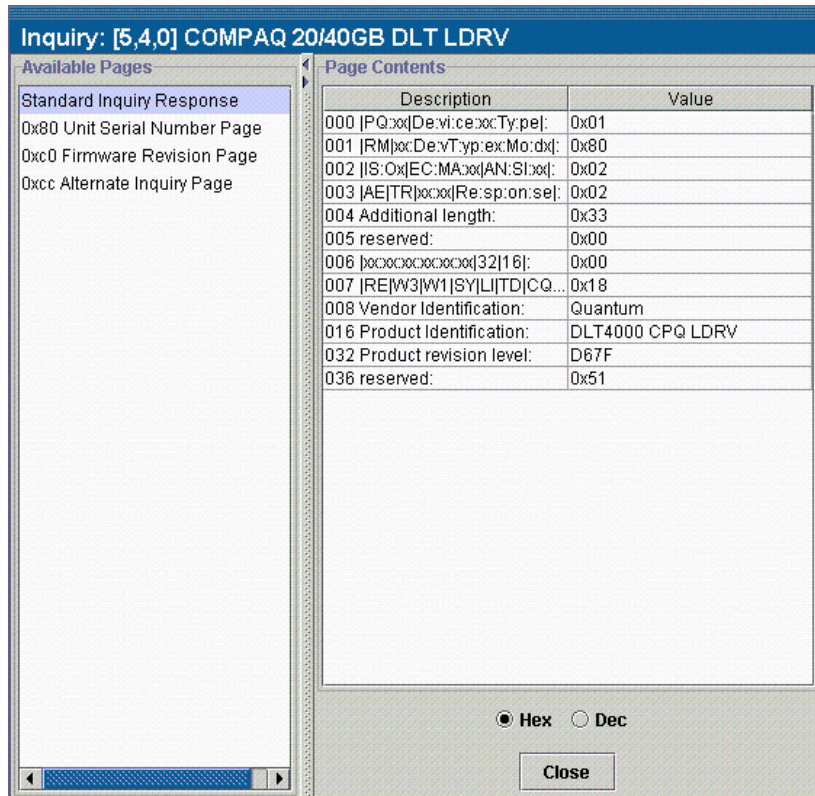
Inquiry

Figure 5-7. Inquiry dialog

The Inquiry dialog, shown in Figure 5-7, displays detailed device parameters.
Click on a page in the Available Pages column to see its contents.
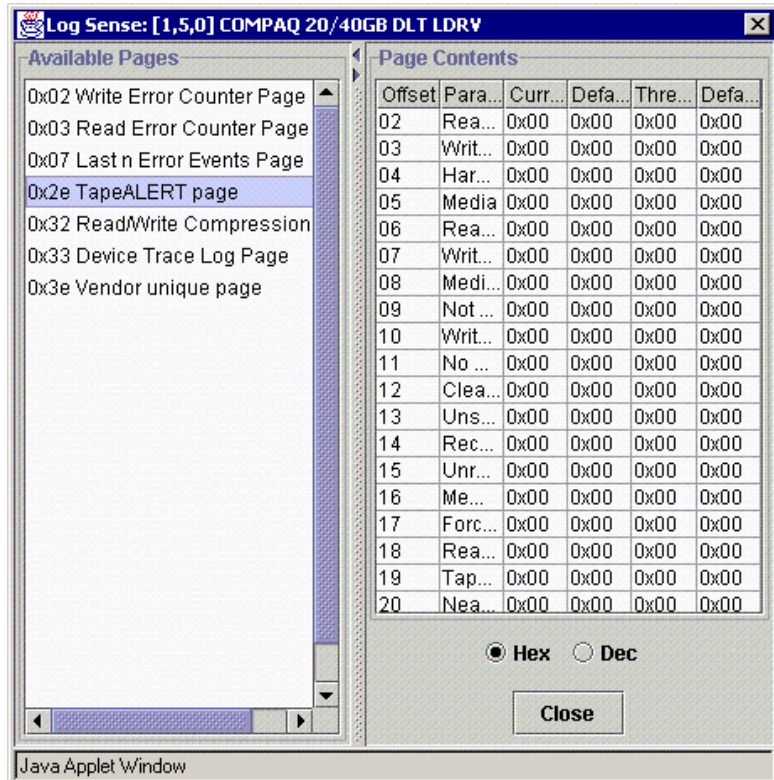
Log Sense

