Quantum

GoVault™ for Windows

GoVault

20013264-001

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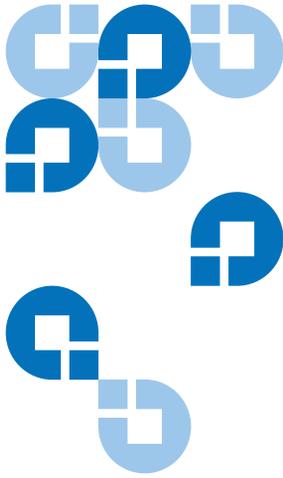
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Preface

Audience

This guide was written for users of the Quantum GoVault™ for Windows dock and cartridge disk drive.

Purpose

This guide provides the following information about the GoVault disk drive:

- Unpacking and installation instructions
- Basic operating procedures
- Specifications

Document Organization

This guide is organized as follows:

- Chapter 1, Introduction, provides an overview of the GoVault disk drive, and summarizes the drive's key operational features.
- Chapter 2, Installation Procedures, provides handling precautions, unpacking tips, and installation instructions for the GoVault disk drive.
- Chapter 3, Operation, describes how to use the GoVault disk drive and deal with operating fault conditions.

- Chapter 4, Specifications, provides detailed GoVault dock and cartridge specifications.

- Appendix A, Changing the Bezel, provides instructions for changing the internal GoVault dock to fit in a 3.5-inch drive bay.

- Appendix B, Configuring Windows for DMA Data Transfer Mode, provides instructions for configuringWindows to use direct memory access (DMA) transfer speeds to improve GoVault performance if you do not install the GoVault system application software.

- Appendix C, Environmental and Disposal Compliances, identifies GoVault environmental compliances and provides instructions for proper disposal of unwanted electrical and electronic equipment.

- Appendix D, Regulatory Compliances, identifies the GoVault compliance with safety and EMC regulations.

Notational Conventions

This guide uses the following conventions:

Note:	Notes emphasize important information related to the main topic.

Tech Tip:	Tech Tips provide technical information which may be helpful in performing the procedure.

Caution:	Cautions indicate potential hazards to equipment and are included to prevent damage to equipment.

Warning:	Warnings indicate potential hazards to personal safety and are included to prevent injury.

Contacts

The following subsections identify the Quantum company contacts.

Quantum Corporate Headquarters

To order documentation on GoVault Tabletop or other products, contact:

Quantum Corporation
P.O. Box 57100
Irvine, CA 92619-7100
(949) 856-7800
(800) 284-5101

Technical Publications

To comment on existing documentation send e-mail to:

doc-comments@quantum.com

Quantum Home Page

Visit the Quantum home page at:

www.quantum.com

Getting More Information or Help

More information about this product is available on the Service and Support website at www.quantum.com/support. The Service and Support website contains a collection of information, including answers to frequently asked questions (FAQs). You can also access software, firmware, and drivers through this site.

For further assistance, or if training is desired, contact Quantum:

Quantum Technical Assistance Center in the USA: 800-284-5101

For additional contact information: www.quantum.com/support

To open a Service Request::   www.quantum.com/esupport

For the most up-to-date information on Quantum Global Services, please visit: www.quantum.com/support
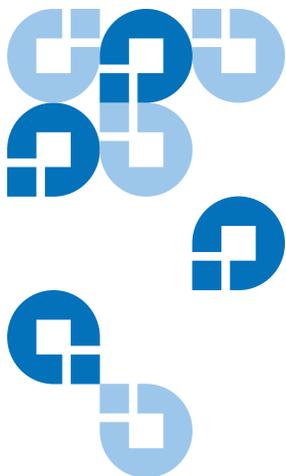
Introduction

This chapter provides an introductory overview of the Quantum GoVault™ for Windows dock and cartridge disk drive. Topics include:

Overview

The GoVault drive is an easy-to-use, cost-effective, high-performance removable-disk data protection device for the following Microsoft® Windows-based workstation and server systems:

- Windows 2000 (Professional and Server), SP 4 and later
- Windows 2003 (32- and 64-bit, Standard and Server)
- Windows XP (32- and 64-bit)
- Windows Vista (all editions)

Product Description

As shown in <u>figure 1</u>, GoVault is available in two models:

- Internal—Mounts in a 3.5- or 5.25-inch bay of your computer workstation or server system

- External (GoVault Tabletop)—Is already mounted inside a standalone enclosure

The following subsections provide a brief description of each GoVault component:

- Hardware components:

  - GoVault docks

  - GoVault cartridges

- Software components:

  - GoVault system application software

  - Backup application software

- GoVault firmware

Figure 1 GoVault Docks
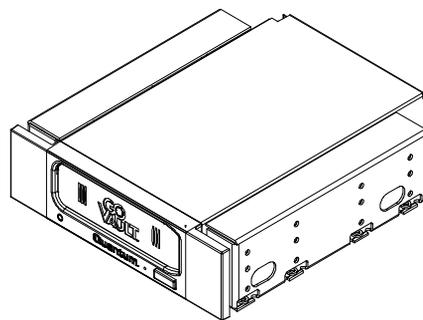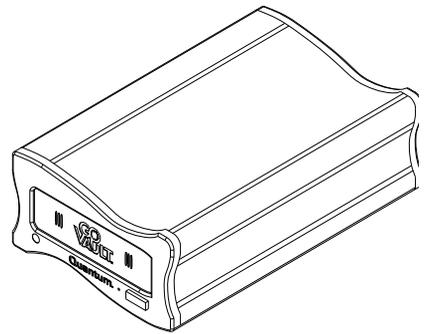
Internal   External

GoVault Docks

Each GoVault dock provides:

- The electromechanical load and unload (eject) mechanisms for the removable disk cartridge

- A Serial ATA (SATA) I/O port for interfacing with the removable disk cartridge

- A green activity LED indicator

- Instant availability of the cartridge to the host workstation or server system

Additionally, each:

. . . GoVault dock	Provides . . .
internal	• A SATA I/O port for interfacing with the host workstation or server system • A DC power connector that accepts +12 VDC and +5 VDC from the workstation or server system power supply
external (Tabletop)	• A Mini-B type USB port for interfacing with the host workstation or server system • A DC power jack that accepts +12 VDC from a 115/230 VAC power adapter/converter

GoVault Cartridges

GoVault removable Ruggedized Disk Cartridges (see figure 2) are currently available in capacities from 40 to 160 Gbytes. The cartridges are all read/write compatible, interchangeable, and can be used with any GoVault dock.

Each GoVault cartridge:

- Is a removable disk that can withstand a 1-meter drop to a hard surface and has a robust SATA connector that is rated for 5,000 matings with the GoVault dock.

- Provides safe data storage for up to 10 years, under proper storage conditions.

- Has a write-protect switch to guard against accidental data overwrite.

- Is preformatted for the Microsoft New Technology File System (NTFS).

Figure 2 Ruggedized Disk Cartridge

Write-protect switch

Front view   Rear view
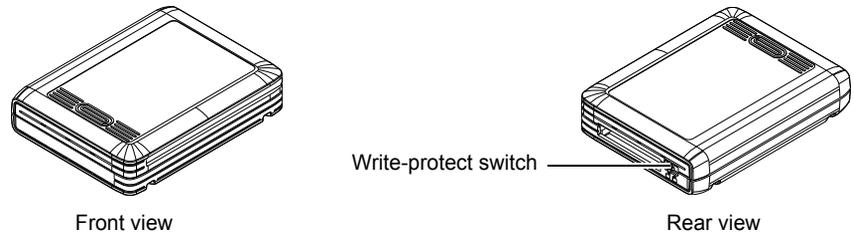
GoVault System Application Software

The highly recommended GoVault system application software provides tools that you can use to:

- Download updated firmware to the GoVault dock

- Set cartridge passwords to protect data on the cartridges

- See warning messages about the fan, or if the operating temperature or voltages are out of range (internal dock only)

- View operating statistics about the GoVault dock and individual cartridges

- Determine if a Self-Monitoring Analysis and Reporting Technology (SMART) threshold is set on the cartridge

- Reformat GoVault cartridges with the FAT32 file system

Backup Application Software

With each GoVault for Windows, Quantum provides robust backup application software that simplifies the automation and management of data backup and recovery operations.

GoVault Firmware

GoVault firmware resides on the GoVault dock and provides the functional/operational interface between the GoVault cartridge and the host workstation or server operating system.

The GoVault firmware:

- Implements Small Computer System Interface (SCSI) Block Commands (SBC-2) device server

- Translates SATA-based ATAPI block commands/status response to SATA-based ATA commands on the SATA drive interface

- Handles the:

  - Write-protect feature of the GoVault cartridge

  - GoVault dock activity LED indicator

  - GoVault disk drive operating states

- Manages the:

  - Lock mechanism for the GoVault cartridge to prevent accidental data loss and enhance drive longevity by assuring that an orderly cache flush and shutdown are applied to the drive before each cartridge eject operation

  - Timeout/standby modes for the GoVault dock electronics to extend product life and maximize the Mean Time Between Failure (MTBF)

Operational Features

Drive Properties Context

GoVault for Windows provides its own operational properties and context support under the Windows operating system. See chapter 2 for information about installing the GoVault system application software, and chapter 3 for information about using GoVault.

Backup Application Interface

Most backup applications that can mount removable media disk-type devices can access GoVault for Windows. For the current list of Quantum- or vendor-tested compatible backup applications, visit the Quantum website at:

 www.quantum.com/ServiceandSupport/CompatibilityGuides/Index.aspx
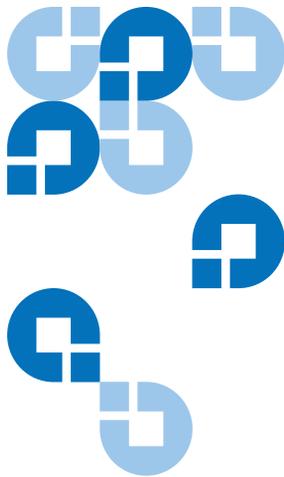
Installation Procedures

This chapter provides instructions for installing the GoVault™ for Windows dock and cartridge disk drive, including:

System Requirements

Before installing GoVault for Windows, make sure that your workstation or server system meets the following hardware and software requirements:

- Hardware:
  - CPU, either:
    - Intel Pentium 4 or above
    - AMD K6 or above
  - CD-ROM drive
  - 2 Mbytes of hard disk storage for the GoVault system application software
  - For the internal GoVault dock:
    - One available 3.5- or 5.25-inch internal drive bay
    - A SATA-compliant interface provided by either a SATA-equipped motherboard or a SATA-compliant host bus adapter PCI card
  - For the external GoVault Tabletop dock, one available USB port
- One of the following operating systems:
  - Windows 2000 (Professional and Server), SP4 or later
  - Windows 2003 (32- and 64-bit, Standard and Server)
  - Windows XP (32- and 64-bit)
  - Windows Vista (all editions)

Cartridge Handling Precautions

Always observe the following guidelines and precautions when handling GoVault cartridges:

- Store cartridges:
    - Between 20° C and 30° C at 20% to 40% relative humidity (noncondensing)
    - Away from magnetic and electric fields

- Do not expose cartridges to:
    - Extreme temperature changes, such as 20° C per hour
    - Corrosive gases
    - Liquids
    - Excessive dust and particles

- Do not stack cartridges such that the bottom cartridges are under compressive stress.

- Do not attempt to open cartridges. They are tamper-evident assemblies. Tampering with a cartridge will void the warranty and could permanently damage the hard disk drive.

- Do not drop cartridges where nonoperational specifications might be exceeded.

Unpacking and Inspection Procedures

Carefully unpack and inspect the GoVault dock as follows:

1 Visually inspect the shipping container and notify your carrier immediately of any damage.

2 Place the shipping container on a flat, clean, stable surface, and carefully remove the contents.

3 Visually inspect the GoVault dock and notify your Quantum representative immediately of any damage.

4 Always save the shipping container and packing materials for any future use.

Installing the Internal GoVault Dock

To install the internal GoVault dock and cartridge disk drive, complete the following procedures in the order presented:

- Installing the SATA Card, if required

- Installing the Internal GoVault Dock

Installing the SATA Card

If your workstation or server system does not already have either a SATA-equipped motherboard or a SATA-compliant host bus adapter PCI card, you should follow the procedures provided by the manufacturer of the SATA card and your computer reference manual.

If the procedures presented in this subsection do not appear to be appropriate for your workstation or server system, stop the installation attempt and seek assistance from the appropriate hardware manufacturer.

> **Note:** This procedure is only necessary if your workstation or server system does not already have a SATA-equipped motherboard or a SATA-compliant host bus adapter PCI card installed.

Procedure

1 As required:

    a Save and close your open files and terminate all running applications.

    b Shut down the workstation or server system.

    c Disconnect the AC power cord from the facility AC power receptacle.

2 Remove the cover from the workstation or server system.

> **Note:** See your computer manufacturer's instructions for the proper procedures to remove the cover.

