

User's Guide User's Guide User's Guide User's Guide User's Guide User's Guide User's Guide

# GoVault™ for Linux

# GoVault

GoVault™ for Linux User's Guide, P/N 20013035-002, June 2007  
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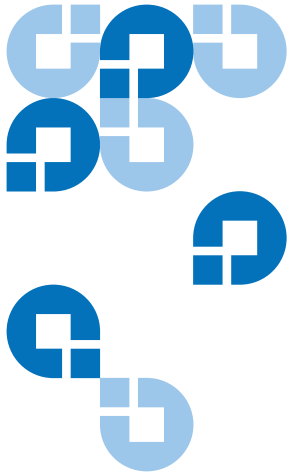
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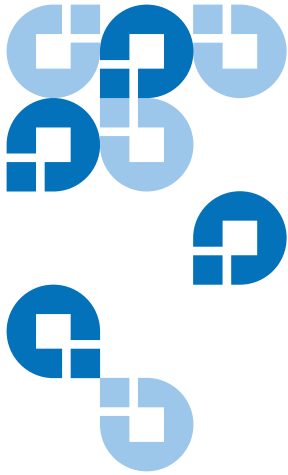
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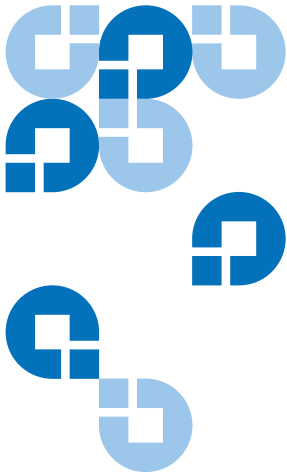
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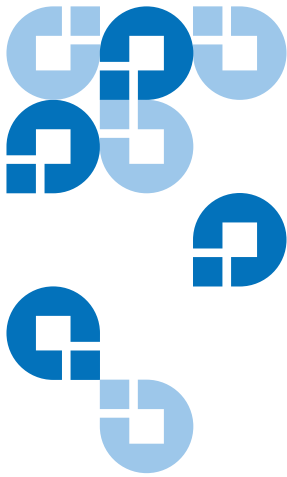


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# Preface

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## Audience

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

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## Purpose

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

- Unpacking and installation instructions
- Basic operating procedures
- Specifications

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## Document Organization

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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, Environmental and Disposal Compliances](#), identifies GoVault environmental compliances and provides instructions for proper disposal of unwanted electrical and electronic equipment.
- [Appendix C, Regulatory Compliances](#), identifies the GoVault compliance with safety and EMC regulations.

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## Notational Conventions

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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.

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## Contacts

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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](http://www.quantum.com)

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### Getting More Information or Help

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More information about this product is available on the Service and Support website at [www.quantum.com/support](http://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:

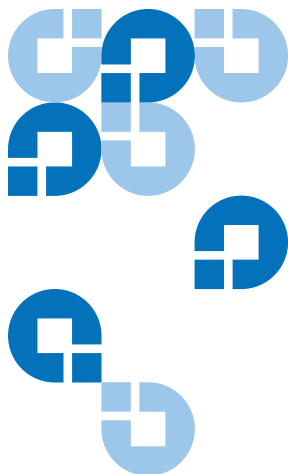
Quantum Technical Assistance Center in the USA: 800-284-5101

For additional contact information: [www.quantum.com/support](http://www.quantum.com/support)

To open a Service Request:: [www.quantum.com/esupport](http://www.quantum.com/esupport)

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## Chapter 1 Introduction

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

- [Overview](#) on page 1
- [Product Description](#) on page 2
- [Operational Features](#) on page 5

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## Overview

The GoVault drive is an easy-to-use, cost-effective, high-performance removable-disk data protection device that has been tested on the following Linux-based workstation and server systems:

- Red Hat Enterprise Linux v3 Update 7 (kernel v2.4.21-40.ELsmp) or greater
- Red Hat Enterprise Linux v4 Update 3 (kernel v2.6.9-34.ELsmp) or greater
- Novell SUSE 10.0 (kernel v2.6.13-15.smp) or greater

GoVault for Linux is fully compatible with both the GNOME and KDE desktop environments, and is ideally suited to high-speed backup applications for small business servers or high-end workstations.

## Product Description

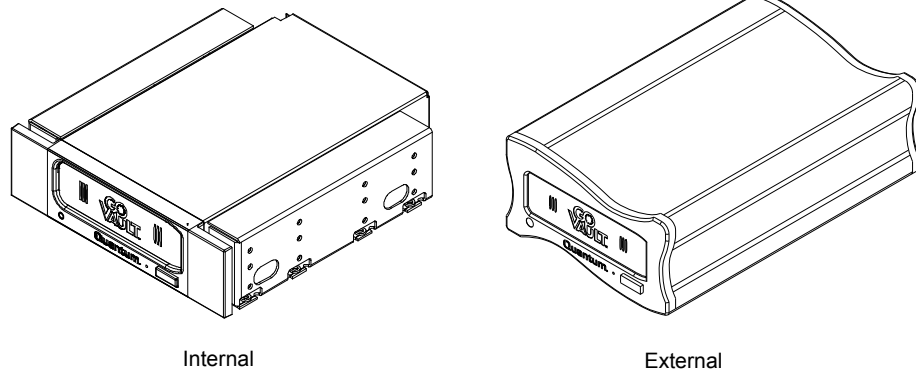
As shown in [figure 1](#), GoVault is available in two models:

- 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
- GoVault system application software
- GoVault firmware

Figure 1 GoVault Docks



## 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	<ul style="list-style-type: none"> <li>• A SATA I/O port for interfacing with the host workstation or server system</li> <li>• A DC power connector that accepts +12 VDC and +5 VDC from the workstation or server system power supply</li> </ul>
external (Tabletop)	<ul style="list-style-type: none"> <li>• A Mini-B type USB port for interfacing with the host workstation or server system</li> <li>• A DC power jack that accepts +12 VDC from a 115/230 VAC power adapter/converter</li> </ul>

## GoVault Cartridges

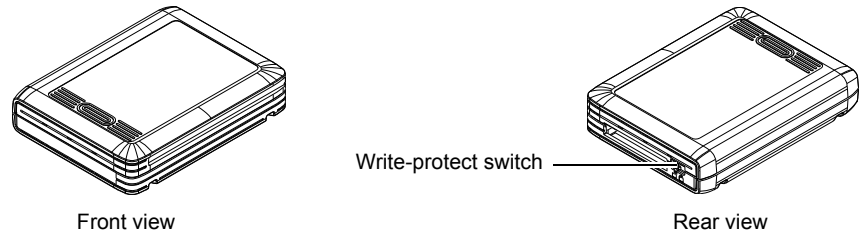
GoVault removable Ruggedized Disk Cartridges (see [figure 2](#)) are currently available in capacities from 40 to 160 Gbytes. The cartridges are all read/write compatible, interchangeable, and can be used with any GoVault dock.

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). Before they can be used in a Linux workstation or server system, each GoVault cartridge must be partitioned and reformatted.

Figure 2 Ruggedized Disk Cartridge



## 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

## 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)

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## Operational Features

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### Drive Properties Context

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GoVault for Linux provides its own operational properties and context support under the Linux operating system. See [chapter 2](#) for information about installing the GoVault system application software, and [chapter 3](#) for information about using GoVault.

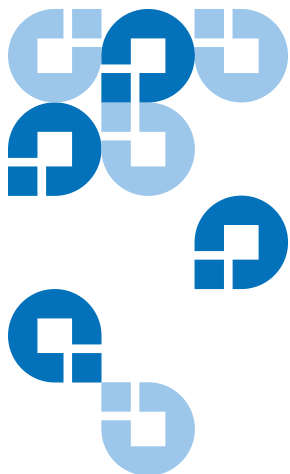
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### Backup Application Interface

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

[www.quantum.com/ServiceandSupport/CompatibilityGuides/Index.aspx](http://www.quantum.com/ServiceandSupport/CompatibilityGuides/Index.aspx)



# Installation Procedures

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

- [System Requirements](#) on page 7
- [Cartridge Handling Precautions](#) on page 8
- [Unpacking and Inspection Procedures](#) on page 8
- [Installing the Internal GoVault Dock](#) on page 9
- [Installing the External GoVault Tabletop Dock](#) on page 14
- [Installing the GoVault System Application Software](#) on page 16
- [Registering GoVault](#) on page 18
- [Uninstalling the GoVault System Application Software](#) on page 19

## System Requirements

Before installing GoVault for Linux, 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
- Recommended software, one of the following operating systems:
  - Red Hat Enterprise Linux v3 Update 7 (kernel v2.4.21-40.ELsmp) or greater
  - Red Hat Enterprise Linux v4 Update 3 (kernel v2.6.9-34.ELsmp) or greater
  - Novell SUSE 10.0 (kernel v2.6.13-15.smp) or greater

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## 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.