Figure 5-8. Log Sense dialog

The Log Sense dialog, shown in Figure 5-8, displays current and historical statistical information about the device. Click on a page in the Available Pages column to see its contents.
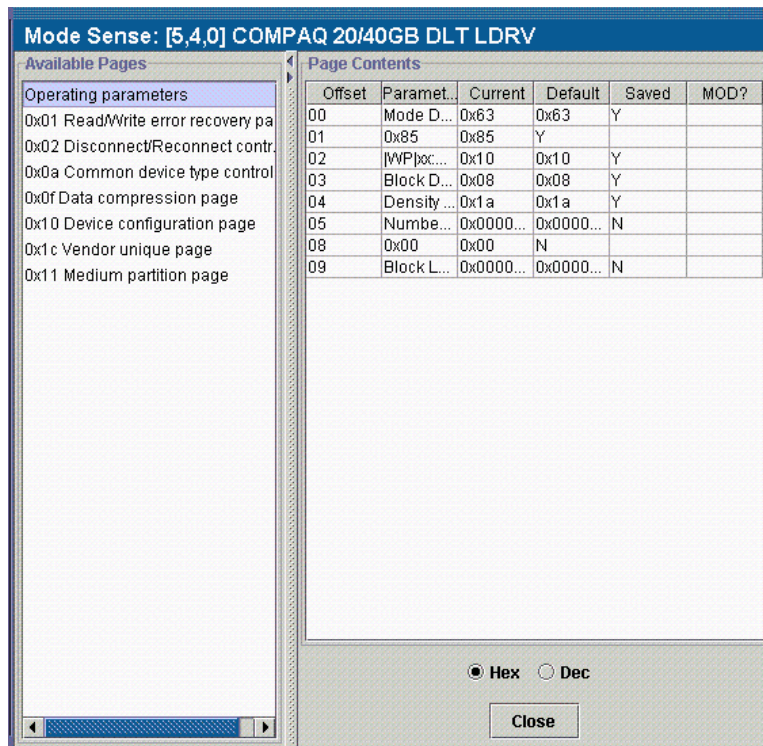
Mode Sense

Figure 5-9. Mode Sense dialog

The Mode Sense dialog, shown in Figure 5-9, displays mode parameter pages for the device. Click on a mode page in the Available Pages column to see its contents.
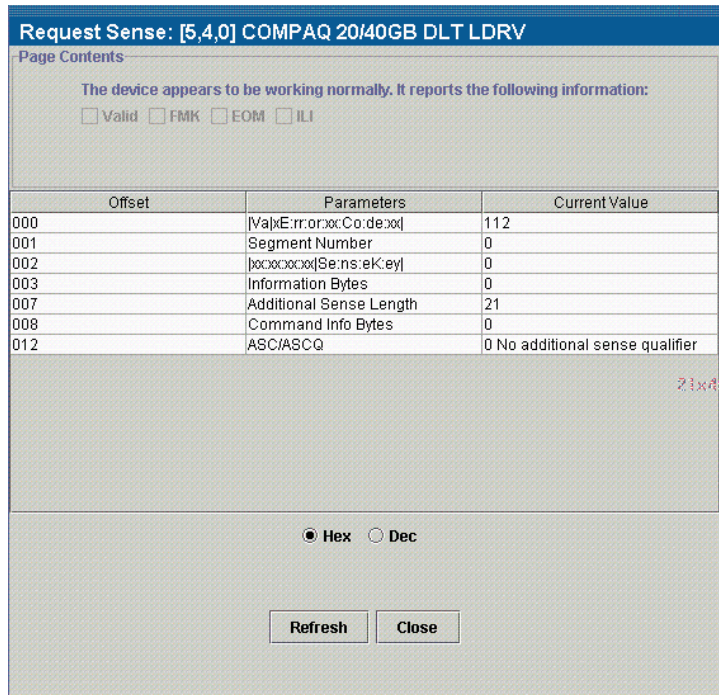
Request Sense

Figure 5-10. Request Sense dialog.

The Request Sense dialog, shown in Figure 5-10, displays status information for the device.

Chapter **6**

Utilities and Other Commands

Utilities

This chapter describes the remaining tabs available on a device or automation screen. They are Firmware, Logs, and Layout.

Firmware

Downloading Firmware Updates

TSMC keeps track of all available firmware versions for specific Compaq products.

TSMC has three options to retrieve firmware or application updates from the Web. You can use the Download command available in the TSMC program, the File Retrieval program located in the TSMC directory, or the Update tab from the Summary screen.

File Retrieval

File Retrieval is a separate program that can be run from outside of TSMC. This program can be run from any Microsoft Windows NT or Microsoft Windows 2000 system to retrieve firmware or application updates. File Retrieval can be found in the parent directory of TSMC Server.