3 Install the SATA card in an available PCI slot, and secure the card to the computer using one screw (see figure 3).

Figure 3 Installing the SATA Card

SATA card

PCI slot
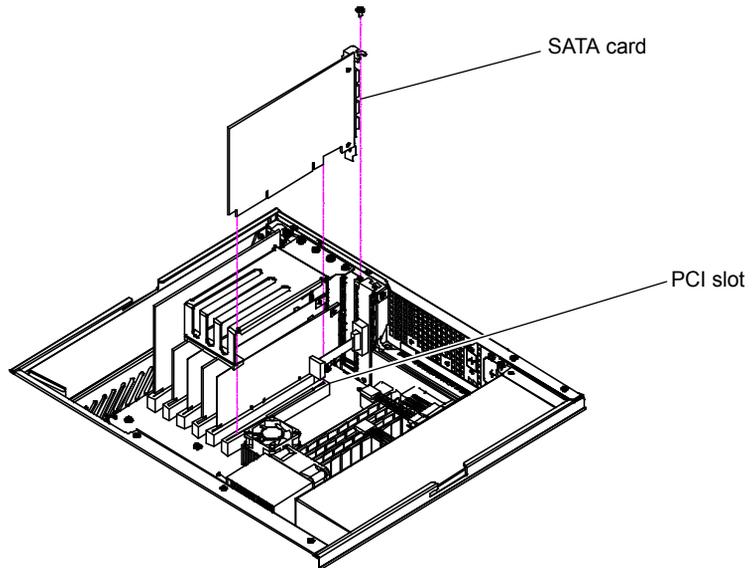
Installing the Internal GoVault Dock

After you have installed the SATA card, or if your computer workstation or server system already has either a SATA-equipped motherboard or a SATA-compliant host bus adapter PCI card, use the following procedure to install the internal GoVault dock.

> **Note:** The standard configuration of the internal GoVault dock includes side brackets and a 5.25-inch bezel for installation in a 5.25-inch drive bay. If you need to install the dock in a 3.5-inch drive bay, use the procedure in appendix A on page 62 to remove the side brackets and change the bezel before installing the internal GoVault dock.

1 If you have just installed a SATA card, then you already have shut down the workstation or server system and removed the cover. In this case, skip to step 4 of this procedure.

If your computer workstation or server system already had either a SATA-equipped motherboard or a SATA-compliant host bus adapter PCI card, then proceed to step 2 of this procedure.

2 As required:

   a Save and close your open files and terminate all running applications.

   b Shut down the workstation or server system.

   c Disconnect the AC power cord from the facility AC power receptacle.

3 Remove the cover from the workstation or server system.

> **Note:** See your computer manufacturer's instructions for the proper procedures to remove the cover.

4 Select an available internal drive bay and, if required, remove the bay cover.

5 Slide the internal GoVault dock into the bay and secure it to the computer chassis with two mounting screws on each side (see figure 4).

Figure 4 Installing and Securing the Internal GoVault Dock

Internal GoVault dock
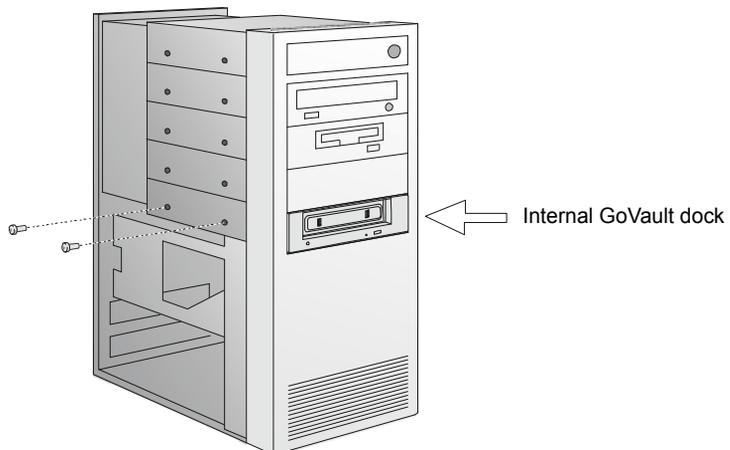
6 Connect one end of the SATA data cable to the SATA data connector on the back of the internal GoVault dock (see figure 5).

Caution:	Do not force SATA connections. SATA connectors are designed to fit one way only. If you encounter any difficulty in making the SATA cable connection, rotate the cable and try again.

Figure 5 Connecting the SATA Data Cable to the Dock

SATA data connector   SATA data cable
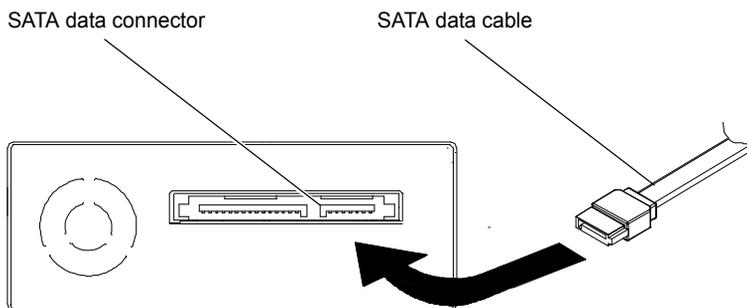
7 Carefully route the SATA data cable from the internal GoVault dock and connect the other end to either the SATA-equipped motherboard or the SATA card (see figure 6).

Figure 6 Connecting the SATA Data Cable to the SATA Card

SATA card data connector

SATA data cable
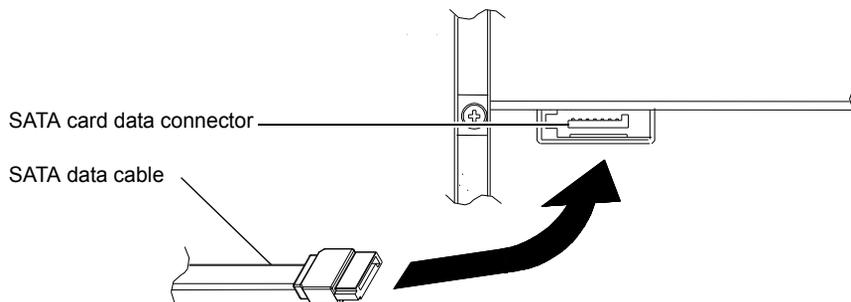
8 Connect the drive end of the SATA power supply conversion adapter cable to the SATA power connector on the back of the internal GoVault dock (see figure 7).

SATA power connector

SATA power supply
conversion adapter cable
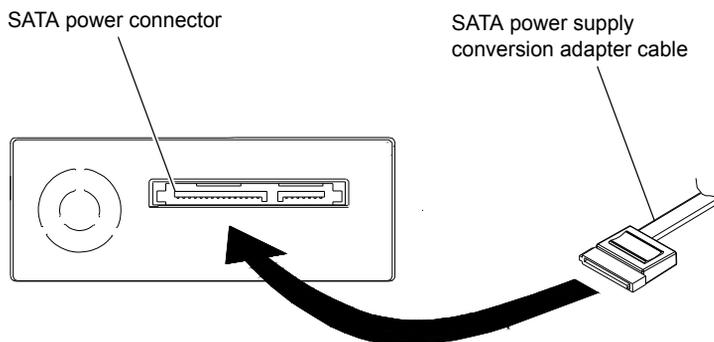
9 Connect the power supply end of the of the SATA power supply
conversion adapter cable to the computer power harness connector
(see figure 8).

SATA power supply
conversion adapter cable

Computer power harness connector
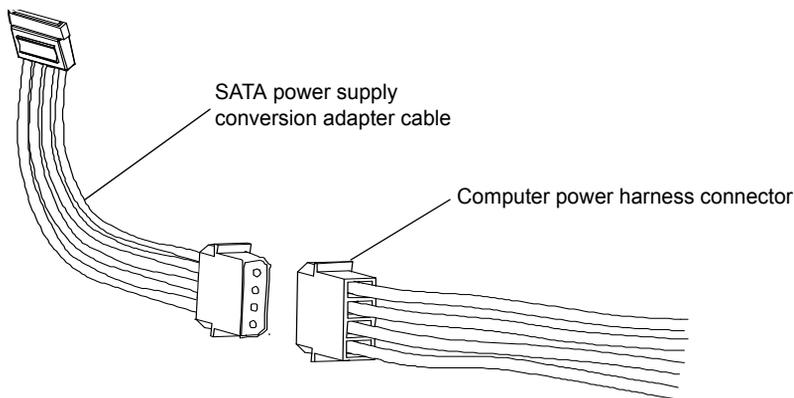
10 Reinstall the system cover and reconnect the AC power cord to the
facility AC power receptacle.

11 Restart the workstation or server system.

12 Verify that the LED on the front panel of the GoVault dock
illuminates when the system starts.

13 Insert a GoVault cartridge into the dock and verify that the front
panel activity LED indicator signifies a successful cartridge load
operation (see Inserting Cartridges on page 21).

14 Use Windows **My Computer** to verify successful GoVault installation and configuration (see figure 9).

15 Perform a number of file copy operations to and from the GoVault cartridge to verify the disk write/read functions.

16 If you are going to install both the GoVault system application software and the backup application software, then proceed to Installing the GoVault System Application Software in the next subsection.

If you are not going to install the GoVault system application software, then skip to Installing the Backup Application Software on page 23.

Note:	If you do not install the GoVault system application software, the Windows operating system might assign the low-speed Programmed I/O (PIO) mode for GoVault data transfer operations. Use the procedures in appendix B, Configuring Windows for DMA Data Transfer Mode, on page 66 to determine if this is the case and, if necessary, configure the operating system to use the high-speed Direct Memory Access (DMA) mode for GoVault data transfer operations.

Figure 9 Successful Configuration Display
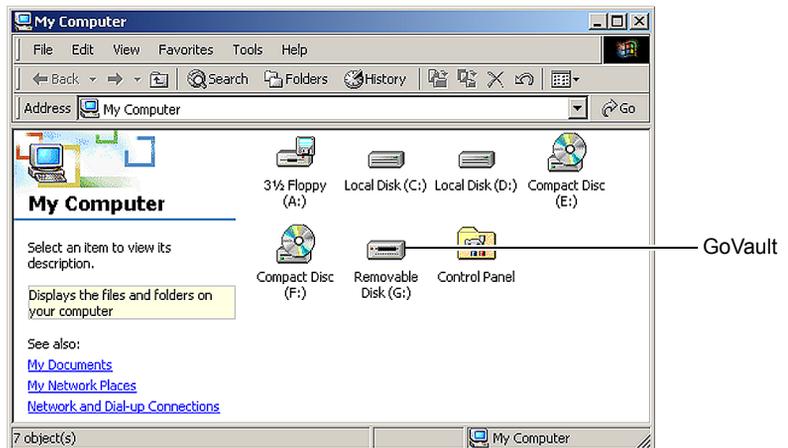
Installing the External GoVault Tabletop Dock

Install the external GoVault Tabletop dock and cartridge as follows:

1 Connect the drive-end (Mini-B) connector of the USB interface cable to the Mini-B USB port on the rear panel of the GoVault Tabletop dock (see figure 10).

2 Connect the DC power output plug of the power adapter/converter to the DC power jack on the rear panel of the dock.

3 Carefully position the dock in a secure location that provides adequate circulation for the rear panel air vents (see figure 10).

4 Plug the power adapter/converter into a 115/230 VAC facility power receptacle and verify that the LED on the front panel of the GoVault Tabletop dock illuminates.

Figure 10 GoVault Tabletop Rear Panel

Air vents   Mini-B USB port   DC power jack
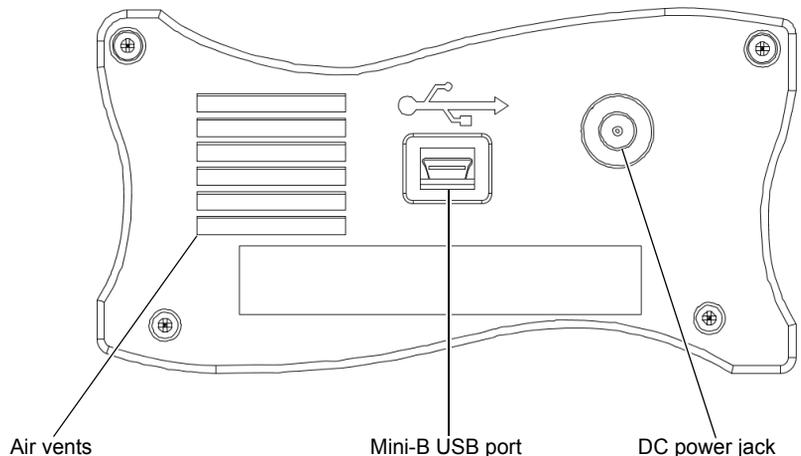
5 Connect the system-end (standard) connector of the USB interface cable to an available USB port on your workstation or server system and verify that the system launches the **Found New Hardware** wizard that finds and configures the device driver, assigns a drive letter, and enables read/write access.

6 Use Windows **My Computer** to verify successful GoVault Tabletop configuration (see figure 9).

7 Insert a GoVault cartridge into the dock and verify that the front panel activity LED indicator signifies a successful cartridge load operation (see Inserting Cartridges on page 21).

8 Perform a number of file copy operations to and from the GoVault cartridge to verify the disk write/read functions.

9 If you are going to install both the GoVault system application software and the backup application software, then proceed to Installing the GoVault System Application Software in the next subsection.

If you are not going to install the GoVault system application software, then skip to Installing the Backup Application Software on page 23..

Note:	If you do not install the GoVault system application software, the Windows operating system might assign the low-speed Programmed I/O (PIO) mode for GoVault data transfer operations. Use the procedures in appendix B, Configuring Windows for DMA Data Transfer Mode, on page 66 to determine if this is the case and, if necessary, configure the operating system to use the high-speed Direct Memory Access (DMA) mode for GoVault data transfer operations.

Installing the GoVault System Application Software

After installing the GoVault dock and cartridge disk drive and verifying that your operating system recognizes the drive, use one of the three system application applets on the GoVault Resource CD to install the GoVault system application software.

Each applet provides an installation package that corresponds to one of the three types of supported operating systems:

- **x64**

- **x86**

- **IA64**

To install the GoVault system application software:

1 First, you need to determine which system application applet to use.

2 Then, see <u>Installing the GoVault System Application Software</u> for the detailed software installation instructions.