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## 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 installation procedures in the order presented:

- [Installing the SATA Card](#), if required
- [Installing the Internal GoVault Dock](#)

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### Installing the SATA Card

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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

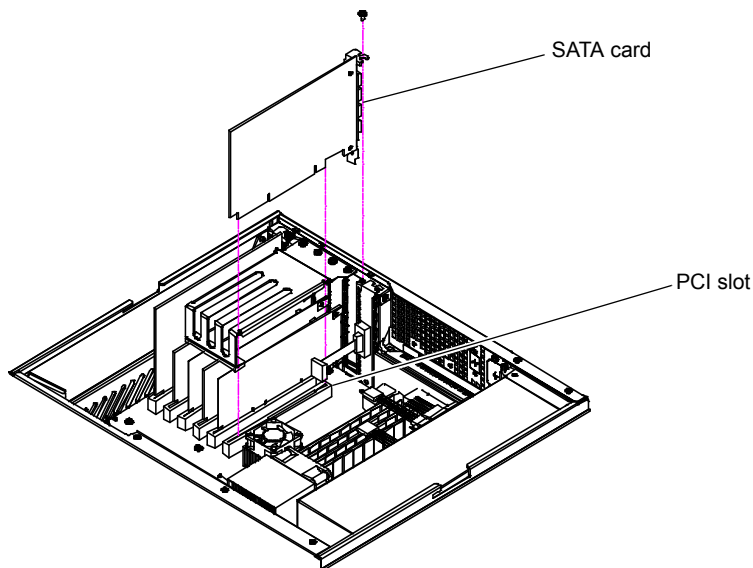
- 1 As required:
  - a Save and close your open files and terminate all running applications.
  - b Shut down the workstation or server system.
  - c Disconnect the AC power cord from the facility AC power receptacle.

- 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



## 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 73 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.

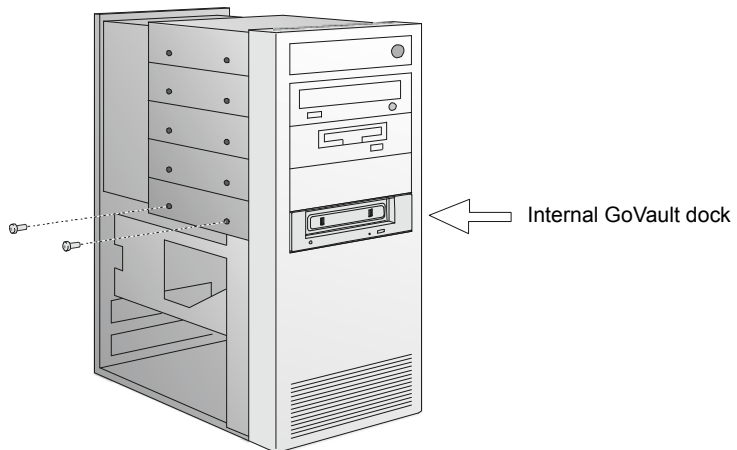
- 2 As required:
  - a Save and close your open files and terminate all running applications.
  - b Shut down the workstation or server system.
  - c Disconnect the AC power cord from the facility AC power receptacle.

- 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](#)).

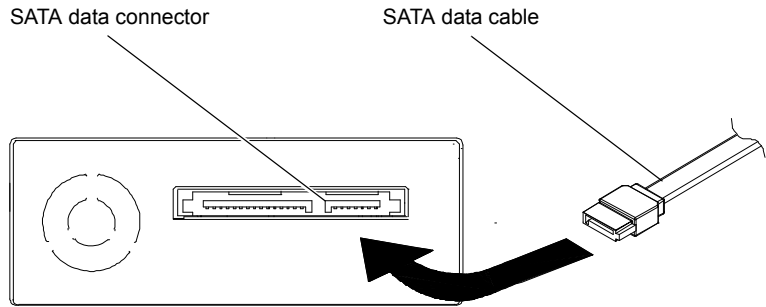
Figure 4 Installing and Securing the Internal GoVault Dock



- 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](#)).

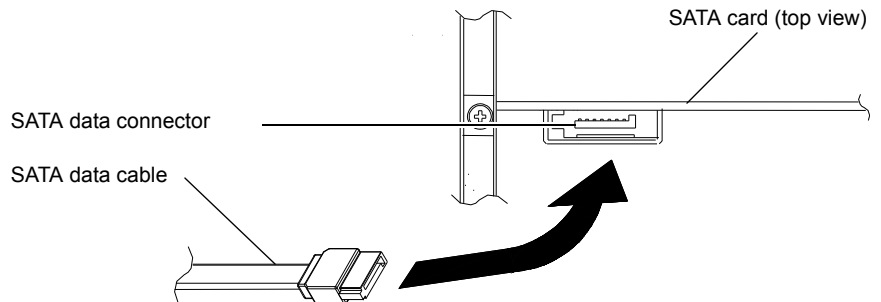
**Caution:** Do not force SATA connections. SATA connectors are designed to fit one way only. If you encounter any difficulty in making the SATA cable connection, rotate the cable and try again.

Figure 5 Connecting the SATA Data Cable to the Dock



- 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](#)).

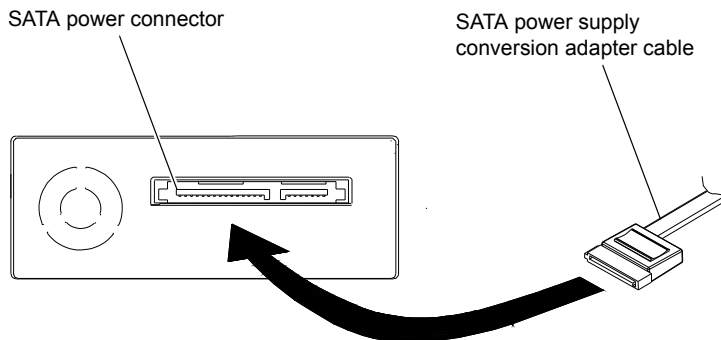
Figure 6 Connecting the SATA Data Cable to the SATA Card



- 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](#)).

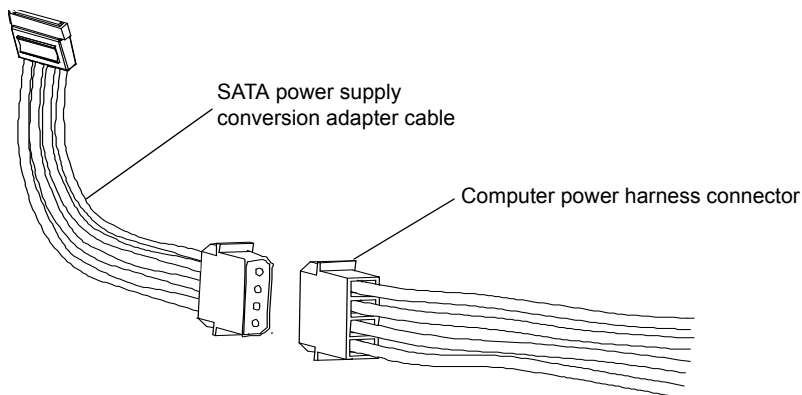


Figure 7 Connecting the SATA Power Cable to the Dock



- 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](#)).

Figure 8 Connecting the SATA Power Cable to the PC



- 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 To verify that the operating system recognizes the GoVault dock:
  - a Open a terminal window.
  - b Use the following command to list the devices on your system:  
**cat /proc/scsi/scsi**
  - c Verify that the listing shows the GoVault dock.

**Note:** If the SG module has been installed, then you can map the GoVault dock path as follows:

**sg\_map -i**

In this case, use the corresponding **/dev/sdx** in place of **/dev/sdb** for all of the procedures in this guide.

- 14 Proceed to [Preparing GoVault Cartridges for Linux Operations](#) on page 29 and complete the following procedures in the order presented:
  - a [Partitioning Cartridges](#) on page 29
  - b [Formatting Cartridges](#) on page 31
  - c [Mounting the Drive File System](#) on page 31
  - d [Browsing GoVault](#) on page 32
- 15 Proceed to [Installing the GoVault System Application Software](#) on page 16.

If you are not going to install the GoVault system application software, then skip to [Registering GoVault](#) on page 18.