The picture below is the Firmware Retrieval screen. From here, you can select which firmware to download. You can also choose to update the TSMC application from this utility. This file is automatically downloaded into the Download directory under the TSMC directory.
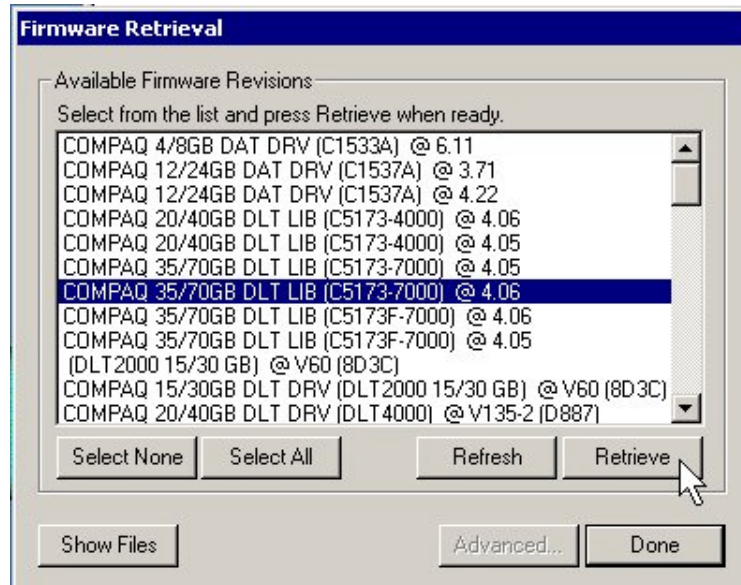
Firmware Retrieval

Available Firmware Revisions

Select from the list and press Retrieve when ready.

```
COMPAQ 4/8GB DAT DRV (C1533A)  @ 6.11
COMPAQ 12/24GB DAT DRV (C1537A)  @ 3.71
COMPAQ 12/24GB DAT DRV (C1537A)  @ 4.22
COMPAQ 20/40GB DLT LIB (C5173-4000)  @ 4.06
COMPAQ 20/40GB DLT LIB (C5173-4000)  @ 4.05
COMPAQ 35/70GB DLT LIB (C5173-7000)  @ 4.05
COMPAQ 35/70GB DLT LIB (C5173-7000)  @ 4.06
COMPAQ 35/70GB DLT LIB (C5173F-7000)  @ 4.06
COMPAQ 35/70GB DLT LIB (C5173F-7000)  @ 4.05
 (DLT2000 15/30 GB)  @ V60 (8D3C)
COMPAQ 15/30GB DLT DRV (DLT2000 15/30 GB)  @ V60 (8D3C)
COMPAQ 20/40GB DLT DRV (DLT4000)  @ V135-2 (D887)
```

Select None   Select All   Refresh   Retrieve

Show Files   Advanced...   Done

Figure 6-1. Selecting a firmware version in the Firmware Retrieval dialog

> **CAUTION:** Make your selection carefully -- firmware dictates the behavior of your device, and different firmware versions will each make your device behave differently.

Table 6-1
Firmware Retrieval Commands

Command Name	Description
Select None	Clears all of your firmware selections.
Select All	Selects all firmware and the latest version of TSMC application for download from the Compaq FTP site.
Refresh	Refreshes the list of available firmware for download.
Retrieve	Downloads the selected firmware from the Compaq FTP site.
Show Files	Opens the Download directory where all downloaded firmware files are stored.
Advanced	Not active at this time
Done	Closes the Firmware Retrieval Utilities

Update Tab

The Update tab is available by clicking the Summary link in the upper left hand corner of the screen. It functions much like the Firmware retrieval utility. When you select the tab the following screen appears. You can select individual or multiple files for download. Make your selections and click the Retrieve Selections button. Please note that you can also download the TSMC application from this screen.
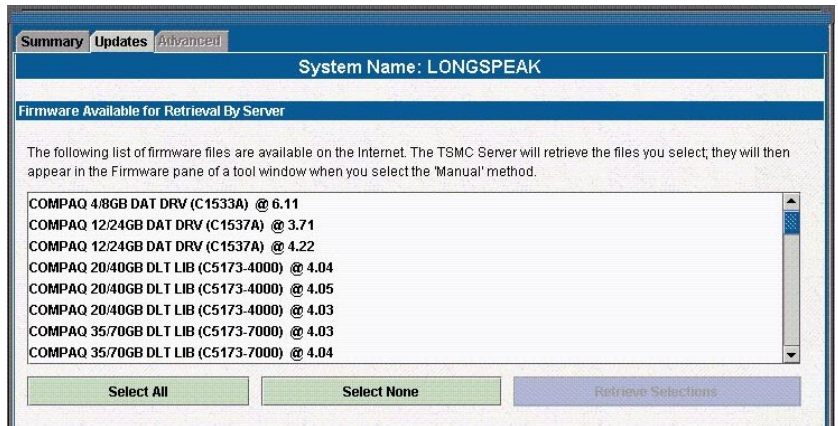
Figure 6-2. Update tab.

Table 6-2
Update Tab Commands

Command Name	Description
Select All	Selects all firmware files for download from the Compaq FTP site.
Select None	Clears all selections
Retrieve Selections	Downloads all from the selected files from the Compaq FTP site.

Firmware Tab

The Firmware tab is accessible for each tape automation device There are two methods to choose from:

- Automatic
- Manual

Click **Auto** if you want to use Compaq recommended firmware updates (from the Compaq FTP site). Click **Manual** if you have a specific firmware file that you want to use.