Determining Which System Application Applet to Use

To find out which system application applet you need to use:

1 From the **Start** menu on your PC, right click **My Computer.**

2 Select **Properties.**

3 On the **General** tab, under the **System** heading, look for the words **x64 Edition**.

IF . . .	THEN use the . . . system application applet
you see **x64 Edition**,	x64
you do not see **x64 Edition**,	x86
the system is a 64-bit Itanium,	IA64

Installing the GoVault System Application Software

After determining which system application applet you need to use, install the GoVault system application software on your workstation or server system as follows:

1 Insert the GoVault Resource CD into the CD-ROM drive.

2 Browse the CD contents to find the **SetupGoVault.msi** file for the appropriate system application applet.

3 Double-click the **SetupGoVault.msi** file to launch the GoVault Setup Wizard (see <u>figure 11</u>).

4 Click **Next** to continue and display the **License Agreement** dialog (see <u>figure 12</u>).

Figure 11 GoVault Setup
Wizard

Figure 12 License Agreement
Dialog
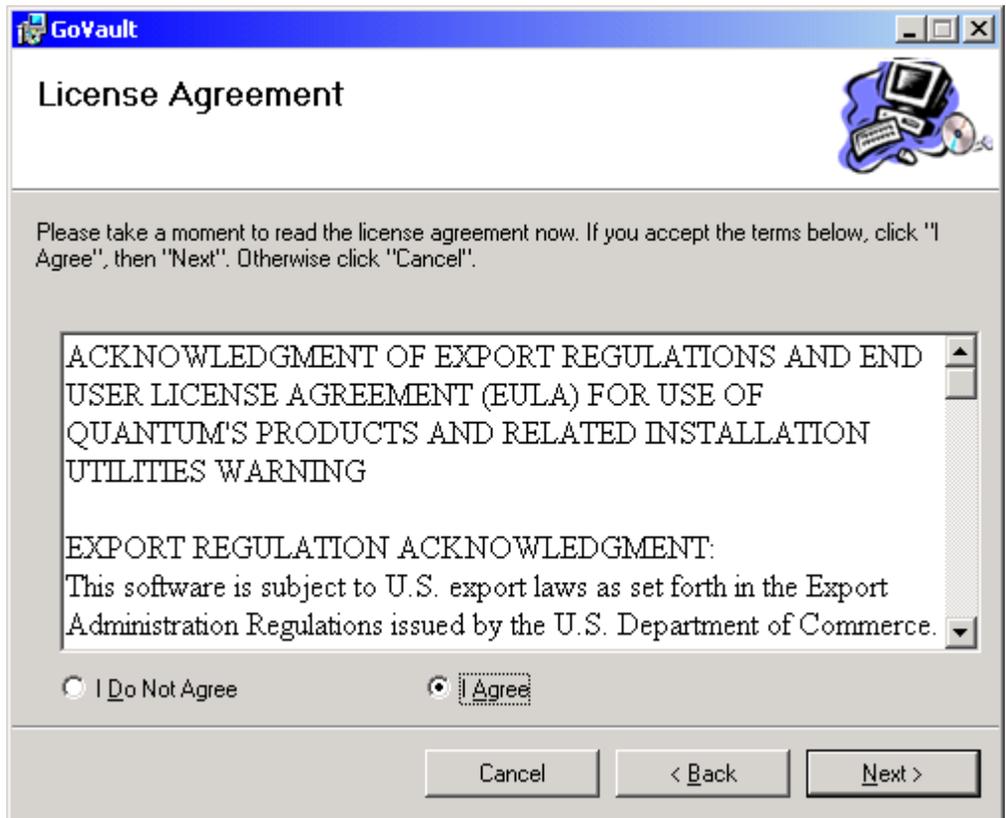
5 Read the License Agreement, select **I Agree**, and click **Next** to continue and display the **Select Installation Folder** dialog (see figure 13).

Figure 13 Select Installation
Folder Dialog
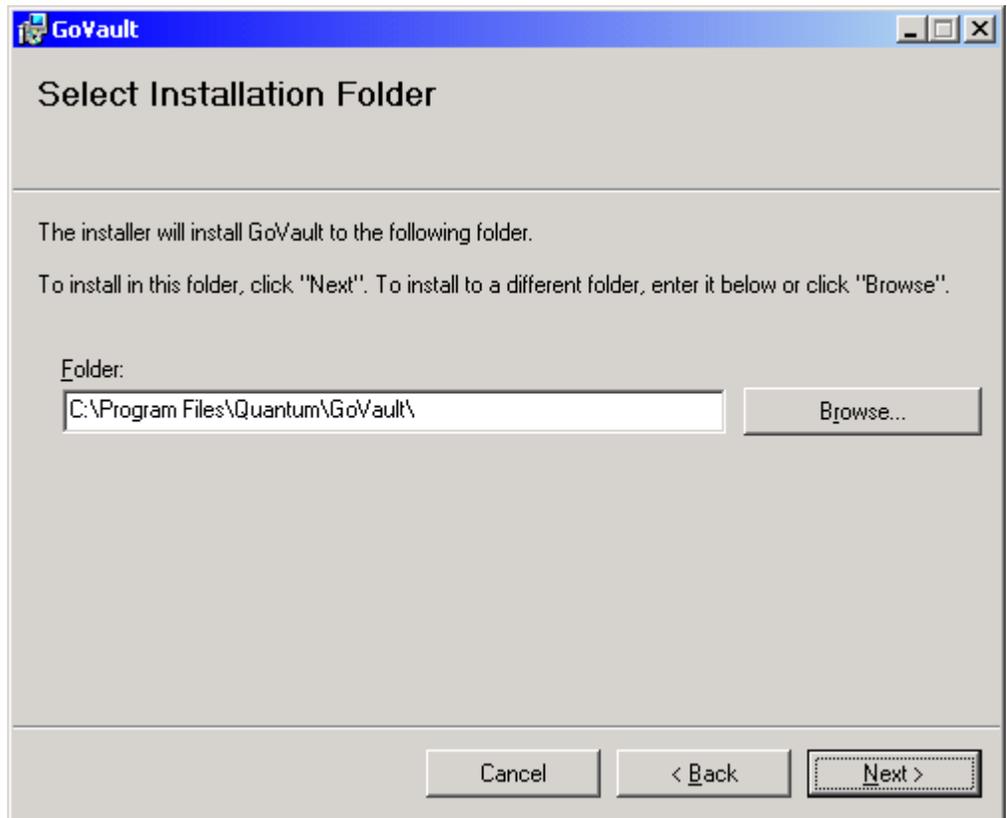
6 Use the **Select Installation Folder** dialog to specify the location where you want to install the GoVault system application software.

7 The default location is shown in figure 13. If you want to specify a different location, click **Browse** and navigate to the file location that you want.

8 Click **Next** to continue and display the **Confirm Installation** dialog (see figure 14).

Figure 14 Confirm Installation
Dialog
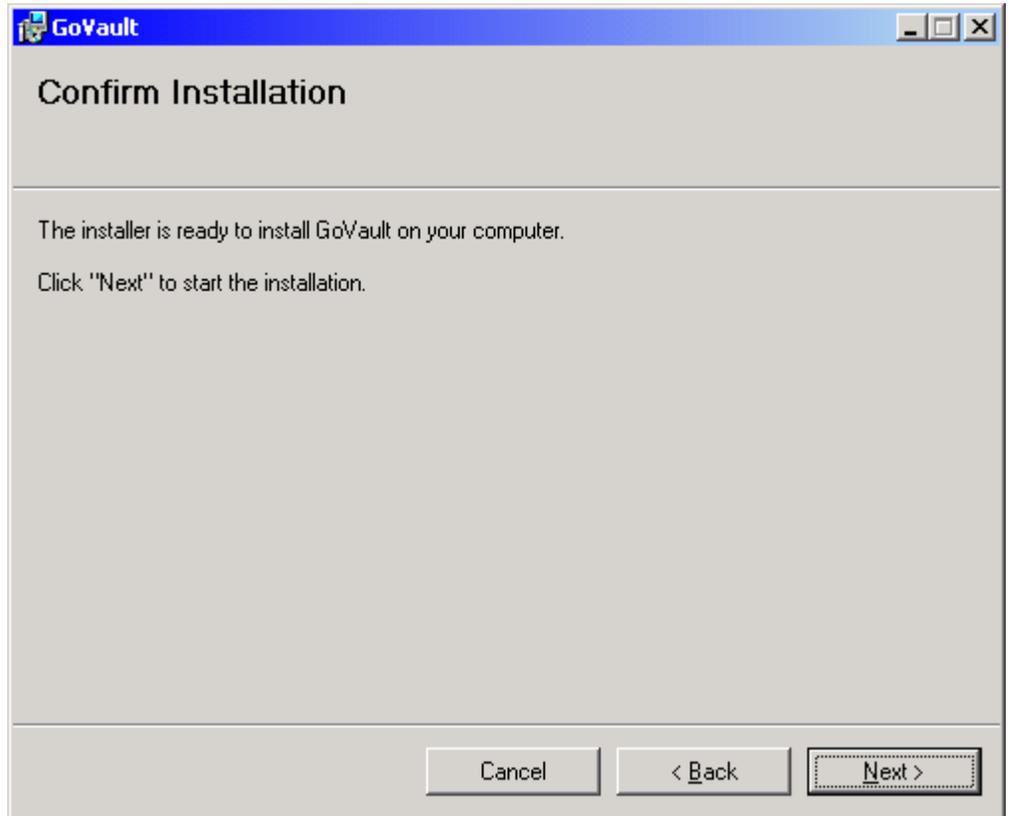
9   Click **Next** to start the installation.

10 Appearance of the **Installation Complete** display signifies a successful installation of the GoVault system application software (see figure 15).

11 As prompted, click **Close** to exit the GoVault Setup Wizard.

Figure 15 Installation Complete
Display
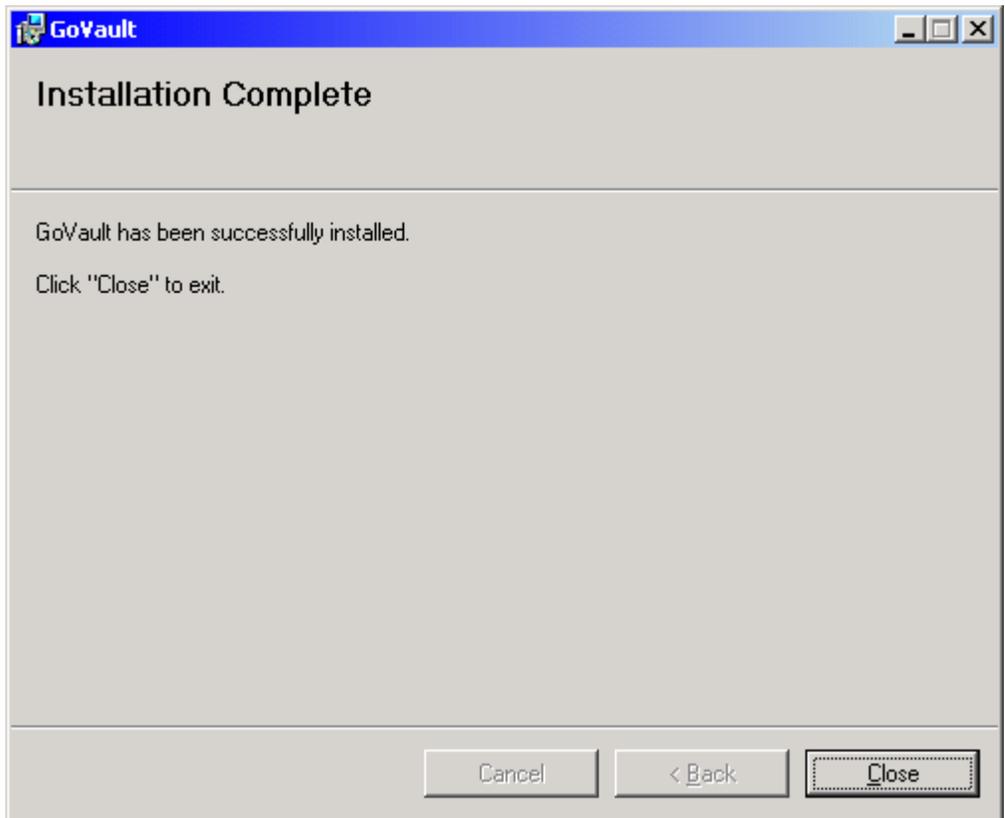
12 Remove the GoVault Resource CD from the CD-ROM drive.

13 Verify successful installation of the GoVault system application software by right-clicking the GoVault drive letter and seeing the **Set Password** and **GoVault Help** options on the menu display

14 If you are going to install the included backup application, or another backup application, proceed to <u>Installing the Backup Application Software</u> in the following subsection.

If you are not going to install a backup application, skip to <u>Registering GoVault</u>.

Installing the Backup Application Software

GoVault for Windows includes a robust backup application. After you have installed the GoVault dock and cartridge hardware and the GoVault system application software:

IF you want to install . . .	THEN refer to the installation instructions provided . . .
the included backup application software,	on the included backup CD.
some other backup application software,	by the other backup application software supplier.

Before installing any other backup application software, check the Compatibility Guide on the Quantum website to verify that it is compatible with GoVault:

www.quantum.com/ServiceandSupport/CompatibilityGuides/Index.aspx

After installing the backup application software, proceed to Registering GoVault in the following subsection.