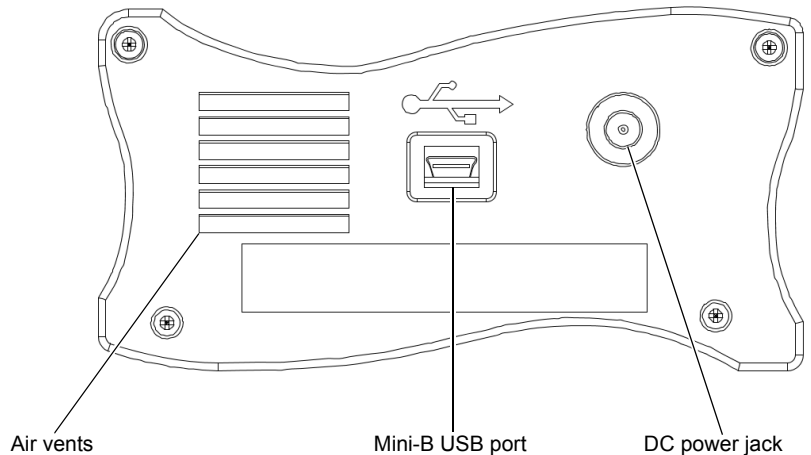
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## Installing the External GoVault Tabletop Dock

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 9](#)).
- 2 Connect the DC power output plug of the power adapter/converter to the DC power jack on the rear panel of the dock.

Figure 9 GoVault Tabletop  
Rear Panel



- 3 Carefully position the dock in a secure location that provides adequate circulation for the rear panel air vent (see [figure 9](#)).
- 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.
- 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 finds and configures the device driver and assigns a device descriptor (example, `/dev/sdb`).
- 6 To verify that the operating system recognizes the GoVault dock:
  - a Open a terminal window.
  - b Use the following command to list all of the devices on your system:

```
cat /proc/scsi/scsi
```
  - c Verify that the listing shows the GoVault dock.

**Note:** If the SG module has been installed, then you can map the GoVault drive path as follows:  
`sg_map -i`  
In this case, use the corresponding `/dev/sdx` in place of `/dev/sdb` for all of the procedures in this guide.

- 7 Proceed to [Preparing GoVault Cartridges for Linux Operations](#) on page 29 and complete the following procedures in the order presented:
  - a [Partitioning Cartridges](#) on page 29
  - b [Formatting Cartridges](#) on page 31
  - c [Mounting the Drive File System](#) on page 31
  - d [Browsing GoVault](#) on page 32
- 8 Proceed to [Installing the GoVault System Application Software](#) in the following subsection.

If you are not going to install the GoVault system application software, then skip to [Registering GoVault](#) on page 18.

---

## Installing the GoVault System Application Software

After installing the GoVault dock and cartridge disk drive and verifying that your operating system recognizes the drive, install the GoVault system application software as follows:

- 1 Log in as root.
- 2 Insert the GoVault Resource CD into the CD-ROM drive.
- 3 Copy the following GoVault system application software files from the CD-ROM drive to a directory named **/root/GoVault**:

**GoVault-x.y.z.i386.rpm**  
**AddPackage**  
**RemovePackage**  
**Readme.txt**

where *x.y.z* is the version number of the GoVault system application software.

- 4 Remove the GoVault Resource CD from the CD-ROM drive.
- 5 Open a terminal window and change directory to:

**/root/GoVault**

6 Execute the following commands:

```
dos2unix ./AddPackage  
dos2unix ./RemovePackage
```

**Note:** Depending on how you typically move files to your Linux workstation or server system (by a USB flash stick or over a network), you might have to add the execute privilege to your Linux batch files. If you typically use a USB flash stick, this step is not necessary. However, if you typically use a network to move the files, add the execute privilege as follows:

- a. Open a terminal window.
- b. Change directory to **/root/GoVault**.
- c. Execute the following commands:

```
chmod a+x AddPackage  
chmod a+x RemovePackage
```

7 Install the GoVault system application software on your system by typing:

```
./AddPackage
```

8 Start the GoVault system application software by typing:

```
StartGoVault
```

9 From the **/root** directory, use a text editor to add the following line at the end of the **.bash\_profile** file:

```
StartGoVault
```

**Note:** For Novell SUSE, the **.bash\_profile** file does not exist. Instead, for SUSE, change directory to **/etc** and edit the **profile.local** file by adding the following line at the end:

```
StartGoVault
```

If the **profile.local** file does not exist, create it before adding the **StartGoVault** line to it.

10 Log out.

- 11 Log in again as root, and verify that the following GoVault icons have been added to your desktop display (see [figure 10](#)):
  - A single yellow **GoVault Control** icon for management and control of all your GoVault drives
  - A black GoVault icon for browsing the installed GoVault drive (**GoVault\_1**)
- 12 To verify successful installation of the GoVault system application software, click/open the **GoVault Control** icon and select **QUANTUM GoVault** to see the Go Vault **Eject**, **Set Password**, **Help**, and **Properties** options on the menu display.
- 13 Proceed to [Registering GoVault](#).

Figure 10 GoVault System Icons



## Registering GoVault

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

[www.quantum.com/registration](http://www.quantum.com/registration)

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

## Uninstalling the GoVault System Application Software

To remove the GoVault system application software:

- 1 Open a terminal window and change directory to:

```
/root/GoVault
```

- 2 Stop the GoVault system application software by typing:

```
StopGoVault
```

- 3 Remove the software by typing:

```
./RemovePackage
```

- 4 Change directory to:

```
/root
```

- 5 Edit **.bash\_profile** by removing the following line at the end of the file:

```
StartGoVault
```

**Note:** For Novell SUSE, the **.bash\_profile** file does not exist. Instead, for SUSE, change directory to **/etc** and edit the **profile.local** file by removing the following line at the end:

```
StartGoVault
```

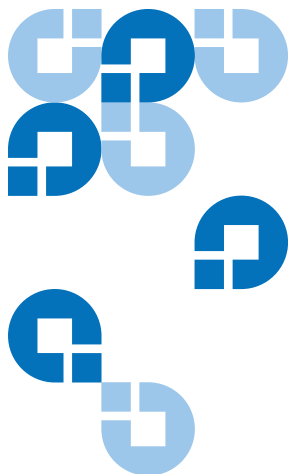
- 6 Use the Linux **rmdir** command to delete the mount point for the installed GoVault drive, for example, as follows:

```
rmdir /root/GoVault_Drives/GoVault_1
```

```
rmdir /root/GoVault_Drives
```

- 7 Change directory to **/etc** and edit the **fstab** file by removing the following line, for example, at the end:

```
/dev/sdb1 /root/GoVault_Drives/GoVault_1 ext3 defaults 0 0
```



## Chapter 3 Operation

---

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

- [Understanding the Activity LED Indicator Display](#) on page 21
- [Inserting and Ejecting Cartridges](#) on page 22
- [Attaching Labels to Cartridges](#) on page 27
- [Write Protecting Cartridges](#) on page 28
- [Preparing GoVault Cartridges for Linux Operations](#) on page 29, which includes:
  - [Partitioning Cartridges](#) on page 29
  - [Formatting Cartridges](#) on page 31
  - [Mounting the Drive File System](#) on page 31
  - [Browsing GoVault](#) on page 32
  - [Unmounting the Drive File System](#) on page 33
- [Accessing GoVault System Application Software Features](#) on page 33, which includes:
  - [Using Cartridge Password Protection](#) on page 35
  - [Checking the GoVault Dock and Cartridge Status](#) on page 43
  - [Updating the GoVault Firmware](#) on page 45
- [Using the Linux Command Line Interface](#) on page 48



- [Choosing a Graphical User Interface](#) on page 59
- [Handling Operational Fault Conditions](#) on page 60

## 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

<b>When the LED . . .</b>	<b>It means that the GoVault dock . . .</b>
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: <ul style="list-style-type: none"><li>• There is no cartridge in the dock.</li><li>• A cartridge load operation has completed and there is a cartridge in the dock.</li></ul>
is flashing on slowly, approximately once per second,	is performing one of the following operations: <ul style="list-style-type: none"><li>• Data transfer</li><li>• Security Erase Cartridge</li></ul> 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.

When the LED . . .	It means that the GoVault dock . . .
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).
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.

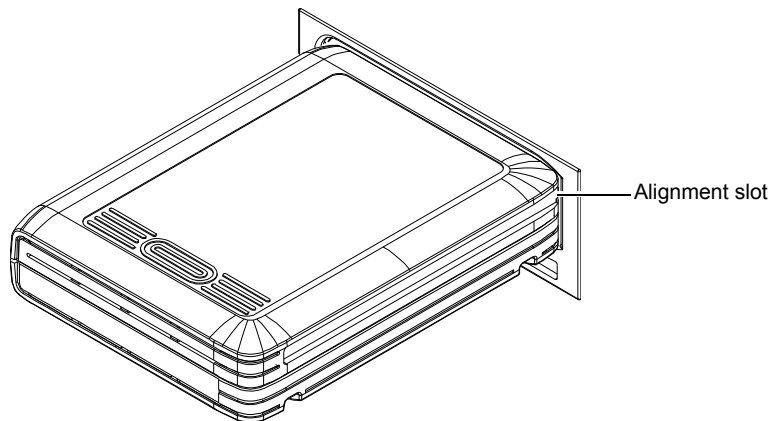
- Carefully slide the cartridge into the GoVault dock until you feel a slight resistance as the cartridge engages the internal mechanical load/eject mechanism (see [figure 11](#)).