> **NOTE:** Manual firmware files **MUST** be located in the downloads folder of the parent TSMC directory. Typically, this is located at /Program Files/Compaq/TSMC Server/downloads.
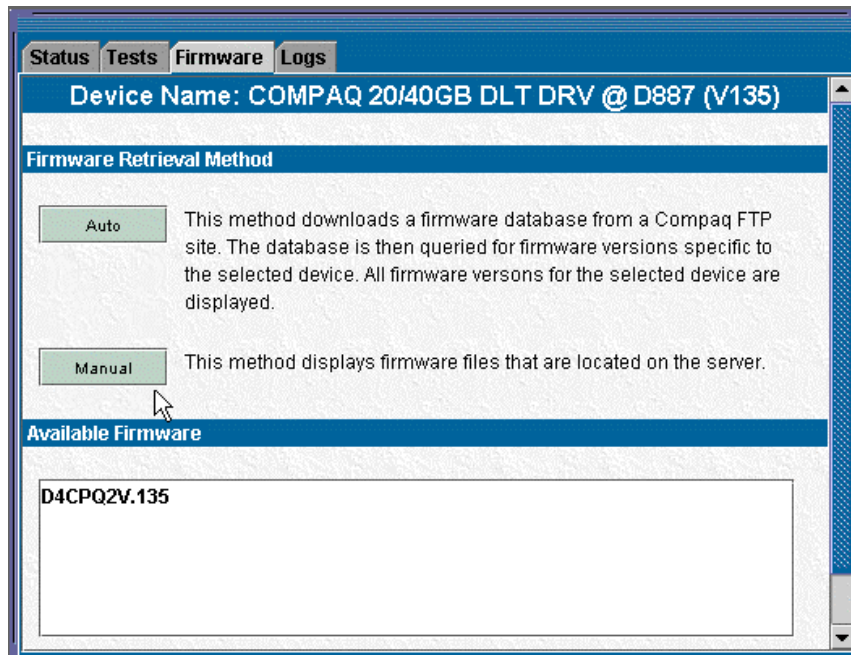
Figure 6-3. Firmware tab showing file available

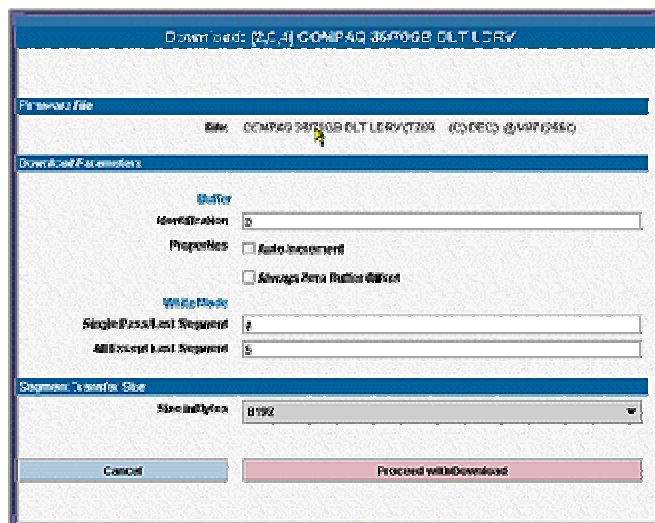Once you select a firmware file, the following dialog appears.

Figure 6-4. Download options screen.

Before proceeding be sure to read the following cautions:

> ⚠ **CAUTION:** Do not interrupt the download process or eliminate power to the device while the download process is running. Doing so may render your device unusable.

> ⚠ **CAUTION:** ESL9000 and TL895 libraries use serial port downloads. Make sure a serial cable is attached to the device and your host computer. If a download fails to succeed, TSMC enforces a "forced re-download". Follow the directions on your screen to complete the procedure.

Remember that TSMC determines download parameters for you when you select a firmware file. If you must change download parameters, consult with Compaq support personnel.

Your tape device may need to be in a specific state to receive new firmware. For example, the media may need to be ejected prior to the firmware download. Check your tape device documentation for specific instructions.

After specifying a file or arriving to this dialog after using the firmware database click on Download. Do not interrupt the download process or eliminate power to the device while the download process is running. Doing so may render your device unusable.

> **NOTE:** After firmware updates are made to devices, you should run a Force Rescan command. This will properly update the device (library or drive) information, reflecting the firmware update.

Logs

Test results are displayed in the **Message Log**, **Error Log**, and **SCSI Log**, which can be opened by selecting the Logs tab.
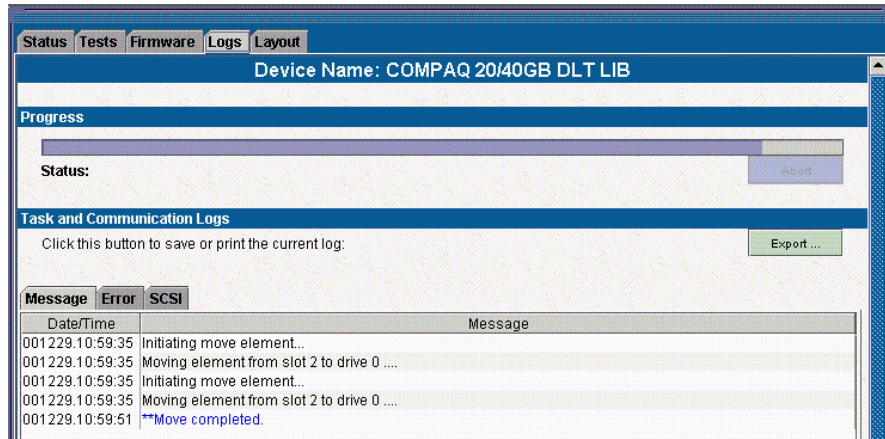