Registering GoVault

After installing GoVault for Windows, register it via the Quantum website at:

www.quantum.com/registration

Registering GoVault for Windows ensures that you will receive the latest technical information about the drive, as well as other product, service, and support information.
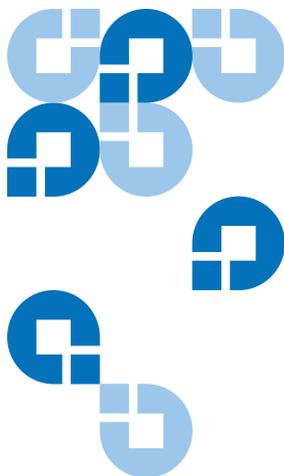
Operation

This chapter describes how to use the GoVault™ for Windows dock and cartridge disk drive, including:

This chapter describes how to use GoVault™ Tabletop. Topics include:

Understanding the Activity LED Indicator Display

The on/off or flashing condition of the green activity LED indicator on the front panel of the GoVault dock displays the various status conditions, as shown in table 1.

Table 1 Activity LED Indicator Display Definitions

When the LED . . .	It means that the GoVault dock . . .
is off,	is not functioning properly, or there is no power to the dock.
is on continuously, and not flashing,	is functioning correctly and either: • There is no cartridge in the dock. • A cartridge load operation has completed and there is a cartridge in the dock.
is flashing on slowly, approximately once per second,	is performing one of the following operations: • Data transfer • Cartridge security erase or encountered a cartridge medium error condition, such as an incompatible file format, device communication problem, and so on.
is flashing on quickly, approximately once per second,	firmware update is in progress.
is flashing on quickly, approximately two times per second,	is unloading a cartridge.
is flashing on quickly, approximately four times per second,	temperature or voltage is out of range (internal dock only).

When the LED . . .	It means that the GoVault dock . . .
is flashing on very quickly, approximately eight times per second,	encountered an unrecoverable hardware error, such as a Power On Self-Test (POST) failure.

Inserting and Ejecting Cartridges

You can insert and eject GoVault cartridges without shutting down the workstation or server system.

Inserting Cartridges

Procedure

1 Verify that the activity LED indicator is on continuously, and not flashing, to signify that the GoVault dock is functioning correctly.

> **Caution:** Do not insert a cartridge when the activity LED indicator is either off or flashing. Doing so might require a manual eject procedure to remove the cartridge.

2 Carefully slide the cartridge into the GoVault dock until you feel a slight resistance as the cartridge engages the internal mechanical load/eject mechanism (see figure 16).

> **Note:** The GoVault dock has an internal alignment tab that engages a matching alignment slot on the upper-right side of the cartridge. This design feature makes it impossible to insert the cartridge either upside-down or backwards.

If you feel any mechanical resistance as you slide the cartridge into the dock, stop and make sure the cartridge is oriented properly, with the connector to the rear and the alignment slot to the upper-right.

3 Firmly push the cartridge the rest of the way into the dock.

4 Verify that the front panel activity LED flashes on and off as the operating system accesses the cartridge.

Figure 16 Inserting a Cartridge

Alignment slot
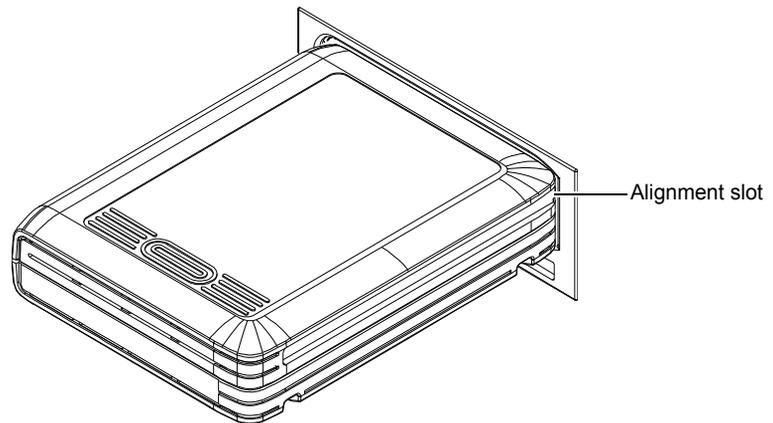
Ejecting Cartridges

Eject a cartridge from the GoVault dock by either:

- Pressing the front panel cartridge eject button (see Power Cartridge Eject Procedure)
- Using the Windows software eject function (see Software Cartridge Eject Procedure), or your backup application software

If neither of those procedures ejects the cartridge, and you must remove the cartridge from the dock, you could also:

- Force an emergency cartridge eject by pressing and holding the front panel cartridge eject button (see Emergency Cartridge Eject Procedure)
- Use the front panel manual cartridge eject hole (see Manual Cartridge Eject Procedure)

Power Cartridge Eject Procedure

1 Verify that the font panel activity LED indicator is not flashing, which would signify that the cartridge is being accessed.

Caution:	Ejecting the cartridge while it is being accessed can result in a loss of data.

2 Press and hold the front panel cartridge eject button for a second or longer, and watch the activity LED to confirm that the cartridge eject operation is underway:

This LED indication . . .	Signifies . . .
continuous fast flashing	a normal cartridge eject operation, which can take up to ten seconds to complete.
five flashes and then stop	that either the backup application software or the operating system inhibited the cartridge eject operation. In this case, see <u>Software Cartridge Eject Procedure</u> in the following subsection, or refer to the documentation for your backup application software.

3 Remove the cartridge from the dock after the eject operation completes and store it in its protective case.

Software Cartridge Eject Procedure

Use Windows to perform the cartridge eject function as follows:

1 Verify that the font panel activity LED indicator is not flashing, which would signify that the cartridge is being accessed.

> **Caution:** Ejecting the cartridge while it is being accessed can result in a loss of data.

2 Right-click the GoVault icon in either Windows **Explorer** or the **My Computer** window to display the GoVault menu (see figure 14 on page 30).

3 Click **Eject** to eject the cartridge.

4 Remove the cartridge from the dock after the eject operation completes and store it in its protective case.

Emergency Cartridge Eject Procedure

> **Caution:**   Avoid using this procedure. Ejecting a cartridge in this
> manner can result in a loss of data and directory
> corruption.

If neither the power nor software cartridge eject procedure is successful,
and you absolutely must have the cartridge ejected from the dock:

1 Verify that the font panel activity LED indicator is not flashing, which
would signify that the cartridge is being accessed.

> **Caution:**   Ejecting the cartridge while it is being accessed can
> result in a loss of data.

2 Press and hold the front panel cartridge eject button until the
cartridge ejects. This could take from fifteen to thirty seconds or
more.

Disregard any displayed error messages.

> **Note:**   If the cartridge still does not eject, remove power from the
> GoVault by either shutting down your workstation or
> server system (internal GoVault dock), or unplugging the
> power adapter/converter from the DC power jack on the
> rear panel of the external GoVault Tabletop dock and use
> the manual cartridge eject procedure (see Manual
> Cartridge Eject Procedure).

3 Remove the cartridge from the dock after the eject operation
completes.

4 Restart your workstation or server system to reset the GoVault dock
firmware.

5 Before using the cartridge again, verify the integrity of its directory
and file system as follows:

  a Insert the cartridge into the GoVault dock.

  b Use the Windows **chkdsk** command or a third-party utility to
  check the cartridge file system.

  c If the integrity check fails, reformat the cartridge before using it
  again (see Reformatting Cartridges on page 33).

Manual Cartridge Eject Procedure

In case of a power loss or other unusual situation that prevents a normal power or software cartridge eject operation, you can manually eject the cartridge from the GoVault dock by straightening a large paper clip and inserting it into the front panel manual cartridge eject hole (see <u>figure 17</u>).

Do not use a pencil or other breakable items.

> **Caution:** Do not use the manual cartridge eject procedure while power is applied to the GoVault dock. Data can be lost or corrupted if you eject the cartridge while power is applied to the dock.

Figure 17 Manual Cartridge Eject Hole

Manual cartridge eject hole
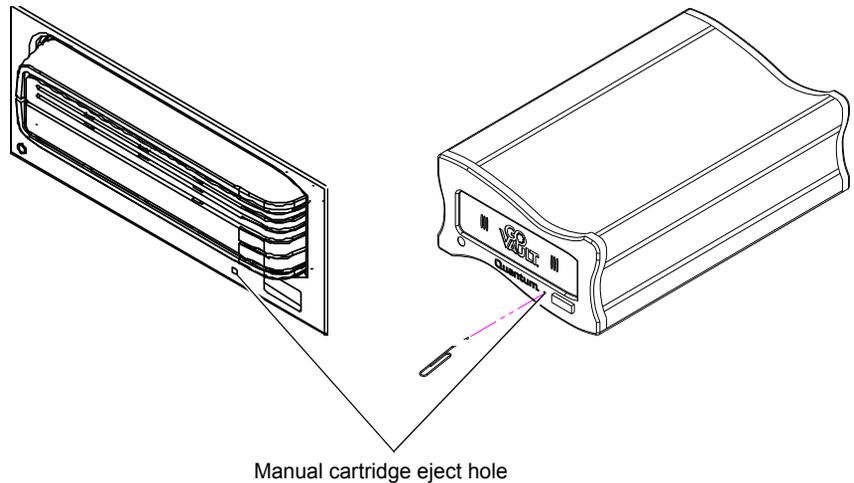
Attaching Labels to Cartridges

GoVault cartridges have two designated areas for attaching labels—one on the front and one on the top, as shown in <u>figure 18</u>. Additionally, the protective plastic cartridge case has an area for attaching a label.

Caution:	Use only Quantum labels on GoVault cartridges. Other labels can cause a cartridge to jam in the GoVault dock.

Figure 18 Cartridge Label Locations

Label locations
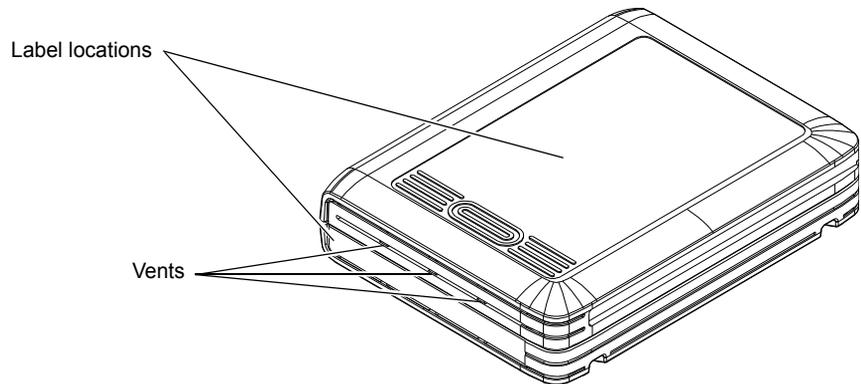
Vents

Caution:	Do not block the vents when attaching labels to the front of GoVault cartridges.

Write Protecting Cartridges

GoVault cartridges have a two-position write-protect switch that enables and disables write access to the disk (see figure 19):

In this position . . .	The write function is . . .
unlocked	enabled. Data can be both written to and read from the cartridge.
locked	disabled (write protected). Data can be read from the cartridge, but not written to it. **Note:** The Windows operating system displays an error message if you try writing to a write-protected cartridge.

The default configuration of the write-protect switch on GoVault cartridges is the unlocked (write-enabled) position.

Figure 19 Cartridge Write Protect Switch

Write-protect switch
(shown in the unlocked position)
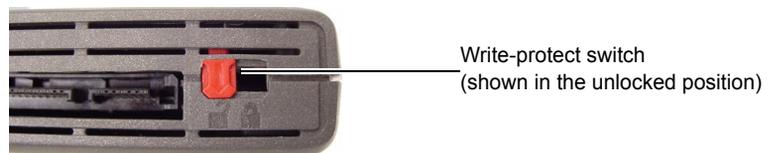
> **Note:** On Windows 2000 systems, you cannot use the write-protect function on GoVault cartridges that are formatted with the New Technology File System (NTFS).
>
> Accessing a write-protected NTSF cartridge on a Windows 2000 system produces an error message indicating that the drive is not accessible, and you will not be able to read any data from the cartridge.

Changing the Volume Label of Cartridges

Under Windows 2003, Windows XP, and Windows Vista, you can change the volume label (name) of GoVault cartridges as you would any other disk drive by:

1 Right-clicking the GoVault drive letter in the Windows **My Computer** or **Explorer** display.

2 Selecting either:

• **Rename** on the menu display and typing a new volume name on the **My Computer** or **Explorer** display.

• **Properties** on the menu display, and typing a new volume in the name field of the **General** tab dialog.

Reformatting Cartridges

> **Caution:** Reformatting a cartridge destroys all of the data on the cartridge.

You can reformat GoVault cartridges as you would any other disk drive by:

1 Right-clicking the GoVault drive letter in the Windows **My Computer** or **Explorer** display.

2 Selecting **Format** on the menu display and specifying the new cartridge:

• Capacity

• File system

• Volume label

• Format options

The GoVault system application software can format the cartridge with the NTFS or FAT32 file system.

> **Note:** If you have installed the GoVault system application software, you can format a FAT32 file system larger than 32 Gbytes, however the maximum *file size* (not volume size) is 4 Gbytes. If you format a cartridge with the FAT32 file system, you must take care that the backup *file* does not exceed 4 Gbytes or your backup software will report an error.

Accessing GoVault System Application Software Features

The GoVault features described in the following subsections are only available if you have installed the GoVault system application software (see Installing the GoVault System Application Software on page 12).

To access the GoVault system application software features:

1 Right-click the GoVault icon in the Windows **My Computer** or **Explorer** display to view the GoVault system application software menu (see figure 20).

> **Note:** If you have not installed the GoVault system application software, right-clicking the GoVault icon displays the standard Windows menu for removable-media disk drives.