**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.

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

Figure 11 Inserting a Cartridge



## 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 Linux 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 front 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 <a href="#">Software Cartridge Eject Procedure</a> 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

If you *have not* installed the GoVault system application software, then use the Linux **eject** command (example: **eject /dev/sdb1**) to eject the GoVault cartridge.

If you *have* installed the GoVault system application software, then use Linux to perform the cartridge eject function as follows:

- 1 Verify that the front 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 Click/open the **GoVault Control** icon on the Linux desktop and select the GoVault device to display its context menu.
- 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.

**Note:** See also the GoVault [eject](#) command description in [Using the Linux Command Line Interface](#) on page 48.

## 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 front 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 Linux **fsck** command (example: **fsck /dev/sdb1**) 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 [Formatting Cartridges](#) on page 31).

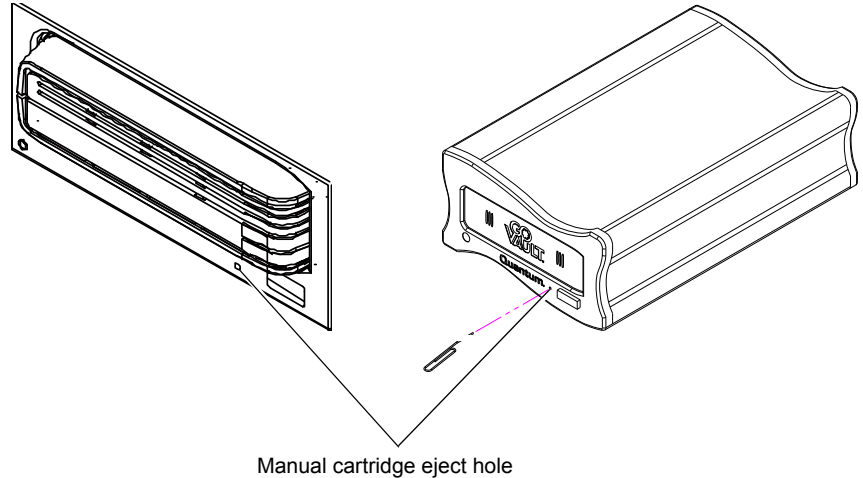
### Manual Cartridge Eject Procedure

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 [figure 12](#)).

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 12 Manual Cartridge  
Eject Hole

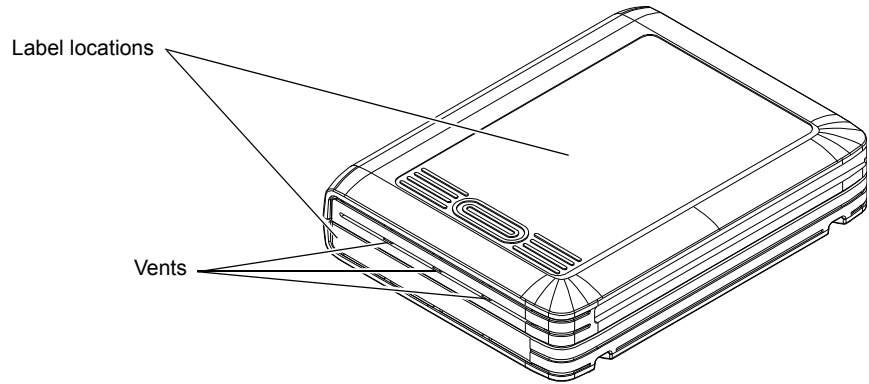


## Attaching Labels to Cartridges

GoVault cartridges have two designated areas for attaching labels – one on the front and one on the top, as shown in [figure 13](#). 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 13 Cartridge Label Locations



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

## Write Protecting Cartridges

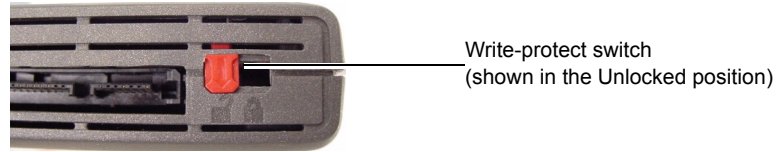
GoVault cartridges have a two-position write-protect switch that enables and disables write access to the disk (see [figure 14](#)):

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.

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



Figure 14 Cartridge Write-Protect Switch



## Preparing GoVault Cartridges for Linux Operations

Use the procedures in the following subsections to prepare GoVault cartridges and mount the drive file system for Linux operations whenever you:

- Install GoVault
- Introduce a new cartridge
- Reformat a cartridge after a Security Erase Cartridge function

### Partitioning Cartridges

New GoVault cartridges are preformatted with the Microsoft New Technology File System (NTFS). Before you can use them in a Linux workstation or server system, you must partition and reformat them for Linux.

To partition a new GoVault cartridge for Linux:

- 1 Insert the cartridge into the GoVault dock (see [Inserting Cartridges](#) on page 22).
- 2 Log in as root.
- 3 Determine the device descriptor for the GoVault drive (example, `/dev/sdb`) by:
  - For Red Hat systems – Viewing the **Disk Drives** entry in the **System Tools/Hardware Browser/Hardware Drives** tool
  - For SUSE systems – Using the YaST utility and selecting **Hardware ==> Hardware Information==> Disk ==> GoVault ==> dev\_names**

- 4 Open a terminal window and, from the root directory, use the Linux **fdisk** command with the appropriate options to create partition **/dev/sdb1**, which is used each time the cartridge is accessed.

For example, if **/dev/sdb** is your device descriptor, type:

```
fdisk /dev/sdb
```

Substitute your own device descriptor for **/dev/sdb** if it is different.

**Note:** If you see the message “Unable to read /dev/sdb,” then manually eject and reinsert the cartridge.

**Note also:** The full syntax of the **fdisk** command is:

```
fdisk [options] [device]
```

where *options* are:

- **m**, to display the main (help) menu.
- **p**, to print the partition table.
- **d**, to delete the four existing partitions.
- **n**, to create a new partition, specifying number 1 to make it a primary partition, and accepting all other defaults.
- **w**, to print a summary, save changes, and exit.

and *device* is the drive device descriptor that you determined in step 3 of this procedure.

- 5 Respond to the prompts as follows:
  - a At the **Command (m for Help):** prompt, type the letter **n** and press **Enter**.
  - b At the partition prompt, type the letter **p** for primary partition and press **Enter**.
  - c At the partition number prompt, type the number **1** and press **Enter**.
  - d At the first cylinder prompt, press **Enter** to accept the default value.

- e At the last cylinder prompt, press **Enter** to accept the default value.
- f Enter **w** to partition the cartridge.
- 6 After partitioning the GoVault cartridge, proceed to [Formatting Cartridges](#) in the following subsection.

---

## Formatting Cartridges

---

After you have partitioned the GoVault cartridge, as described in the preceding subsection ([Partitioning Cartridges](#)):

- 1 From the **/root** directory, use the Linux **mkfs** command with the **-t** option to format the partition with the Linux EXT3 file system:

```
mkfs -t ext3 /dev/sdb1
```

where **/dev/sdb1** is the device partition.

- 2 Proceed to [Mounting the Drive File System](#) in the following subsection.

---

## Mounting the Drive File System

---

After you have partitioned and reformatted the GoVault cartridge, as described in the preceding subsections ([Partitioning Cartridges](#) and [Formatting Cartridges](#)):

- 1 Use the Linux **mkdir** command to create mount points for each GoVault drive. For example, from a terminal window in the root directory, type:

```
mkdir /root/GoVault_Drives
```

```
mkdir /root/GoVault_Drives/GoVault_1
```

- 2 Use the Linux **mount** command with the **-t** option to mount the drive file system on the device:

```
mount -t ext3 /dev/sdb1 /root/GoVault_Drives/GoVault_1
```

where:

**/dev/sdb1** is the device partition

**/GoVault\_1** is the device

- 3 If you want to make the mount automatic, with GoVault visible every time you log on, then change directory to **/etc** and add the following line at the end of the **/etc/fstab** file:

```
/dev/sdb1 /root/GoVault_Drives/GoVault_1 ext3 defaults 0 0
```

where:

**/dev/sdb1** is the device partition

**/GoVault\_1** is the device

Without this line in the **/etc/fstab** file, you will have to manually remount the drive file system each time you restart the system and log on.