Figure 6-5. Logs screen

Message Log

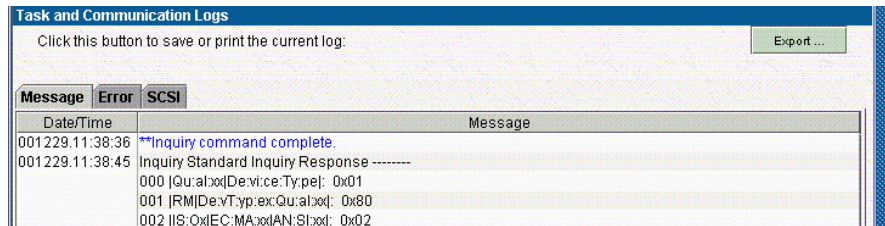This log shows you every command executed so far in ascending order.

Figure 6-6. Message log being updated during test

Error Log

This log shows you SCSI commands that failed or returned an error.

Figure 6-7. Error log showing Device Not Ready response

SCSI Log

This log shows every SCSI command issued to the current device.

Figure 6-8.   SCSI log showing several different CDB's being executed
sequentially

Layout Tab

Clicking on an Automation device in the Device Listing screen will open the Automation screen. The Layout Tab allows you to perform media moves and test automation functions as well as search for barcode media.
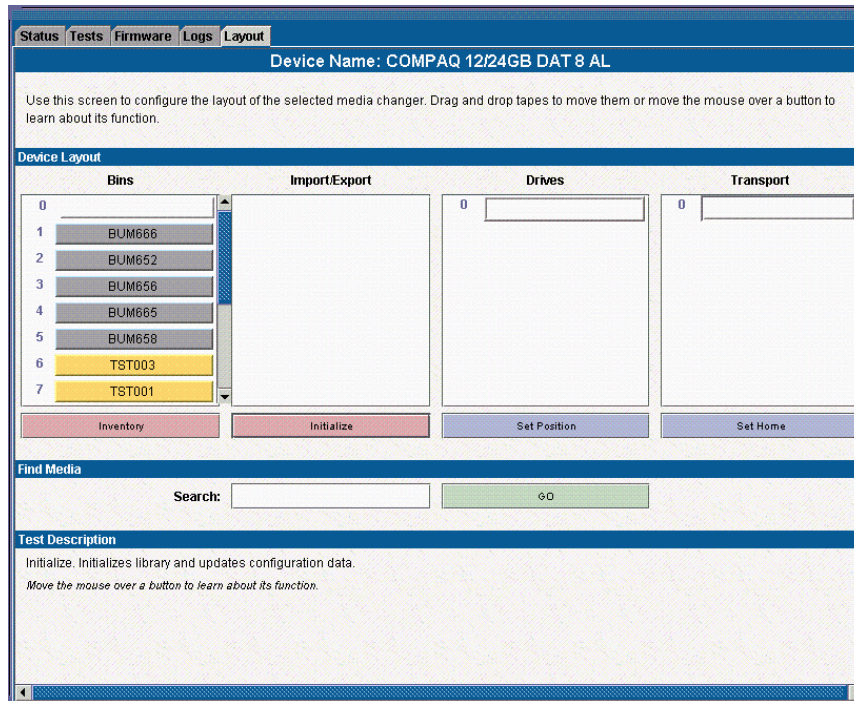
Figure 6-9. Layout screen