Figure 20 GoVault System
Application Software Menu
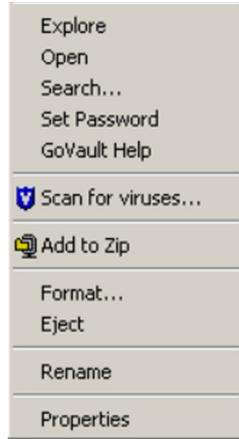
2 On the GoVault system application software menu:

Selecting . . .	Displays . . .
Explore	the standard Windows **Explorer** window with an expanded GoVault drive display.
Open	the standard Windows **File Open** window with an expanded GoVault drive display.
Search...	the standard Windows **File Search** window with the GoVault drive displayed in the **Look in:** list box.
Set Password	the GoVault **Set Cartridge Password** dialog that you can use to configure password protection for cartridges (see Using Cartridge Password Protection in the following subsection).
GoVault Help	the online help for the GoVault system application software.
Scan for viruses...	the standard scan screen for your installed antivirus software application.
Format...	the standard Windows **Format Local Disk** dialog for the GoVault drive.
Eject	nothing, but initiates a software cartridge eject operation.

Selecting . . .	Displays . . .
Rename	the standard Windows **Explorer** window with the GoVault drive name highlighted for the file rename function.
Properties	the standard Windows local disk **Properties** dialog for the GoVault drive (see figure 21), with extensions to support the following GoVault features: • Dock and cartridge status checking (see Checking the GoVault Dock and Cartridge Status on page 44). • Firmware updating (see Updating the GoVault Firmware on page 47).

Figure 21 GoVault Properties Dialog
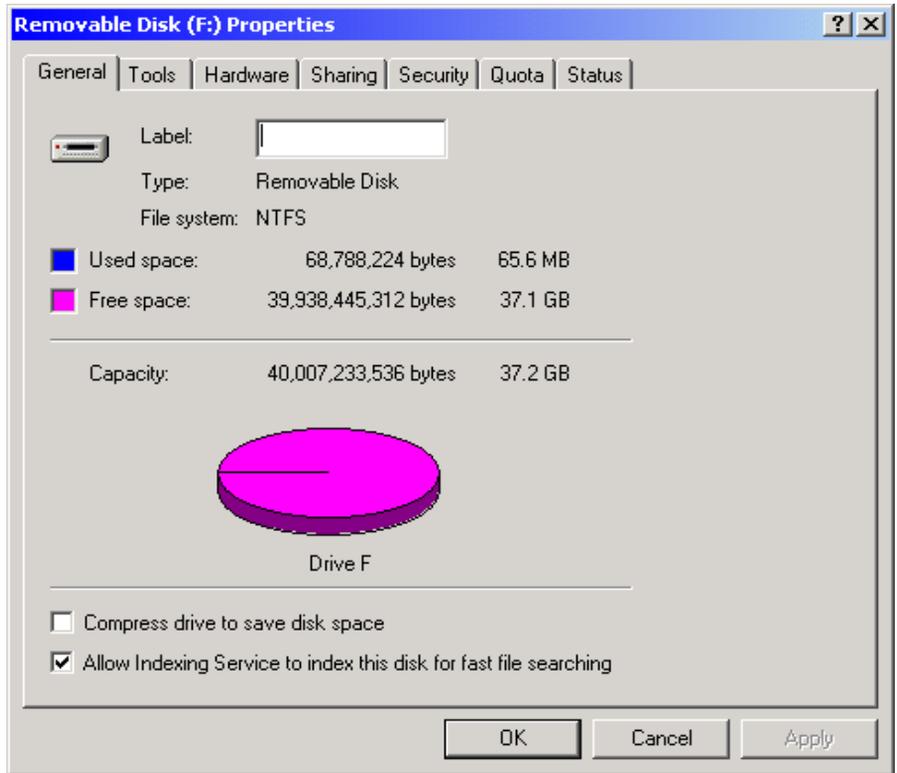
Using Cartridge Password Protection

The GoVault system application software provides cartridge password protection features that you can use to:

- Create and use a unique password for each GoVault cartridge

- Change the password or remove password protection for a cartridge

- Perform a Security Erase Cartridge function to reuse the cartridge if you forget or lose the password

About Cartridge Password Protection

Before setting up password protection for your GoVault cartridges, carefully consider the following issues:

- If you set a password for a cartridge, you will have to type the password each time you insert the cartridge into the dock.

- You might want to use a cartridge password if the data stored on the cartridge is sensitive to you and you don't want the data to be seen by others. But if you are certain the cartridge will always be in your possession, you might *not* want to use a password.

- There is no possible data recovery from a forgotten or lost cartridge password.

> **Caution:** If you forget or lose a cartridge password, you will not be able to access or retrieve any of the data on the cartridge. The data will be lost. There is no recovery from a forgotten or lost cartridge password.

Though the data will be lost, you can perform a Security Erase Cartridge function and reformat the cartridge so it can be reused.

Always record cartridge passwords and store them in a safe, secure location.

Setting Cartridge Password Protection

To set password protection for a GoVault cartridge:

1 Create the password that you want, using the following requirements:

  • From 6 to 16 case-sensitive characters

  • No spaces, symbols, or special characters

2 Record the password and store it in a safe, secure location.

3 Insert a write-enabled cartridge into the GoVault dock.

4 Right-click the GoVault icon in the Windows **My Computer** or **Explorer** display to view the GoVault system application software menu (see figure 20 on page 35).

5 Select **Set Password** from the menu to display the **Set Cartridge Password** dialog (see figure 22).

Figure 22 Set Cartridge Password Dialog

GoVault: Set Cartridge Password

⚠ Once the password is set, each new load of the media REQUIRES the password in order to access the data on the media. Password recovery is NOT possible.

If the password is forgotten the media can be reused after executing a Security Erase. Doing so will result in the loss of any data on the media.

New Password: [＿＿＿＿＿＿＿＿]

Confirm Password: [＿＿＿＿＿＿＿＿]

A password must be from 6 to 16 characters.
No spaces are allowed.
The fields are case sensitive.

[OK]   [Cancel]   [Help]

6 As prompted, type the cartridge password in the **New Password** text box.

> **Note:** The password fields are case-sensitive. Also, always record cartridge passwords and store them in a safe, secure location.

7 Type the password again in the **Confirm Password** text box.

8 Click **OK** to assign the password to the GoVault cartridge and close the **Set Cartridge Password** dialog.

Entering the Cartridge Password

When you insert a password-protected cartridge into the GoVault dock, the GoVault system application software displays the **Enter Cartridge Password** dialog (see figure 23).

Figure 23 Enter Cartridge Password Dialog

1 As prompted, type the cartridge password in the **Password** text box.

2 Click **OK** to close the **Enter Cartridge Password** dialog and access the GoVault cartridge.

3 If you entered an incorrect password, an error message asks you to try again.

4 Click **OK** to redisplay the **Enter Cartridge Password** dialog (see figure 23).

5 As prompted, type the cartridge password in the **Password** text box.

6 Click **OK** to close the **Enter Cartridge Password** dialog and access the GoVault cartridge.

7 If you entered a second incorrect password, a second error message asks you to try again. Repeat steps 4, 5, and 6.

8 If you enter a third incorrect password, the GoVault system application software terminates the password entry routine and displays an error message indicating that you must now eject and reinsert the cartridge to proceed (see figure 24).

Figure 24 Incorrect Password Eject Message

GoVault: Incorrect Password

The Password you entered is incorrect. The cartridge must be ejected and reinserted before another password can be attempted.

If you click Cancel, the data on the cartridge will not be accessible and the cartridge must be ejected with the eject button on the dock.

Eject   Cancel   Help

9 As prompted, click **Eject** to eject the cartridge.

10 Reinsert the cartridge into the GoVault dock to redisplay the **Enter Cartridge Password** dialog (see figure 23).

11 Repeat the password entry procedure, beginning with step 1.

Changing the Cartridge Password

To change the current password of a password-protected cartridge:

1 Eject and reinsert the cartridge to redisplay the **Enter Cartridge Password** dialog (see <u>figure 23</u> in the preceding subsection).

2 As prompted, type the current cartridge password in the **Password** text box.

3 Select the **Change Password** checkbox.

4 Click **OK** to display the **Change Cartridge Password** dialog (see <u>figure 25</u>).

Figure 25 Change Cartridge Password Dialog

GoVault: Change Cartridge Password

⚠️ Once the password is set, each new load of the media REQUIRES the password in order to access the data on the media. Password recovery is NOT possible.

If the password is forgotten the media can be reused after executing a Security Erase. Doing so will result in the loss of any data on the media.

New Password: [   ]

Confirm Password: [   ]

☐ Remove password protection

A password must be from 6 to 16 characters.
No spaces are allowed.
The fields are case sensitive.

[OK]   [Cancel]   [Help]

5 Create the new password that you want, using the following requirements:

- From 6 to 16 case-sensitive characters
- No spaces, symbols, or special characters

6 Record the password and store it in a safe, secure location.

7 As prompted, type the new cartridge password in the **New Password** text box.

8 Type the password again in the **Confirm Password** text box.

9 Click **OK** to assign the new password to the GoVault cartridge and close the **Change Cartridge Password** dialog.

Figure 26 Removing Cartridge Password Protection

To remove password protection from a cartridge:

1 Insert, or eject and reinsert the password-protected cartridge to redisplay the **Enter Cartridge Password** dialog (see <u>figure 23</u> on page 39).

2 As prompted, type the cartridge password in the **Password** text box.

3 Select the **Change Password** checkbox.

4 Click **OK** to display the **Change Cartridge Password** dialog (see <u>figure 25</u>).

5 Select the **Remove password protection** checkbox.

6 Verify that the **New Password** and **Confirm Password** text boxes are both blank.

7 Click **OK** to remove password protection from the cartridge and close the **Change Cartridge Password** dialog.

Performing a Security Erase Cartridge Function

The Security Erase Cartridge function erases all of the data on a cartridge. Then, after completing the Security Erase Cartridge function, you will have to reformat the cartridge. This is the only way to reuse a password-protected cartridge if the password has been forgotten or lost.

Note: The Security Erase Cartridge function only restores the cartridge for reuse. There is no recovery function for the data on a password-protected cartridge with a forgotten or lost password.

If you cannot access a password-protected cartridge because of a forgotten or lost password, perform the Security Erase Cartridge function as follows:

1 Close all applications running on the workstation or server system, especially:

- Applications that might try to access the GoVault cartridge
- File managers, such as **My Computer** or **Explorer**

> **Note:** Depending on the size of the cartridge, the Security Erase Cartridge function could take anywhere from 30 minutes to 2 hours or more.

2 Insert, or eject and reinsert the password-protected cartridge to redisplay the **Enter Cartridge Password** dialog (see figure 23 on page 39).

3 Click the **Security Erase** button to display the **Security Erase Cartridge** dialog (see figure 27).

Figure 27 Security Erase Cartridge Dialog
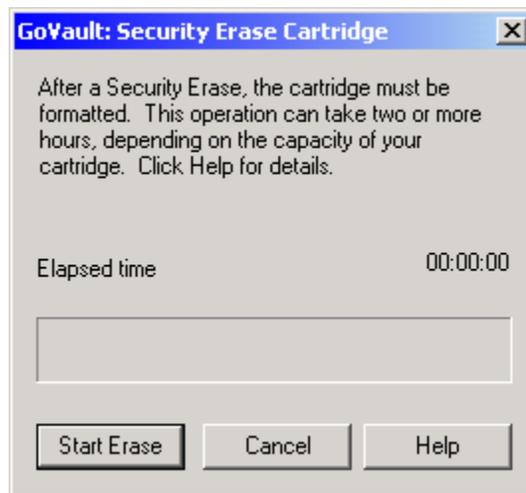
    4 On the **Security Erase Cartridge** dialog:

        a Click **Cancel** if you want to quit without erasing any of the data on the cartridge.

           You will not be able to click **Cancel** after you begin the Security Erase Cartridge function.

        b Click **Start Erase** to display a deleting-all-files warning message.

    5 Click **OK** on the deleting-all-files warning message to begin the Security Erase Cartridge function.

    6 Monitor the progress of the Security Erase Cartridge function.

    7 Click **OK** when the erase function completes.

    8 Reformat the cartridge (see <u>Reformatting Cartridges</u> on page 33).

Checking the GoVault Dock and Cartridge Status

The GoVault application system software keeps operational statistics and current status information about the GoVault dock and cartridges. You can view this information on the **Status** tab of the GoVault **Properties** dialog (see <u>figure 28</u>), as follows:

    1 Right-click the GoVault icon in the Windows **My Computer** or **Explorer** display to view the GoVault system application software menu (see <u>figure 20 on page 35</u>).

    2 Click **Properties** to display the GoVault **Properties** dialog (see <u>figure 21 on page 36</u>).

    3 Click the **Status** tab on the GoVault **Properties** dialog to view the GoVault **Status** display (see <u>figure 28</u>).