- 4 Log out.
- 5 Browse the GoVault cartridge to verify the partition, format, and mount operations, as described in the following subsection.

**Note:** Whenever you eject and reinsert the cartridge, you will have to manually remount the drive file system.

**Note also:** If you perform a Security Erase Cartridge function, the cartridge will be *completely* erased. In this case, you will have to repartition and reformat the cartridge and mount the drive file system again.

---

## Browsing GoVault

---

To verify the GoVault partition, format, and mount operations:

- 1 Log in as root.
- 2 Change directory to **/root/GoVault\_Drives/GoVault\_1**, where **/GoVault\_1** is the device.
- 3 The presence of a *lost-and-found* directory signifies that you are accessing GoVault and you can perform all normal directory functions.

If you do not see a *lost-and-found* directory, then check the drive file system mount.

**Note:** If you have installed the GoVault application system software, then selecting **GoVault\_1** will automatically browse GoVault on the Linux desktop display.

- 4 After mounting the drive file system and browsing GoVault, perform a number of file copy operations to and from the GoVault cartridge to verify the disk write/read functions.

---

### Unmounting the Drive File System

---

Use the Linux **umount** command to unmount the drive file system:

```
umount /dev/sdb1
```

where **/dev/sdb1** is the device descriptor.

From the KDE desktop, you can also unmount the drive file system by selecting/opening the **GoVault Control** icon, selecting the drive, and clicking **Unmount**.

---

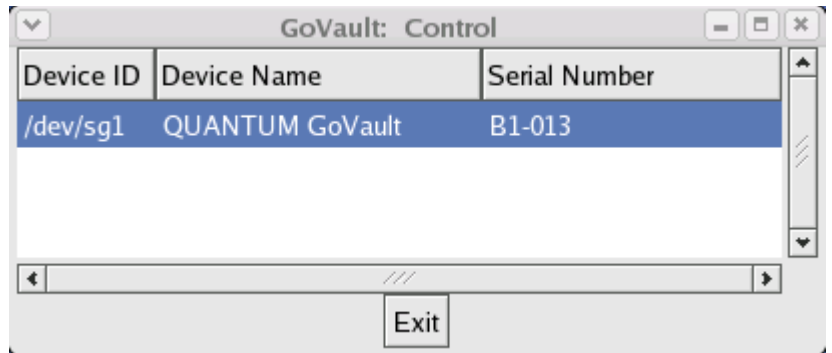
## Accessing GoVault System Application Software Features

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 Click/open the **GoVault Control** icon on the Linux desktop to display the **Control** dialog for all the installed GoVault devices (see [figure 15](#)).

Figure 15 GoVault Control Dialog



- 2 On the **Control** dialog, select the GoVault device that you want to access to display its context menu. Then:

Selecting . . .	Displays . . .
<b>Eject</b>	Nothing, but ejects the cartridge.
<b>Set Password</b>	the GoVault <b>Set Cartridge Password</b> dialog that you can use to configure password protection for cartridges (see <a href="#">Using Cartridge Password Protection</a> in the following subsection).
<b>Help</b>	the GoVault online help file.
<b>Properties</b>	the GoVault <b>Properties</b> dialog that you can use to check the status of the selected dock and cartridge (see <a href="#">Checking the GoVault Dock and Cartridge Status</a> on page 43).

## 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 cartridge 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.

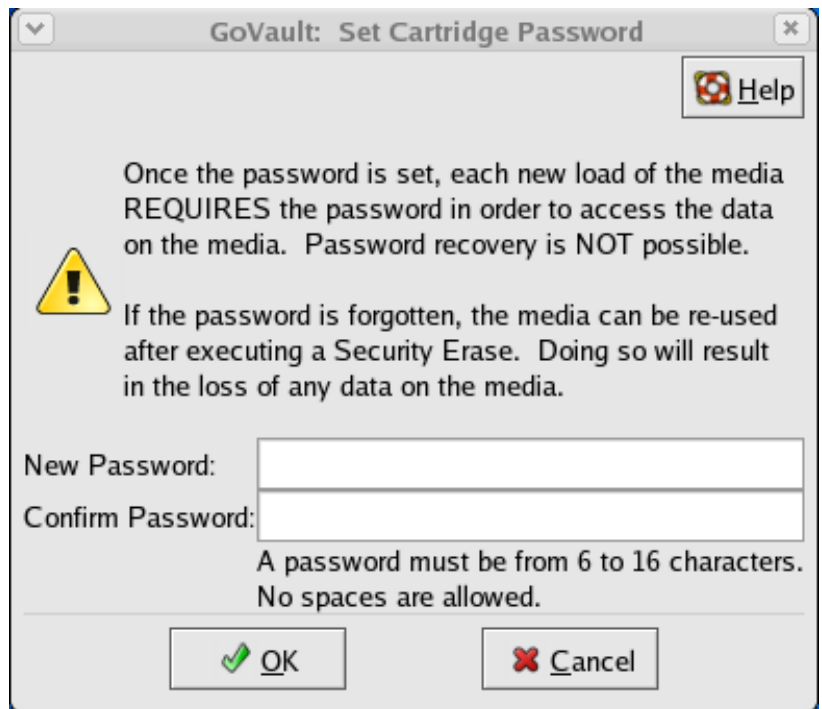
Always record cartridge passwords and store them in a safe, secure location.

## 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 Click/open the **GoVault Control** icon on the Linux desktop to display the GoVault **Control** dialog (see [figure 15](#)).
- 5 Select the GoVault device with the cartridge you want to password protect to display its context menu.
- 6 Click **Set Password** to display the **Set Cartridge Password** dialog (see [figure 16](#)).

Figure 16 Set Cartridge  
Password Dialog





- 7 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.

- 8 Type the password again in the **Confirm Password** text box.
- 9 Click **OK** to assign the password to the GoVault cartridge and close the **Set Cartridge Password** dialog.

**Note:** See also the GoVault [setpasswd](#) command description in [Using the Linux Command Line Interface](#) on page 48.

---

## 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 17](#)).

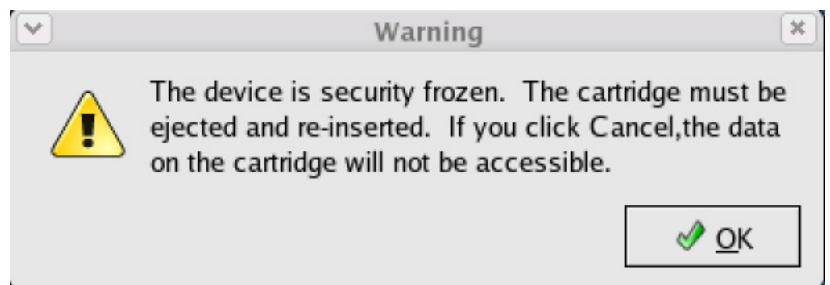
- 1 As prompted, type the cartridge password in the **Password** text box.
- 2 Click **OK** to close the **Enter Cartridge Password** dialog and access the GoVault cartridge.
- 3 If you entered an incorrect password, an error message asks you to try again.
- 4 Click **OK** to redisplay the **Enter Cartridge Password** dialog.
- 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 18](#)).
- 9 Click **OK** and use the [Software Cartridge Eject Procedure](#) on page 25 to eject the cartridge.

- 10 Reinsert the cartridge into the GoVault dock to redisplay the **Enter Cartridge Password** dialog (see [figure 17](#)).

Figure 17 Enter Cartridge Password Dialog



Figure 18 Incorrect Password Eject Message



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

**Note:** See also the GoVault [enterpasswd](#) command description in [Using the Linux Command Line Interface](#) on page 48.

## 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 [figure 17](#) 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 [figure 19](#)).

Figure 19 Change Cartridge Password Dialog



- 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.

**Note:** See also the GoVault [setpasswd](#) command description in [Using the Linux Command Line Interface](#) on page 48.

---

## 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 [figure 17](#) on page 38).
- 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 [figure 19](#)).
- 5 Select the **Remove password protection** checkbox.
- 6 Verify that the **New Password** and **Confirm Password** fields are both blank.
- 7 Click **OK** to remove password protection from the cartridge and close the **Change Cartridge Password** dialog.

**Note:** See also the GoVault [removepasswd](#) command description in [Using the Linux Command Line Interface](#) on page 48.

## 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 repartition and reformat the cartridge and remount the drive file system. 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.