A tape can be moved from one location to another by dragging the media with your mouse from one location to another.
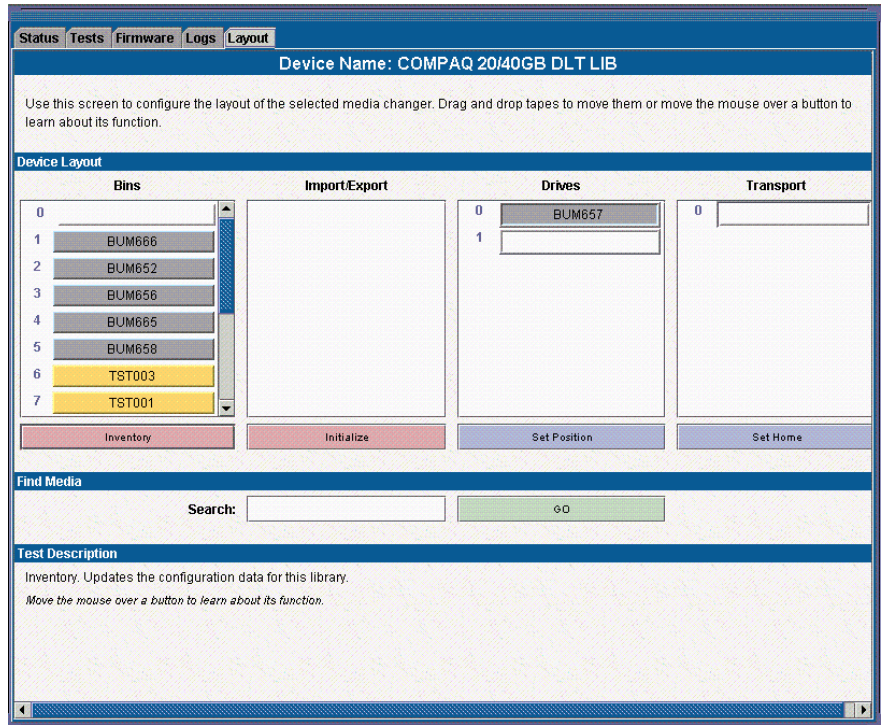
Figure 6-10. Selecting a source and destination

In this case the tape labeled BUM657 will be moved from Slot 2 to Drive 0. Both Source and Destination screens will be updated when the move is complete.

Automation Commands

The Automation commands are Search, Inventory, Initialize, Set Position, and Home.

Search

Selecting this command allows you to locate a specific tape in your library by barcode. Type in the desired barcode and Click Go. Please note that the search is case sensitive.

NOTE: If you leave the field blank, Search takes you to the first cartridge.

Inventory

This command issues an inventory request from the tape library. The information returned from the library to TSMC is from the last inventory performed by the library. The following sections of the TSMC screen are updated:

■ Bins

■ Import/Export (if applicable)

■ Drives

■ Transport (if applicable)

Initialize

This command performs a forced inventory of tapes inside the library. Barcodes are scanned and stored in memory.

> **NOTE:** This process can take a long time depending on the size of your library of tapes.

Set Position

This command positions picker/transport to the media or drive click on the desired destination point of the picker/transport and click on "Set Position".

Home

The Home command moves all media back to its origination point. The origination point is established by clicking the Set Home command (available in the Tests tab). This is useful when you want to test media moves, but you want to put all the media back in its normal position in your automation device.

> **IMPORTANT:** Media position is only stored while the TSMC Client is open.

Frequently Asked Questions

How To...

Run a Request Sense Test

Follow these steps to determine if the device will report back an error:

1. Click on a tape device in the device listing.

Figure 7-1. Device tree listing

2. On the resulting Status screen, click on Tests tab.

3. Select Request Sense under the Info Commands option.

4. The Request Sense dialog will appear, indicating the status of the device.
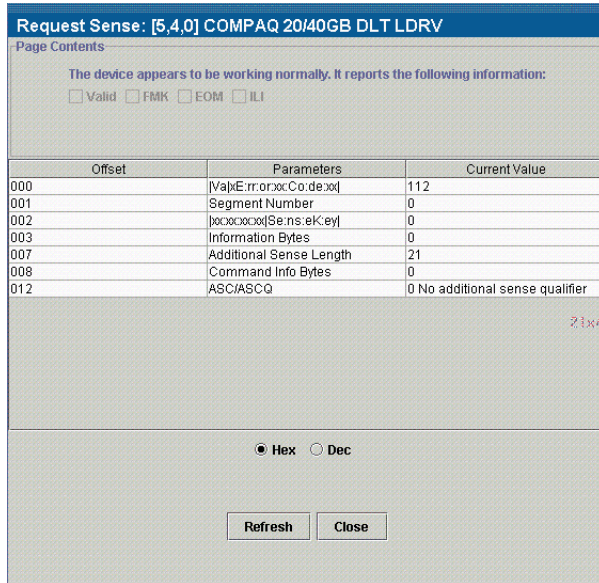
Figure 7-2. The Request Sense dialog

Look at Soft Error Rates

IMPORTANT: Soft errors may indicate worn media or dirty tape heads.

Follow these steps to view the soft errors recorded by a drive.

NOTE: These instructions are for DAT drives.

1. Select the device you want to analyze from the Device Listing.
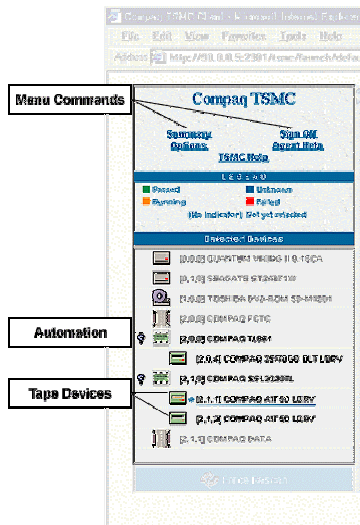
2. On the resulting Status Screen, click on the Tests Tab.