Figure 28 GoVault Status
Display
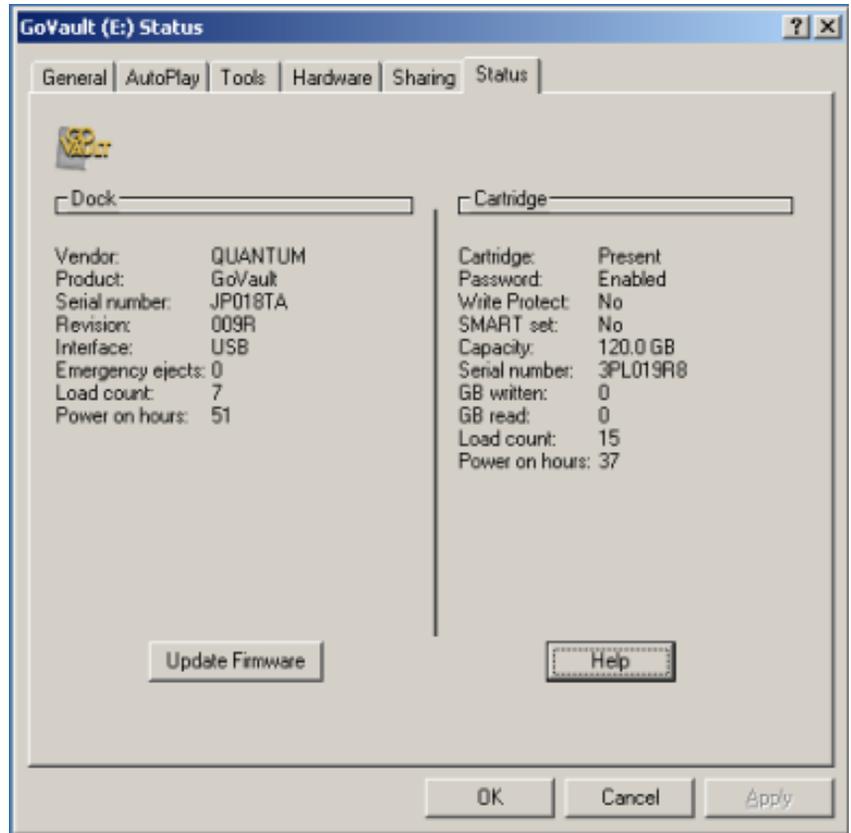
Dock Status

As shown in figure 28, the GoVault system application software displays operational statistics and status information about the GoVault dock on the left side of the display, under the **Dock** heading. The displayed dock information includes:

- The vendor, product name, and serial number of the GoVault dock, as well as the revision level of its firmware and its interface (SATA for the internal dock, USB for the external dock)

- The total number emergency eject and of cartridge load operations that have been performed since the dock was installed

- The total hours of operation for the GoVault dock

For the internal dock (SATA interface), the displayed information also includes:

• The total hours of operation for the fan.

• The operational status of the voltage, temperature, and fan. If there is a problem, the displayed status changes from **Normal** to **Problem** (see Handling Operational Fault Conditions on page 49).

Cartridge Status

As shown in figure 28, the GoVault system application software displays operational statistics and status information about the GoVault cartridges on the right side of the display, under the **Cartridge** heading. The displayed cartridge information includes:

• Whether a cartridge is currently loaded or not:

    • **Present** signifies that there is a cartridge in the dock, and the displayed status information is for the loaded cartridge.

    • **Previous** signifies that there is no cartridge in the dock, and the displayed status information is for the last cartridge that was loaded.

• Whether the cartridge password protection feature is enabled.

• If the cartridge is write protected.

• An indication if the cartridge has detected a Self-Monitoring Analysis Reporting Technology (SMART) threshold fault (see SMART Threshold Detection on page 51).

• The capacity and serial number of the cartridge.

• The total number of Gbytes that have been written to the cartridge and read from the cartridge.

• The total number of times that the cartridge has been loaded into a GoVault dock, and the total operating hours (**Power on hours**) of the cartridge.

Note:	The statistics that are cumulative over the life of the cartridge (Gbytes written/read, load count, and power on hours) are all stored on the cartridge, and will revert to zero as a result of a Security Erase Cartridge operation.

Updating the GoVault Firmware

Check and update the firmware on the GoVault dock as follows:

1 Use the procedure in <u>Checking the GoVault Dock and Cartridge Status</u> to view the GoVault **Status** display (see <u>figure 28</u>).

2 Note the **Revision** level shown for the GoVault dock in the **Dock** column on the **Status** display.

3 To determine the most-recent revision level of the GoVault firmware, use your Internet connection to open the Quantum web page at:

<u>http://www.quantum.com/ServiceandSupport/
SoftwareandDocumentationDownloads/GoVault/Index.aspx#Firmware</u>

4 Compare the most-recent revision of the GoVault firmware on the Quantum website with the version that is installed on your dock:

a If they are the same, then there is no need to proceed with the firmware update procedure.

b If the firmware on the Quantum website is a later version than the firmware installed on your dock, then download the newer firmware file, saving it to a location on your local system startup hard drive. This is usually drive C.

5 Insert a write-enabled cartridge into the GoVault dock.

6 Click **Update Firmware** on the **Status** display to view the **Firmware Update** dialog (see <u>figure 29</u>).

7 Click **Browse for Firmware File** and navigate to the new firmware file you downloaded and saved in step 4-b of this procedure.

8 With the new firmware file displayed in the **Enter Firmware Filename** field, click **Start Update**.

9 As prompted by the **Ready to commence firmware update** message (see <u>figure 30</u>), close all open applications that might try to communicate with the GoVault drive, including:

- Any third-party backup software

- Windows **Explorer**

- **My Computer**

Figure 29 GoVault Firmware
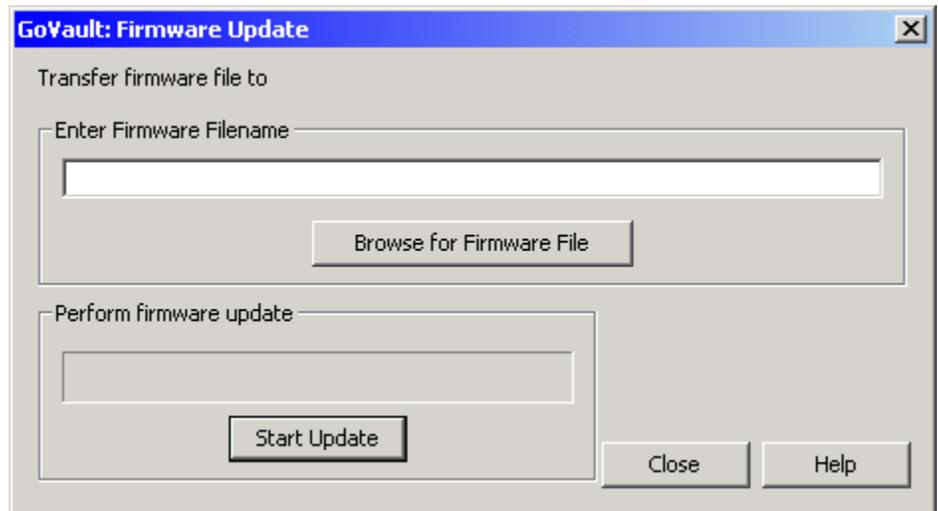Update Dialog

Figure 30 Ready to
Commence Firmware Update
Message

10 Click **OK** to begin the firmware update.

11 When the firmware update operation completes, the GoVault system
application software prompts you to restart the system (see
<u>figure 31</u>).

12 As prompted, click **OK** to restart the workstation or server system.

Figure 31 Firmware Update
Complete Message

GoVault: Firmware Update   ✕

⚠ Firmware update complete.
Please close all applications and click OK to reboot the system now.

OK
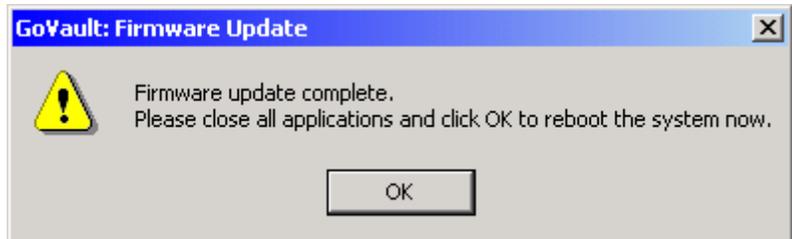
13 To verify that the GoVault dock firmware was successfully updated:

a Right-click the GoVault icon in the Windows **My Computer** or **Explorer** display to view the GoVault system application software menu (see figure 20 on page 35).

b Click **Properties** to display the GoVault **Properties** dialog (see figure 21 on page 36).

c Click the **Status** tab on the GoVault **Properties** dialog to display the GoVault **Status** dialog (see figure 28 on page 45).

d Verify that the **Revision** field displays the updated firmware revision.

Handling Operational Fault Conditions

The following subsections provide guidelines for dealing with GoVault fault conditions, including:

• Abnormal Hardware Conditions, which are:

   • Internal dock voltage problems

   • Internal dock temperature problems

   • Internal dock fan problems

Note: The abnormal hardware conditions apply to the internal GoVault dock. They are neither detected nor reported by the external GoVault Tabletop dock.

• SMART Threshold Detection

Abnormal Hardware Conditions

The GoVault system application software samples three operational aspects of the internal GoVault dock and cartridge disk drive once a minute:

- Voltage
- Temperature
- Fan

When it detects that the internal dock temperature, voltage, or fan operation is abnormal, the GoVault system application software:

- Displays a temperature, voltage, or fan warning message.
- Posts a message in the Windows Application Event log. (Open the Windows Event Viewer to see this message.)

If the hardware condition remains abnormal for two minutes, the GoVault system application software:

- Flashes the activity LED indicator on the internal GoVault dock quickly at approximately four time per second.
- Ejects the cartridge
- Displays a cartridge eject message

If you reinsert a cartridge while the abnormal temperature condition persists, the GoVault system application software will eject the cartridge after one minute.

If the hardware condition persists, the GoVault system application software continues posting messages to the Windows Application Event log at five-minute intervals.

When the hardware condition returns to normal and remains there for five minutes, the GoVault system application software:

- Posts a message to the Windows Application Event log indicating that the hardware operation has returned to normal
- Displays a message that the abnormal hardware condition has cleared

Table 2 lists the steps you should take to resolve abnormal hardware conditions.

Table 2   Resolving Abnormal
Hardware Conditions

| IF a . . . problem occurs,	THEN . . .
voltage	shut down the computer and contact the computer manufacturer for instructions and diagnosis.
temperature	check and make sure that the internal GoVault dock fan is operational and the exhaust air flow is not restricted or blocked.
fan	contact Quantum Technical Support for diagnosis instructions.

Note: After the activity LED indicator begins flashing to signify an abnormal hardware condition, it will not return to normal until you shut down and restart the workstation or server system.

SMART Threshold Detection

The GoVault system application software monitors the currently installed cartridge for detection of a Self-Monitoring Analysis and Reporting Technology (SMART) threshold once a minute. When it detects a SMART threshold fault, the GoVault system application software displays a SMART fault warning and:

- Posts a message in the Windows Application Event log

- Updates the GoVault Properties, setting the **SMART set** status to Yes (see)
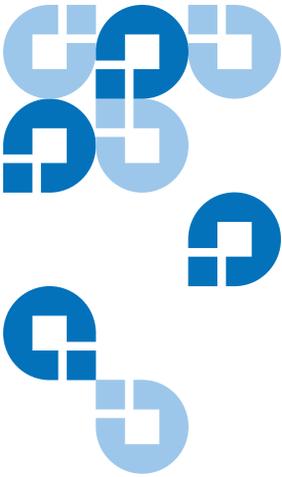
Contact Quantum Technical Support for diagnosis instructions.

This chapter provides GoVault™ for Windows dock and cartridge disk drive technical specifications, including:

-
-
-
-
-
-

Physical Specifications

Table 3 lists the GoVault physical specifications (see figure 32 and figure 33).

Table 3   Physical Specifications

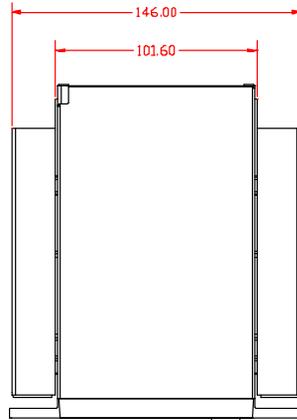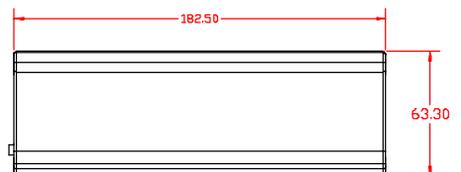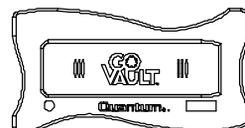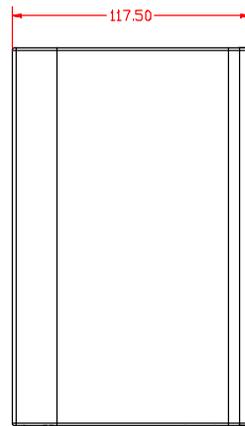| Specification		Value	
Internal Dock		**Bay Installation Configuration**	
		3.5-inch	**5.25-inch**
	Height	41.3 mm (1.63 in.)	41.3 mm (1.63 in.)
	Width	101.6 mm (4.00 in.)	146.0 mm (5.75 in.)
	Length	166.5 mm (6.56 in.)	166.5 mm (6.56 in.)
	Weight	N/A	500 g (17.6 oz.)
Tabletop Dock		**Standing Profile**	
		Side	**Horizontal**
	Height	117.5 mm (4.63 in.)	63.3 mm (2.49 in.)
	Width	63.3 mm (2.49 in.)	117.5 mm (4.63 in.)
	Length	182.5 mm (7.19 in.)	182.5 mm (7.19 in.)
	Weight	907 g (2.00 lb.)	
Cartridge	Height	24.5 mm (1.05 in.)	
	Width	85.0 mm (3.37 in.)	
	Length	112.0 mm (4.40 in.)	
	Weight	158.8 g (5.6 oz.)	