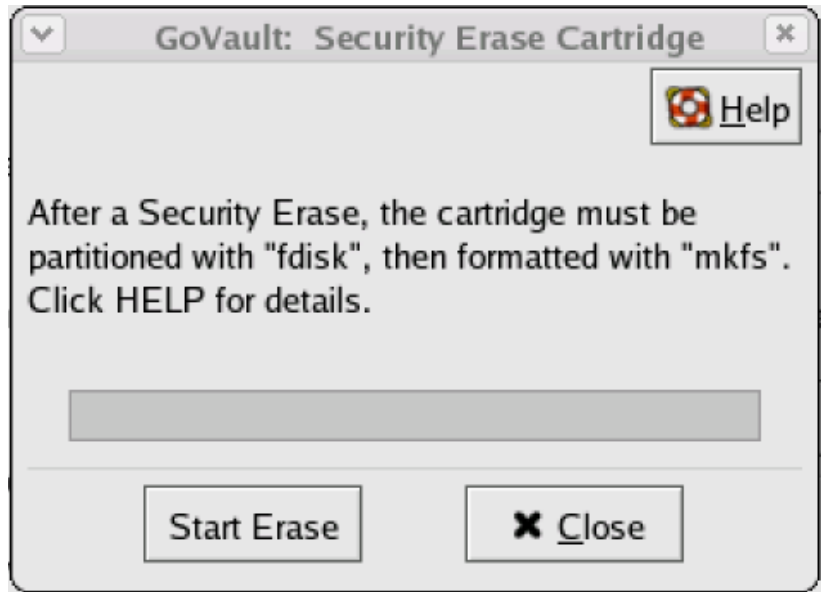
If you cannot access a password-protected cartridge because of a forgotten or lost password, perform the Security Erase Cartridge function as follows:

- 1 Save and close your open files and terminate all running applications, especially:
  - Applications that might try to access the GoVault drive
  - File managers

**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 17](#) on page 38).
- 3 Click the **Security Erase** button to display the **Security Erase Cartridge** dialog (see [figure 20](#)).
- 4 On the **Security Erase Cartridge** dialog:
  - a Click **Close** if you want to quit without erasing any of the data on the cartridge.  
  
You will not be able to click **Close** after you begin the Security Erase Cartridge function.
  - b Click **Start Erase** to display a deleting-all-files warning message.

Figure 20 Security Erase  
Cartridge Dialog



- 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 and click **OK** when it completes.
- 7 Repartition and reformat the cartridge (see [Partitioning Cartridges](#) on page 29).

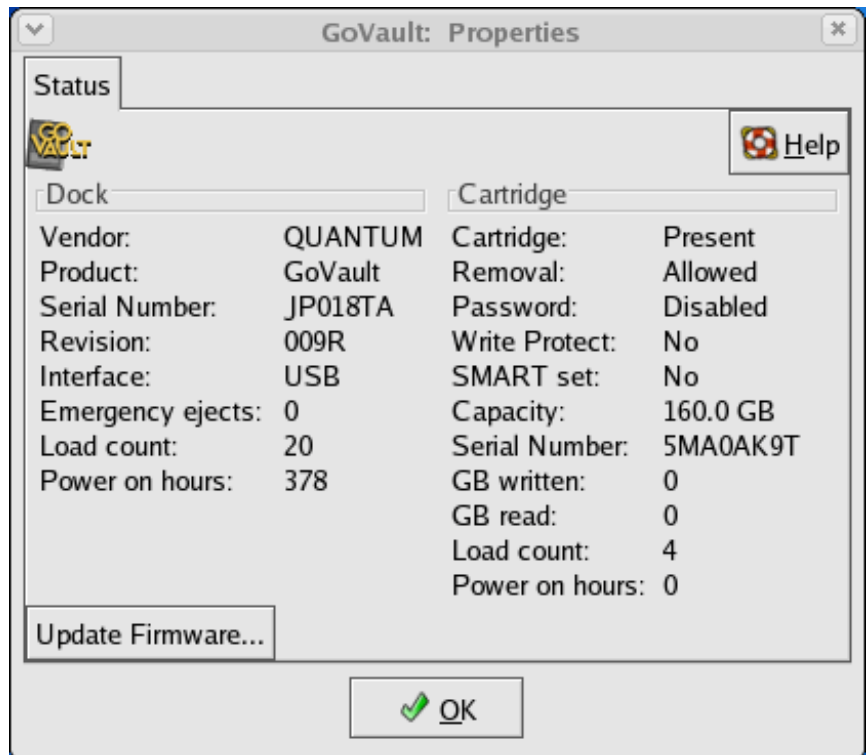
**Note:** See also the GoVault [erase](#) command description in [Using the Linux Command Line Interface](#) on page 48.

## Checking the GoVault Dock and Cartridge Status

The GoVault application system software keeps operational condition and current status information about the GoVault dock and cartridges. You can view this status information on the GoVault **Properties** dialog as follows (see [figure 21](#)):

- 1 Click/open the **GoVault Control** icon on the Linux desktop to view the **Control** dialog for all the installed GoVault devices (see [figure 15](#) on page 34).
- 2 On the **Control** dialog, select the GoVault device that you want to access to display its context menu.

Figure 21 GoVault Properties Display



- 3 Click **Properties** to display the GoVault **Properties** dialog (see [figure 21](#)).

**Note:** See also the GoVault [status](#) command description in [Using the Linux Command Line Interface](#) on page 48.

---

## Dock Status

---

As shown in [figure 21](#), 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 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 60).

---

## Cartridge Status

---

As shown in [figure 21](#), the GoVault system application software displays operational statistics and status information about the GoVault cartridge 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 62).
- 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. They will revert to zero as a result of a Security Erase Cartridge function.

## Updating the GoVault Firmware

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

- 1 Use the procedure in [Checking the GoVault Dock and Cartridge Status](#) to display the GoVault **Properties** dialog (see [figure 21](#)).
- 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:  
<http://www.quantum.com/ServiceandSupport/SoftwareandDocumentationDownloads/GoVault/Index.aspx#Firmware>
- 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.

**Note:** The path and filename for your saved firmware update file cannot have space characters.

- 5 Insert a write-enabled cartridge into the GoVault dock.
- 6 Click **Update Firmware** on the GoVault **Properties** dialog to view the **Firmware Update** dialog (see [figure 22](#)).
- 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**.

Figure 22 Firmware Update Dialog



- 9 As prompted by the **Firmware Update** message (see [figure 23](#)), close all open applications that might try to communicate with the GoVault drive, including any third-party backup software.

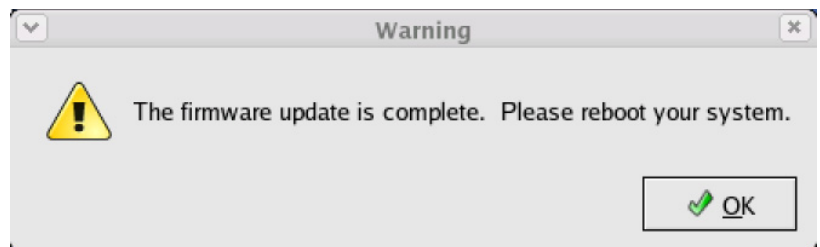
**Note:** After updating the firmware, you will have to restart your workstation or server system for the update to take effect.

Figure 23 Firmware Update Message



- 10 Click **OK** to begin the firmware update.
- 11 When the firmware update operation completes, the GoVault application system software prompts you to restart the system (see [figure 24](#)).

Figure 24 Firmware Update Complete Message



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

- 13** To verify that the GoVault firmware was successfully updated:
- a** Click/open the **GoVault Control** icon on the Linux desktop to view the **Control** dialog for all of the installed GoVault devices (see [figure 15](#) on page 34).
  - b** On the **Control** dialog, select the GoVault device that you want to check to display its context menu.
  - c** Click **Properties** to display GoVault **Properties** dialog (see [figure 21](#) on page 43).
  - d** Verify that the **Revision** field displays the updated firmware revision.

**Note:** See also the GoVault [updatefw](#) command description in [Using the Linux Command Line Interface](#).

---

## Using the Linux Command Line Interface

The GoVault system application software adds an eleven-command extension set to the Linux repertoire. You can enter these commands at the command prompt of a terminal window to perform all of the GoVault system application software functions:

<a href="#">eject</a>	<a href="#">removepasswd</a>
<a href="#">enterpasswd</a>	<a href="#">setpasswd</a>
<a href="#">enumerate</a>	<a href="#">status</a>
<a href="#">erase</a>	<a href="#">updatefw</a>
<a href="#">help</a>	<a href="#">version</a>
<a href="#">properties</a>	

The syntax for each GoVault command is:

**GoVault <command> [-d *DEVICE*] [-l [+]*LOGFILE*] [-v]**

where:

The . . . parameter	Specifies . . .
<b>&lt;command&gt;</b>	The name of the GoVault command.
<b>[-d <i>DEVICE</i>]</b>	A specific device, such as <i>/dev/sg0</i> , for example, specified without quotes.
<b>[-l [+]<i>LOGFILE</i>]</b>	A trace write to a log file (the letter “l” followed by the filename, specified without quotes), with an optional prefix “+” for append.
<b>[-v]</b>	Verbosity, to a level indicated by multiple parameters: <b>-v</b> , <b>-v -v</b> , or <b>-v -v -v</b> .