3. Select Log Sense under the Info Commands option.

4. Select Drive Counters Log Page from Available Log Pages.

5. In the Page Contents pane, look at the Offset, Parameters, Current Value and Threshold Defaults for the error rates you are interested in.
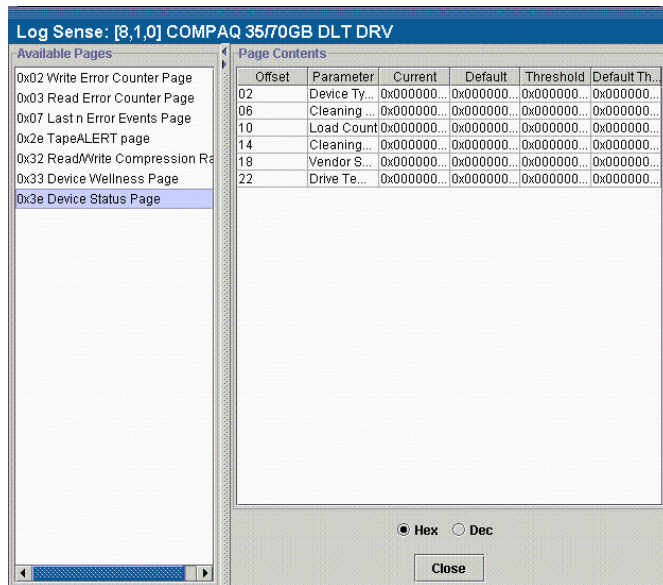
Figure 7-3. Log Sense dialog displaying soft error rates

Update Your Firmware and Software

Firmware and TSMC software updates can be downloaded from the Updates screen. To download an update or file:

1. Click on the Updates tab

2. Select the file you want to download from the list provided

3. Click on the Retrieve Selections button

The files will be downloaded to the TSMC download directory.

C:\Program Files\Compaq\TSMC Server\Downloads

IMPORTANT: Be sure to keep your database version current.

What If My Device Fails the Test?

If the tape device fails to pass a standard or custom test, you should perform the following steps, if possible.

1. Rerun the test.

2. Replace the cartridge and rerun the test.

   NOTE: If the replacement cartridge is new, try a cartridge from a different batch. Compaq recommends that you set aside a cartridge employed in any previously successful test as a reference.

3. Clean the drive using a recommended cleaning cartridge. Rerun the test.

4. Contact Compaq if the device still fails.

What if the Tests Fail to Complete?

If standard tests are not complete in 30 minutes or less, TSMC may have sent a mode command, causing the device to run slowly. Look at the log to see if there is activity. If activity is occurring very slowly, or if the logs are no longer updating, abort the test.

What If I am Having Trouble Seeing Devices on my SAN?

SAN environments can become unstable and TSMC may report back erroneous results. Check and reset FIBRE to SCSI bridges if you suspect that TSMC is having a problem with a device attached to a bridge.

*Appendix **A***

Test Descriptions

TSMC Test Descriptions

The Testing Tools and qualifiers are procedures suggested by Compaq to serve as a vendor return test for a variety of tape drives. In addition, you can run the tests to verify that the devices, libraries, and auto-changers are properly installed. There are two types of tests associated with the Tape drives: Standard and Custom. The Automation device tests consist of Standard and Extended tests. The Standard and Custom tests on the tape drives run an Initialization, Buffer Test, Write/Read Test, and a Filemark Test.

> △ **CAUTION:** Do not use data tapes when performing TSMC tests. Data tapes are over written when performing TSMC tests. Use only Compaq-supplied testing tapes, which have **TST000-999** barcode labels.

Initialization

This test issues a test unit ready, standard inquiry, rewind tape, and reset log pages. The Rewind Command causes a rewind of the tape to the physical beginning of tape.

Buffer Test

This test issues Write Buffer /Read Buffer commands to the device

Write/Read Test

The Read test allows blocks of data to be viewed. Write allows you to write data to any accessible byte and block on the drive.

> ⚠ **CAUTION:** Any data written to a device overwrites the existing data, causing it to be lost. Always make sure you have adequate backups.

Filemark Test

This test is used to separate data. It may also be used at the beginning of tape to set the density of certain devices. These devices function by positioning to the beginning of tape, and then detecting the density of the data in the block following, and then automatically switching to the detected density.

The Space Command causes a tape device to space forward a specified number of filemarks, thus allowing you to skip datasets and position the tape exactly where you want it.

Standard Test Procedure for Devices

Testing times will vary, depending on the device.