Figure 32 GoVault Internal
Dock Dimensions
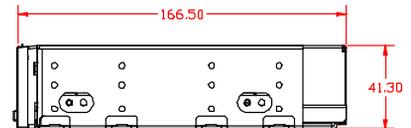
Figure 33 GoVault Tabletop
Dock Dimensions

Power Specifications

The internal GoVault dock is powered by +5 VDC and +12 VDC from the internal power supply of the host workstation or server system.

The external GoVault Tabletop dock is powered by an AC-to-DC power adapter/converter that provides +12 VDC. The power adapter/converter plugs into a standard 115/230 VAC facility power receptacle. A two-meter, 24-AWG cord applies the +12 VDC output to the GoVault dock through a rear panel 2.0-mm surface-mount power jack.

Table 4 lists the power specifications associated with the GoVault docks.

Table 4   Voltage and Current Specifications

Specification		Value	
Internal Dock		**+5 VDC**	**+12 VDC**
	DC voltage tolerance	+5.0 VDC ±5%	+12.0 VDC ±10%
	Non-operating maximum	+5.5 VDC	+28.0 VDC
	Maximum operating current:		
	• Idle	0.8 Amps	N/A
	• Continuous	1.2 Amps	0.3 Amps
	Ripple, peak-to-peak	100 mAmps	100 mAmps

Specification		Value
Tabletop Dock	Input voltage (60 Hz)	115/230 VAC ± 10%
	DC voltage tolerance	+12.0 VDC ± 10%
	Non-operating maximum	+28 VDC
	Maximum operating current:	
	• Idle	0.30 Amps (with cartridge inserted) 0.11 Amps (without cartridge)
	• Continuous	0.50 Amps (with cartridge inserted)
	Ripple, peak-to-peak	100 mAmps

Performance Specifications

Table 5 lists the GoVault performance specifications.

Table 5   Performance Specifications

Specification	Value
Capacity	A function of the installed cartridge: 40, 80, 120, or 160 Gbytes
Data transfer rates	• 26 Mbytes/second, typical • 34 Mbytes/second, maximum/peak
Seek rates:	
• Minimum (1 track)	1.0 msec. read, 1.5 msec. write
• Average	12.5 msec. read, 14.5 msec. write
• Maximum	22 msec. read, 24 msec. write
Latency	5.56 msec., average
Spindle speed	5400 RPM
Start time	3.5 sec.
Stop time, including eject	3.0 sec.

Reliability Specifications

Table 6 lists the GoVault reliability specifications.

Table 6   Reliability
Specifications

Specification	Value
Load/unload cycles	5,000 (dock and cartridge)
Dock service life	5 years at 2.75 load/unload cycles per day
MTBF	Internal dock, 375,000 hours
	Tabletop dock, 300,000 hours
	Cartridge, 330,000 hours
Cartridge archive life	> 10 years
Unrecoverable data rate	1 error in 10^{14}

Environmental Specifications

Table 7 lists the GoVault environmental specifications.

Table 7   Environmental
Specifications

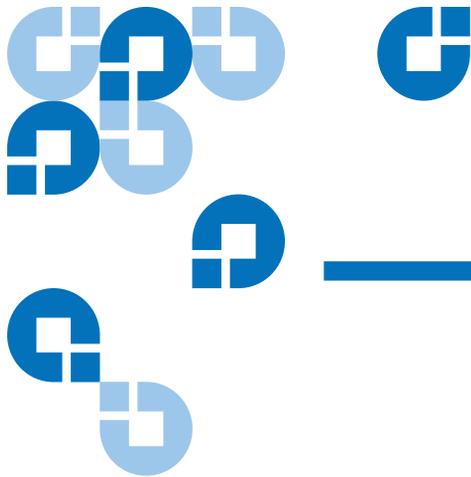| Specification	Value
Temperature:	
• Operating	50° F to 104° F (10° C to 40° C)
• Nonoperating	Dock, –40° F to 140° F (–40°C to 60° C)
	Cartridge, 68° F to 86° F (20° C to 30° C)
Relative humidity:	
• Operating	20% to 80% (noncondensing)
• Nonoperating	Dock, 10% to 95% (noncondensing)
	Cartridge, 20% to 40% (noncondensing)

Interface Compliance Specifications

Table 8 lists the GoVault interface compliance specifications.

Table 8   Interface Compliance Specifications

Interface	Specification Compliances
SCSI-2	• SCSI-2 Small Computer System Interface – 2 (SCSI-2) ANSI/INCITS 131-1994 • SCSI Architecture Model – 2 (SAM-2) ANSI/INCITS 366-2003 • SCSI Primary Commands – 2 (SPC-2) ANSI/INCITS 351-2001 • SCSI Block Commands – 2 (SBC-2) draft standard rev. 16, ANSI/INCITS Project T10/1417-D
SCSI-3	• SCSI Architecture Model – 3 (SAM-3) approved standard ANSI/INCITS Project T10/1561-D • SCSI Primary Commands – 3 (SPC-3) draft standard rev. 23, ANSI/INCITS Project T10/1416-D • SCSI-3 Block Commands (SBC) ANSI/INCITS 306-1998

Interface	Specification Compliances
SATA	• AT Attachment with Packet Interface – 6 (ATAPI-6) ANSI/INCITS 361-2002. • AT Attachment with Packet Interface – 7, Volume 1, Register Delivered Command Set, Logical Register Set (ATAPI-7 V1) draft standard ANSI/INCITS Project T13/1532D • AT Attachment with Packet Interface – 7, Volume 3, Serial Transport Protocols and Physical Interconnect (ATAPI-7 V3) draft standard ANSI/INCITS Project T13/1532D • Serial ATA: High Speed Serialized AT Attachment, Revision 1.0a, Serial ATA Workgroup, 7 January 2003. • Serial ATA 1.0a Errata, Serial ATA Workgroup, December 20, 2004. • Serial ATA II: Extensions to Serial ATA 1.0a, Revision 1.2, Serial ATA Workgroup, 27 August 2004. • Serial ATA II: Extension to Serial ATA 1.0a Errata, Serial ATA Workgroup, January 17, 2005
USB 2.0	• Universal Serial Bus Specification, version 2.0, April 27, 2000

Changing the Bezel

The standard configuration of the internal GoVault™ dock includes side brackets and a 5.25-inch bezel for installation in a 5.25-inch drive bay. If you need to install the dock in a 3.5-inch drive bay, use the procedure in this appendix for removing the side brackets and changing the bezel.

Parts and Tools Required

Make sure you have the following parts and tools before you attempt to change the GoVault 5.25-inch bezel (see figure 34):

- A 3.5-inch GoVault bezel assembly
- A blunt dowel no larger than 0.12 inches in diameter. A wooden or plastic stick is ideal.
- A small Phillips screwdriver
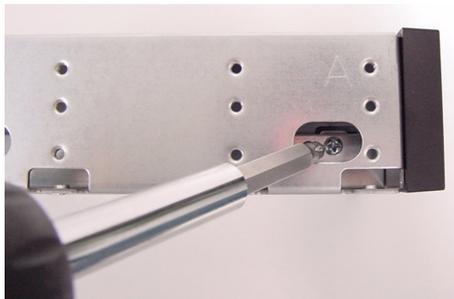
Figure 34 Parts and Tools
Required

Procedure

To change the GoVault bezel:

1 Remove the two screws that attach each side bracket to the GoVault dock (see <u>figure 35</u>).

2 Remove the side brackets store them in a safe place.

Figure 35 Removing the Side
Brackets

3 Carefully insert the dowel into each of the four access holes (two on the upper-front sides, two on the bottom) to release the bezel clips while applying a slight outward force on the bezel (see <u>figure 36</u>).

Figure 36 Releasing the Bezel
Clips
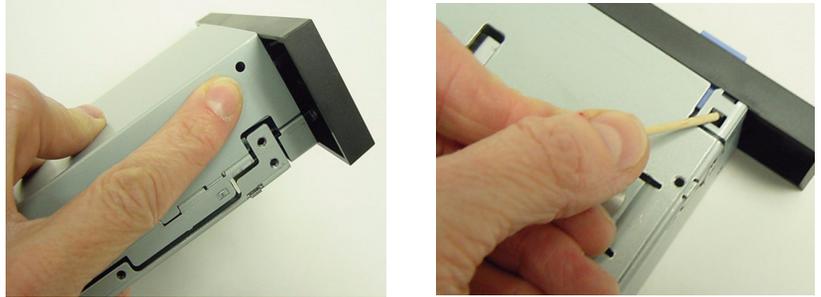
4 Make sure that the bezel release is even across all surfaces, and carefully remove the bezel in a straight, outward motion (see figure 37), and store it in a safe place.

> **Caution:** Do not force the bezel. It should slide off easily.

Figure 37 Removing the 5.25-inch Bezel

5 Set the chassis up-right, and carefully align all four clips of the 3.5-inch bezel with the access holes.

6 Verify that cartridge manual eject button is aligned with the through-hole on the bezel, and carefully push down on the bezel assembly with slow, even pressure across all surfaces until the clips snap the bezel into place (see figure 38).

7 With the 3.5-inch bezel in place, you can now install the GoVault dock in a 3.5-inch drive bay.

Figure 38 Installing the 3.5-inch Bezel
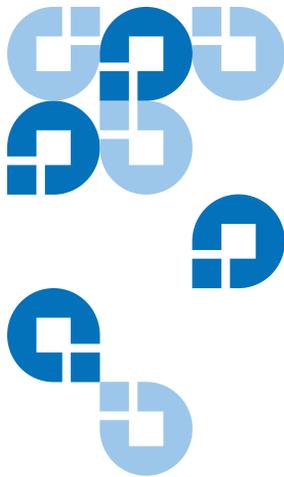
Configuring Windows for DMA Data Transfer Mode

If you are not going to install the GoVault system application software, use the procedures in this appendix to determine the hardware configuration of the motherboard in your workstation or server system and, if necessary, configure the operating system to use the high-speed Direct Memory Access (DMA) mode for GoVault data transfer operations.

About Data Transfer Modes

By default, depending on the hardware configuration of the motherboard in your workstation or server system, if you do not install the GoVault system application software, the Windows operating system might assign the low-speed Programmed I/O (PIO) mode for GoVault data transfer operations. This can happen if all of the following conditions are true for your system:

1 The operating system is a Microsoft Windows environment, which *is* true.

2 The workstation or server system has never had a GoVault installed previously.

3 The GoVault device server is connected to the system by an Intel or an Intel-compliant motherboard with either an Intel or an Intel-compliant ICH5, ICH6, or ICH7 I/O Controller Hub.

To make sure that your system uses the high-speed DMA mode for data transfer operations:

1 First, use the procedure in Determining Your Motherboard Configuration to see if it uses an ICH5, ICH6, or ICH7 I/O Controller Hub.

2 Then, if it does, use the procedure in Changing the Transfer Mode on page 69 to configure high-speed DMA mode for your GoVault data transfer operations.

Determining Your Motherboard Configuration

To find out if the motherboard in your workstation or server system uses an Intel or Intel-compliant ICH5, ICH6, or ICH7 I/O Controller Hub:

1 Open a **Device Manager** window.

2 On the **View** menu, click **Devices by connection** (see figure 39) to display your system devices by connection type.

Figure 39 Device Manager View Menu
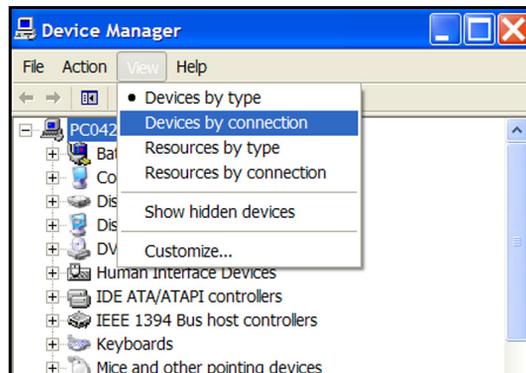
3 Sequentially expand the following device categories, in the order presented, looking for a **QUANTUM GoVault** listing (see):

a   **ACPI Uniprocessor PC or ACPI Multiprocessor PC**

b   **Microsoft ACPI-Compliant System**

c   **PCI Bus**

d   **Intel(R) *XXXXX* Ultra ATA Storage Controllers** or **Intel(R) *XXXXX* Serial ATA Storage Controllers**

e   **Primary IDE Channel**

f   **Secondary IDE Channel**

Figure 40 Devices by Connection Listing
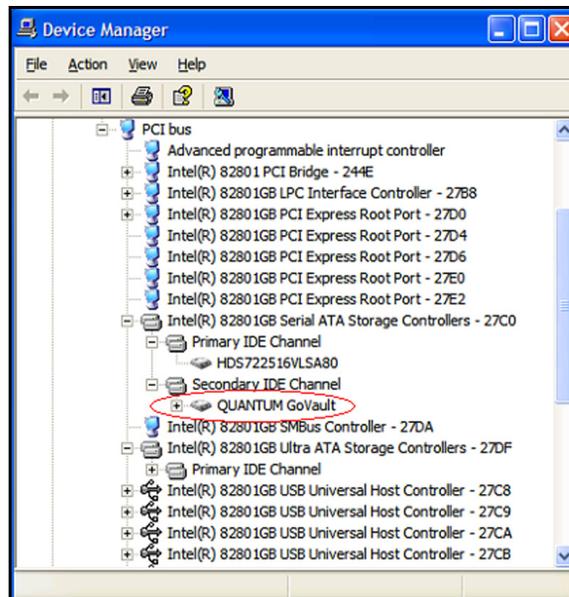
1 If you *do not* see **QUANTUM GoVault** listed as either an **Intel(R) *XXXXX* Serial ATA Storage Controller** or an **Intel(R) *XXXXX* Ultra ATA Storage Controller**, then the GoVault device server is connected to the system by an I/O Controller Hub with DMA already configured as the data transfer mode. In this case you do not have to change the mode. Close the **Device Manager** window and enjoy your GoVault installation.