The following subsections provide a description of each GoVault command.

## eject

<b>Description</b>	Dismounts and ejects a GoVault cartridge.
<b>Syntax</b>	<b>GoVault eject [-d <i>DEVICE</i>] [-l [+]<i>LOGFILE</i>] [-v]</b> Where: <ul style="list-style-type: none"> <li>• <i>DEVICE</i> specifies the GoVault device ID.</li> <li>• <i>LOGFILE</i> specifies the name of a log file.</li> </ul>
<b>Examples</b>	<b>GoVault eject</b> <b>GoVault eject -d /dev/sg1</b> <b>GoVault eject -d /dev/sg1 -l +sg1log.txt</b>
<b>Note</b>	Using the <b>eject</b> command without specifying a device ID would eject the cartridge from the first GoVault device found.

---

**enterpasswd**

---

<b>Description</b>	Unlocks a password-protected GoVault cartridge.
<b>Syntax</b>	<p><b>GoVault enterpasswd <i>PW16</i> [-d <i>DEVICE</i>] [-l [<i>+</i>]<i>LOGFILE</i>] [-v]</b></p> <p>Where:</p> <ul style="list-style-type: none"> <li>• <i>PW16</i> specifies a cartridge password of from 6 to 16 case-sensitive characters with no spaces, symbols, or special characters.</li> <li>• <i>DEVICE</i> specifies the GoVault device ID.</li> <li>• <i>LOGFILE</i> specifies the name of a log file.</li> </ul>
<b>Examples</b>	<p><b>GoVault enterpasswd 123456</b></p> <p><b>GoVault enterpasswd 123456 -d /dev/sg1</b></p> <p><b>GoVault enterpasswd 123456 -d /dev/sg1 -l +sg1log.txt</b></p>
<b>Note</b>	Using the <b>enterpasswd</b> command without specifying a device ID would direct the password to the first GoVault device found.

---



---

**enumerate**

---

<b>Description</b>	Lists the available GoVault devices.
<b>Syntax</b>	<p><b>GoVault enumerate [-d <i>DEVICE</i>] [-I [+]<i>LOGFILE</i>] [-v]</b></p> <p>Where:</p> <ul style="list-style-type: none"> <li>• <i>DEVICE</i> specifies the GoVault device ID.</li> <li>• <i>LOGFILE</i> specifies the name of a log file.</li> <li>• -v adds verbosity at up to three levels: <ul style="list-style-type: none"> <li>• -v lists devices with verbosity level = 1</li> <li>• -v -v lists devices with verbosity level = 2</li> <li>• -v -v -v lists devices with verbosity level = 3</li> </ul> </li> </ul>
<b>Examples</b>	<p><b>GoVault enumerate</b></p> <p><b>GoVault enumerate -v</b></p> <p><b>GoVault enumerate -v -v</b></p> <p><b>GoVault enumerate -v -v -v</b></p>
<b>Note</b>	Using a device ID specification with the <b>enumerate</b> command would list only that device at the specified verbosity level.

---

## erase

---

<b>Description</b>	Performs a Security Erase Cartridge function.
<b>Syntax</b>	<b>GoVault erase</b> [{-x, -y}] [-d <i>DEVICE</i> ] [-l [+] <i>LOGFILE</i> ] [-v] Where: <ul style="list-style-type: none"> <li>• -x stops command execution prior to erasing data.</li> <li>• -y executes the command without stopping.</li> <li>• <i>DEVICE</i> specifies the GoVault device ID.</li> <li>• <i>LOGFILE</i> specifies the name of a log file.</li> </ul>
<b>Examples</b>	<b>GoVault erase</b> <b>GoVault erase -x -d /dev/sg1</b> <b>GoVault erase -y -d /dev/sg1 -l +sg1log.txt</b>
<b>Caution</b>	Using the <b>erase</b> command without specifying a device ID would erase the cartridge in the first GoVault device found.

---

## help

---

<b>Description</b>	Displays the complete “help” listing that describes each command and option in the GoVault command-line interface (see <a href="#">figure 25</a> ).
<b>Syntax</b>	<b>GoVault help</b>
<b>Example</b>	<b>GoVault help</b> <b>GoVault</b>
<b>Note</b>	Entering <b>GoVault</b> , without the <b>help</b> command specification also executes the <b>help</b> command.



Figure 25 GoVault Help  
Command Listing

GoVault -- Device configuration/management utility -- version x.x-x

Usage: GoVault <command> [-d DEVICE] [-I [+]**LOGFILE**] [-v]

Commands:

help	Displays this message.
eject	Dismounts and ejects the cartridge.
enterpasswd [pw16]	Unlocks the cartridge via the user password.
enumerate	Shows the available GoVault devices.
erase [-y]	Erases all data on the cartridge.
properties	Shows the Dock and cartridge properties.
removepasswd	Removes the user password.
setpasswd [PW16]	Sets or changes the user password.
status	Reports the cartridge status:  The cartridge is inserted and ready for use  No medium, please insert the cartridge
updatefw [-x] FILE	Transfers firmware file to the Dock.
version	Displays this program's version.

Options (all commands):

-d DEVICE	Specify device, e.g. /dev/sg0
-I [+] <b>LOGFILE</b>	Write traces in a log file. Prefix with '+' for append
-v	Add verbosity

Arguments:

DEVICE and LOGFILE strings are specified without quotes.

PW16 and FILE strings are also specified without quotes.

PW16 is a password string with 0 through 16 characters.

- x Stop short of executing the operation that commits data.
- y Yes to continue without additional questions.

Examples:

GoVault	display help
GoVault help	display help
GoVault enumerate	list all GoVault devices
GoVault enumerate -v	list devices with verbosity level=1
GoVault enumerate -v -v	list devices with verbosity level=2
GoVault enumerate -v -v -v	list devices with verbosity level=3
GoVault status	view the status of the first device
GoVault properties	view properties of the first device
GoVault properties -d /dev/ sg0	view properties of a specific device
GoVault properties -d /dev/ sg0	view properties of a specific device
GoVault properties -l / GV_prop.txt	view properties with list file
GoVault setpasswd 123456	set the password
GoVault enterpasswd 123456	enter the password
GoVault removepasswd	remove the password
GoVault eject -d /dev/sg1	eject a particular device
GoVault erase -d /dev/sg1	erase a particular device
GoVault updatefw /GV_firm.fw	update the firmware
GoVault version	display the program version

## properties

<b>Description</b>	Displays the complete properties information for the GoVault dock and cartridge (see <a href="#">figure 26</a> ).
<b>Syntax</b>	<b>GoVault properties [-d <i>DEVICE</i>] [-l [+]<i>LOGFILE</i>] [-v]</b> Where: <ul style="list-style-type: none"> <li>• <i>DEVICE</i> specifies the GoVault device ID.</li> <li>• <i>LOGFILE</i> specifies the name of a log file.</li> </ul>
<b>Examples</b>	<b>GoVault properties</b> <b>GoVault properties -d /dev/sg0</b> <b>GoVault properties -d /dev/sg0 -l GV_prop.txt</b>
<b>Note</b>	Using the <b>properties</b> command without specifying a device ID would display the properties of the first GoVault device found.

## removepasswd

<b>Description</b>	Removes password protection from a GoVault cartridge.
<b>Syntax</b>	<b>GoVault removepasswd [-d <i>DEVICE</i>] [-l [+]<i>LOGFILE</i>] [-v]</b> Where: <ul style="list-style-type: none"> <li>• <i>DEVICE</i> specifies the GoVault device ID.</li> <li>• <i>LOGFILE</i> specifies the name of a log file.</li> </ul>
<b>Examples</b>	<b>GoVault removepasswd</b> <b>GoVault removepasswd -d /dev/sg1</b> <b>GoVault removepasswd -d /dev/sg1 -l +sg1log.txt</b>
<b>Note</b>	Using the <b>removepasswd</b> command without specifying a device ID would remove the password from the first password-protected GoVault device found.