Table A-1
Standard Test for Tape Drives

Test Type	Test performed
Initialization	Issue a test unit ready command request
	Issue standard inquiry commands
	Issue Rewind Command
	Save and reset log page parameters
Buffer Test	Issue Write Buffer/Read Buffer
Write/Read Test	Write/Read/Verify X blocks, with an increasing pattern with compression on
	Save and reset log pages
	Write/ Read/Verify X blocks, with a decreasing pattern with compression off
	Save and reset the parameters of log pages
	Reset all log pages
	Read/Verify
	Write/Read/Verify X blocks, with a random pattern with compression on
	Save and reset the parameters of log pages
	Reset all log pages
Filemark Test	Issue a test unit ready command request
	Issue Rewind Command
	Issue a Filemark Command
	Issue a Space Command to go back
	Issue a Space Command to go ahead
	Issue an Erase Command
Partition Test (Helical Scan Devices)	Add A Partition
	Remove the Partition

Standard Test for Automation

The standard test procedure for libraries performs a series of moves from the slots to drives and from drives to slots. The following moves are performed:

■ Move from a slot to a drive

■ Move from a drive to a slot

■ Move from a slot to the load port (libraries containing load ports)

■ Move from a load port to a slot (libraries containing load ports)

■ Move from a slot to a slot

Custom Test Procedures for Tape Devices

The Custom NTF test allows you to select which tests to run: Test Unit Ready, Inquiry, Rewind, Buffer Test, Filemark Test, Clear All Logs, & Write/Read/Verify. These tests are similar to the Standard tests, but implement the tests more often, and in more locations. These times will vary, depending on the device. By Default, all tests are selected.
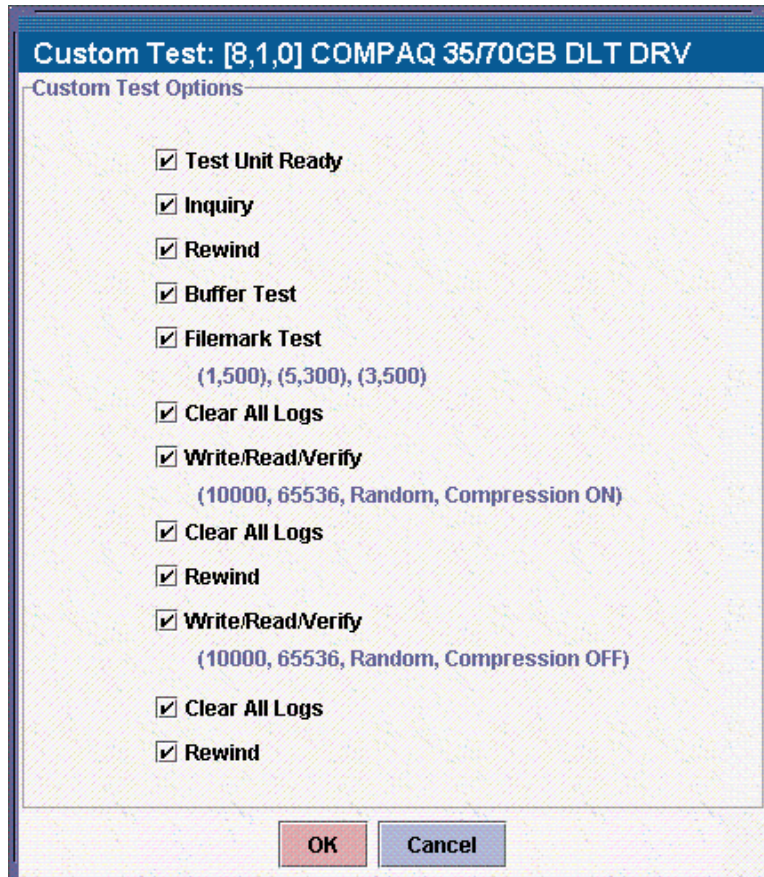

Figure A-1. Custom NTF with default selections

Table A-2
Custom Test for Tape Devices

Test Type	Test performed
Initialization	Issue a test unit ready command request
	Issue a standard inquiry command request
Buffer Test	Issue a Write Buffer command
	Issue Read Buffer command
Filemark Test	Issue a test unit ready command request
	Issue Rewind Command
	Issue a Filemark Command
	Issue a Space Command to go back
	Issue a Space command to go ahead
	Issue an Erase command.
	Issue a test unit ready command request
	Issue Rewind Command
	Issue Filemark Commands
	Issue a Space Command to go back
	Issue a Space command to go ahead
	Issue an Erase command.
	Issue a test unit ready command request
	Issue Rewind Command
	Issue Filemark Commands
	Issue a Space Command to go back
	Issue a Space command to go ahead
	Reset all log pages
	Save and reset the parameters of log pages

Table A-2
Custom Test for Tape Devices *continued*

Test Type	Test performed
Write/Read Test	Write/Read/Verify certain blocks with a random pattern with compression on. Save the parameters of log pages. Reset all log pages.
	Write/Read/Verify certain blocks with a random pattern with compression on. Save the parameters of log pages. Reset all log pages.

Extended Test Procedures for Automation

The extended test procedure for libraries performs the same tests as the standard test for libraries, but the moves performed are more extensive. The moves listed below are performed:

■ Move from a slot to a drive

■ Move from a drive to a slot

■ Move from a slot to the load port (libraries containing load ports)

■ Move from a load port to a slot (libraries containing load ports)

■ Move from a slot to a slot