If you *do* see **QUANTUM GoVault** listed as either an **Intel(R) *XXXXX* Serial ATA Storage Controller** or an **Intel(R) *XXXXX* Ultra ATA Storage Controller**, then it is true that the GoVault device server is connected

to the system by an Intel or an Intel-compliant motherboard with either an Intel or an Intel-compliant ICH5, ICH6, or ICH7 I/O Controller Hub. In this case, PIO is configured as the data transfer mode, and you should use the procedure in Changing the Transfer Mode to configure high-speed DMA mode for your GoVault data transfer operations. Do not close the **Device Manager** window.

Changing the Transfer Mode

If the procedure in Determining Your Motherboard Configuration indicated that PIO is the GoVault data transfer mode, change it to DMA mode as follows:

1 Right-click **QUANTUM GoVault** in the **Device Manager** window and select **Properties** to display the **QUANTUM GoVault Properties** dialog (see figure 41).

Figure 41 GoVault Properties Dialog
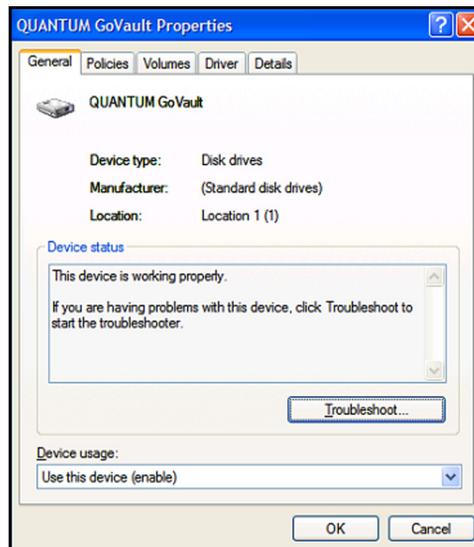
2 Note the indicated **Location:** value, which might show **Location 1 (1)** or **Location 0 (0)** on your workstation or server system. You will need this information later in step 6 of this procedure.

3 Click **OK** to close the **QUANTUM GoVault Properties** dialog.

4 In the **Device Manager** window right click the IDE Channel listing under which QUANTUM GoVault is shown—either the **Primary IDE Channel** or **Secondary IDE Channel**—and select **Properties** to display the appropriate **IDE Channel Properties** dialog.

5 Open the **Advanced Settings** tab to view the device type and mode information for the two channel devices (see <u>figure 42</u>).

Figure 42 IDE Channel Properties Advanced Settings Tab
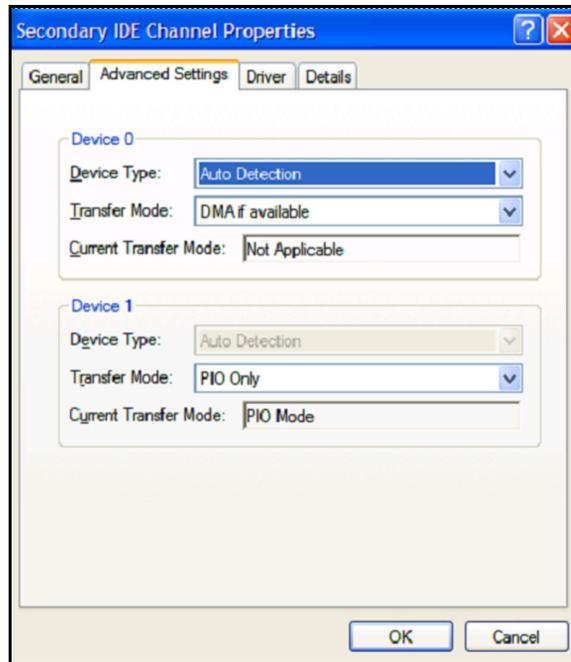
6 Recall the **Location:** value from the **QUANTUM GoVault Properties** dialog that you noted in step 2 of this procedure:

A Location: value of . . .	Means GoVault is attached as . . .
Location 0 (0)	Device 0
Location 1 (1)	Device 1

In the examples shown, GoVault is attached as Device 1 and the Transfer Mode is PIA Only.

**7** To change the transfer mode, select **DMA if available** from the **Transfer Mode** list box (see figure 43).

Figure 43 Changing the Transfer Mode
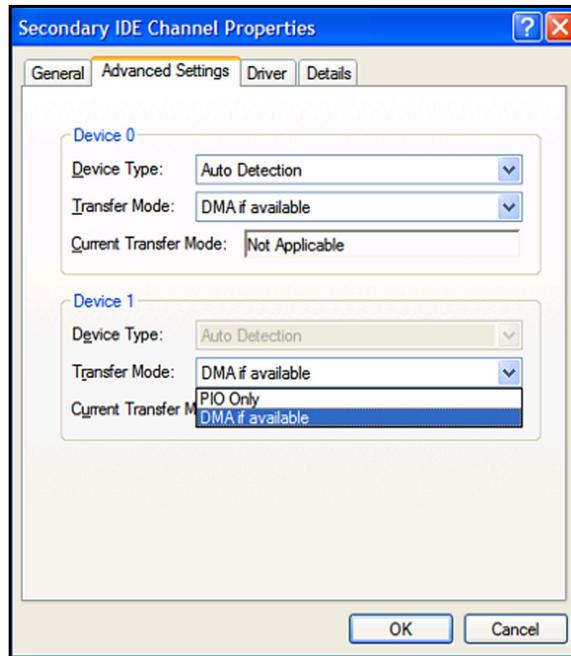
8 Click **OK** to close the **IDE Channel Properties** dialog.

9 To implement the change:

  a Save and close your open files and terminate all running applications.

  b Restart the workstation or server system.

10 When the system restarts, verify that DMA is configured as the GoVault transfer mode (see figure 44) as follows:

  a Repeat steps 1 through 3 of Determining Your Motherboard Configuration on page 67 to find the QUANTUM GoVault listing in **Device Manager**.

b In the **Device Manager** window right-click the IDE Channel listing under which QUANTUM GoVault is shown and select **Properties** to display the appropriate **IDE Channel Properties** dialog.

c Open the **Advanced Settings** tab to verify that DMA is configured as the GoVault transfer mode as shown in figure 42.

Figure 44 DMA Mode
Configured
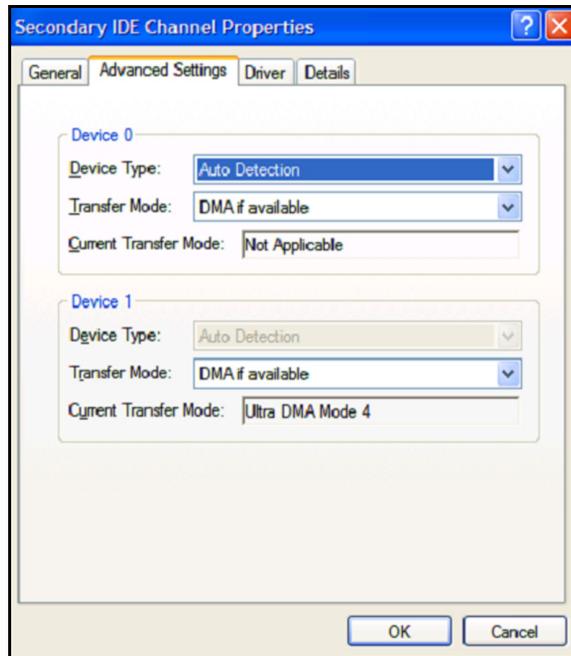
Note:	Windows 2000 might only show **Ultra DMA Mode**. This is not a problem, as GoVault will operate in all UDMA data transfer modes
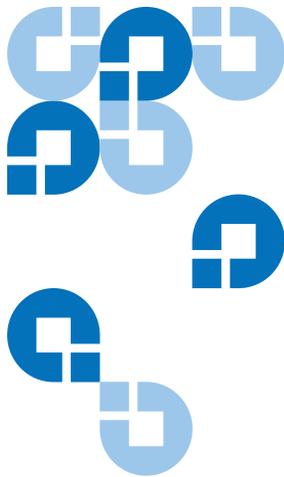
Environmental and Disposal Compliances

Environmental Compliance

Quantum is committed to providing quality products in an environmentally sound manner and to comply with all applicable environmental laws, rules and regulations.

This product was designed, manufactured and made available with consideration to worldwide laws, rules and regulations applicable to the product and the electronics industry including the European Union Directives 2002/95/EC & 2002/96/EC (RoHS and WEEE).

For further information on Quantum's Environmental Compliance and Global Citizenship, please visit our website at:

qcare.quantum.com

Disposal of Electrical and Electronic Equipment
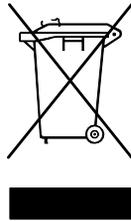
This symbol on the GoVault™ dock or on its packaging indicates that the components should not be disposed of with your other waste materials. Instead, they should be submitted to a designated collection point for the recycling of electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal helps conserve natural resources and ensures that the equipment is recycled in a manner that protects human health and the environment.

For more information about properly disposing of your waste equipment for recycling, please visit our website at qcare.quantum.com or contact your local government authority, your household waste disposal service, or the business from which you purchased the product.
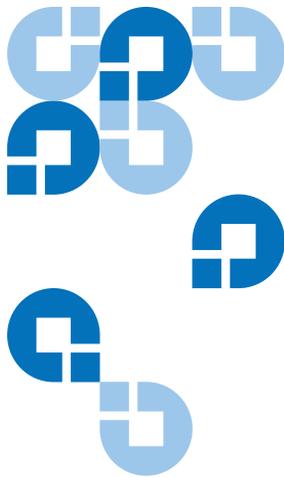
Regulatory Compliances

This appendix identifies the GoVault™ regulatory compliances. The topics include:

- [Safety Standard Compliances](#) on page 76
- [Electromagnetic Compatibility (EMC) Compliances](#) on page 77
- [Regulatory Agency Certifications](#) on page 78

Safety Standard Compliances

GoVault drives comply with the safety standards listed in table 9.

Table 9   Safety Standards

Country	Regulatory Organization	Compliant to:
Canada	Canadian Standards Association (CSA)	UL/CSA 60950-1
EU member nations	Comité Europèen de Normalisation Electrotechnique – the European Committee for Electrotechnical Standardization (CENELEC)	EN 60950-1, 1st edition
Germany	Bauart	EN 60950-1, 2001
IECEE* member nations	IECEE* International Electrotechnical Commission on Electrical Equipment (IECEE) for Mutual Recognition of Test Certificates for Electrical Equipment "CB Scheme"	CB Scheme per IEC 60950-1 with details and exceptions for each member country
Taiwan	BSMI	BSMI certification, CNS 14336
United States	Nationally Recognized Testing Laboratory (NRTL)	UL/CSA 60950-1

* IECEE member nations include: Argentina, Austria, Australia, Belgium, Brazil, Canada, China (PR), Czech Republic, Denmark, Finland, France, Germany, Hungary, India, Ireland, Israel, Italy, Japan, (South) Korea, Montenegro, Netherlands, Norway, Poland, Russian Federation, Serbia, Singapore, Slovakia, Slovenia, South Africa, Spain, Switzerland, Turkey, United Kingdom, and USA.

Electromagnetic Compatibility (EMC) Compliances

GoVault drives comply with the EMC regulations listed in table 10.

Table 10 Electromagnetic
Compatibility (EMC)
Regulations

Country	Regulatory Organization	Compliant to:
Canada	Industry Canada Digital Apparatus - Interference-Causing Equipment Standard (ICES-003)	ICES-003 Digital Apparatus
EU member nations	CE	Emissions per CISPR 22, EN55022 and Immunity per CISPR 24, EN55024
Japan	Voluntary Control Council for Interface (VCCI)	VCCI
South Korea	MIC	CISPR 22 and CISPR 24
Taiwan	Bureau of Commodity Inspection and Quarantine (BSMI)	BSMI EMC certification, CNS 14338
United States	Federal Communications Commission (FCC)	Title 47: Code of Federal Regulations, Part 15, Subpart B (47CFR15B),

Note: Use the internal GoVault dock only in equipment where the combination has been determined to be suitable by an appropriate certification organization (for example, Underwriters Laboratories Inc. or the Canadian Standards Association in North America).

You should also consider the following safety points:

- Install the drive in an enclosure that limits the user's access to live parts, gives adequate system stability and provides the necessary grounding for the drive.

- Provide the correct voltages (+5 VDC and +12 VDC) based on the regulation applied—Extra Low Voltage (SEC) for UL and CSA, and Safety Extra Low Voltage for BSI and VDE (if applicable).

Regulatory Agency Certifications

GoVault is certified by the regulatory agencies and organizations listed in table 11.

Table 11   Regulatory Agencies

Certification	Country	Mart/Cert#	
BSMI	Taiwan	Mark & D33102	Emissions & Safety
cCSAus	Canada & US	Mark & LR56637	Safety
CE	Europe	Mark	Immunity & Emissions & Safety
C-Tick (requires CE report)	Australia	Mark & N1132	Emissions
FCC	US	Mark	Immunity & Emissions
Nemko	Norway	Mark	Safety
VCCI	Japan	Mark	Emissions

* = combined CSA and UL is acceptable under C-UL-US.

Canadian Standards Association (CSA)

GoVault is certified under the CSA's Component Recognition Program (CSA Standard C22.2 NO 950).

International Electrotechnical Commission (IEC)

GoVault is classified for safety standards of the International Standard IEC 950, European Standard EN 60950 by GS and Bauart license.