Figure 26 GoVault Properties  
Command Listing

```
[root@localhost ~]# GoVault properties
/dev/sg1 "QUANTUM GoVault      " "JP018TA"
Vendor:      QUANTUM
Product:     GoVault
Serial number: JP018TA
Revision:    009R
Interface:   USB
Emergency ejects: 0
Load count:  20
Power on hours: 378
Cartridge:   Present
Removal:     Allowed
Password:    Disabled
Write Protect: No
SMART set:   No
Capacity:    160.0 GB
Serial number: 5MA0AK9T
GB written:  0
GB read:     0
Load count:  4
Power on hours: 0
[root@localhost ~]#
```

**Note:** In the [figure 26](#) listing, the information shown is for the external GoVault Tabletop dock with a USB interface to the workstation or server system. For the internal dock (SATA interface), the listed information includes:

- Fan on hours
- Voltage
- Temperature
- Fan

## setpasswd

<b>Description</b>	Sets or changes the password for a GoVault cartridge.
<b>Syntax</b>	<b>GoVault setpasswd <i>PW16</i> [-d <i>DEVICE</i>] [-l [+]<i>LOGFILE</i>] [-v]</b>  Where: <ul style="list-style-type: none"> <li>• <i>DEVICE</i> specifies the GoVault device ID.</li> <li>• <i>LOGFILE</i> specifies the name of a log file.</li> </ul>
<b>Examples</b>	<b>GoVault setpasswd 123456</b> <b>GoVault setpasswd123456 -d /dev/sg1</b> <b>GoVault setpasswd 123456 -d /dev/sg1 -l +sg1log.txt</b>
<b>Note</b>	Using the <b>setpasswd</b> command without specifying a device ID would set or change the password on the first GoVault device found.

## status

<b>Description</b>	Displays status information for the GoVault dock and cartridge (see <a href="#">figure 27</a> ).
<b>Syntax</b>	<b>GoVault status [-d <i>DEVICE</i>] [-l [+]<i>LOGFILE</i>] [-v]</b>  Where: <ul style="list-style-type: none"> <li>• <i>DEVICE</i> specifies the GoVault device ID.</li> <li>• <i>LOGFILE</i> specifies the name of a log file.</li> </ul>
<b>Examples</b>	<b>GoVault status</b> <b>GoVault status -d /dev/sg0</b> <b>GoVault status -d /dev/sg0 -l GV_stat.txt</b>
<b>Note</b>	Using the <b>status</b> command without specifying a device ID would display the status of the first GoVault device found.

Figure 27 GoVault Status  
Command Listing

```
[root@localhost ~]# GoVault status
/dev/sg1 "QUANTUM GoVault      " "B1-013"
ready
The cartridge is inserted and ready for use.
[root@localhost ~]#
```

## updatefw

<b>Description</b>	Updates the firmware on the GoVault dock.
<b>Syntax</b>	<p><b>GoVault updatefw</b> [{-x, -y}] <i>FILE</i> [-d <i>DEVICE</i>] [-l [+]<i>LOGFILE</i>] [-v]</p> <p>Where:</p> <ul style="list-style-type: none"> <li>• <i>FILE</i> specifies the location (path and filename) of the updated firmware.</li> <li>• <i>DEVICE</i> specifies the GoVault device ID.</li> <li>• <i>LOGFILE</i> specifies the name of a log file.</li> </ul>
<b>Examples</b>	<p><b>GoVault updatefw /GV_firm.fw</b></p> <p><b>GoVault updatefw -x /GV_firm.fw -d /dev/sg1</b></p> <p><b>GoVault updatefw -x /GV_firm.fw -d /dev/sg1 -l +sg1log.txt</b></p>
<b>Note</b>	Using the <b>updatefw</b> command without specifying a device ID would update the firmware of the first GoVault device found.

## version

<b>Description</b>	Displays the version level of the GoVault system application software
<b>Syntax</b>	<b>GoVault version</b>
<b>Example</b>	<b>GoVault version</b>

## Choosing a Graphical User Interface

The GNOME and KDE desktop environments provide an operational “shell” around the GoVault command line interface (CLI) that automatically translates the screen image point-and-click functions into the appropriate CLI commands. Similarly, they translate system command responses into screen image displays.

Of the two, KDE is preferred because GNOME:

- Does not support the drive file system unmount function
- Creates and displays an additional/redundant GoVault icon whenever you have:
  - Partitioned and formatted the GoVault cartridge
  - Mounted the drive file system and made the appropriate entry in the `/etc/fstab` file (see [Mounting the Drive File System](#), step 3 on page 32).

The additional icon is called **39G Removable Media**, where 39 varies according to the cartridge capacity, and it represents the same cartridge as the black **GoVault\_1** icon.

You could temporarily delete the additional/redundant icon by click/opening it and selecting **Move To Trash**, but it will reappear within five minutes as a result of the automatic GoVault enumeration function.

The preferred workaround is to use the KDE desktop environment, which does not have this behavior.

# 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 temperature, voltage, or fan operation is abnormal, the GoVault system application software:

- Displays a warning message
- Posts a message in the Linux system application event log

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 times per second
- Ejects the cartridge
- Displays a cartridge eject message



If you reinsert a cartridge while the abnormal 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 Linux system 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 Linux system 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.

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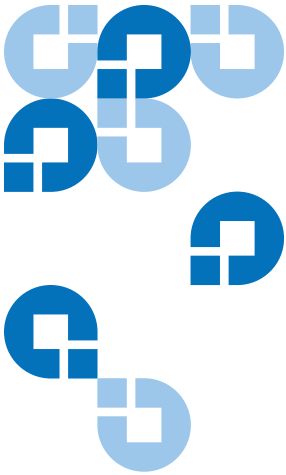
## SMART Threshold Detection

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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 Linux system application event log
- Updates the GoVault Properties, setting the **SMART set** status to Yes

Contact Quantum Technical Support for diagnosis instructions.



## Chapter 4 Specifications

---

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

- [Physical Specifications](#) on page 64
- [Power Specifications](#) on page 66
- [Performance Specifications](#) on page 68
- [Reliability Specifications](#) on page 69
- [Environmental Specifications](#) on page 70
- [Interface Compliance Specifications](#) on page 71

# Physical Specifications

[Table 3](#) lists the GoVault physical specifications (see [figure 28](#) and [figure 29](#)).

Table 3 Physical Specifications

Specification		Value	
<b>Internal Dock</b>		<b>Bay Installation Configuration</b>	
		<b>3.5-inch</b>	<b>5.25-inch</b>
	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.)
<b>Tabletop Dock</b>		<b>Standing Profile</b>	
		<b>Side</b>	<b>Horizontal</b>
	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.)	
<b>Cartridge</b>	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 28 GoVault Internal  
Dock Dimensions

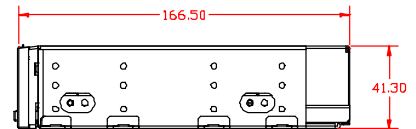
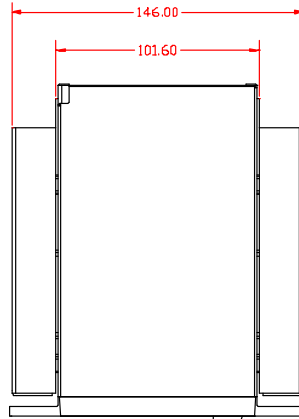
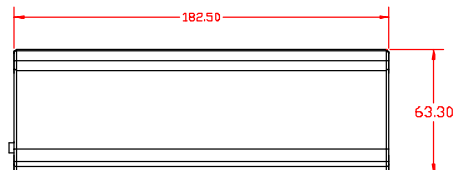
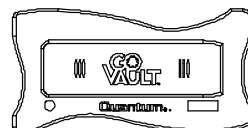
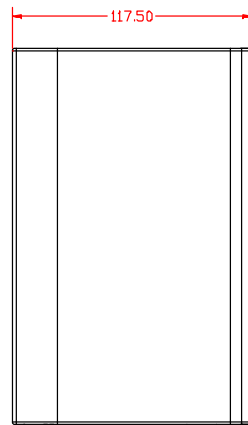


Figure 29 GoVault Tabletop  
Dock Dimensions



## 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	
		+5 VDC	+12 VDC
Internal Dock	DC voltage tolerance	+5.0 VDC $\pm$ 5%	+12.0 VDC $\pm$ 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
<b>Tabletop Dock</b>	Input voltage (60 Hz)	115/230 VAC $\pm$ 10%
	DC voltage tolerance	+12.0 VDC $\pm$ 10%
	Non-operating maximum	+28 VDC
	Maximum operating current:	
	<ul style="list-style-type: none"> <li>• Idle</li> <li>• Continuous</li> </ul>	0.30 Amps (with cartridge inserted) 0.11 Amps (without cartridge) 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	<ul style="list-style-type: none"><li>• 26 Mbytes/second, typical</li><li>• 34 Mbytes/second, maximum/peak</li></ul>
Seek rates: <ul style="list-style-type: none"><li>• Minimum (1 track)</li><li>• Average</li><li>• Maximum</li></ul>	<ul style="list-style-type: none"><li>1.0 msec. read, 1.5 msec. write</li><li>12.5 msec. read, 14.5 msec. write</li><li>22 msec. read, 24 msec. write</li></ul>
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)

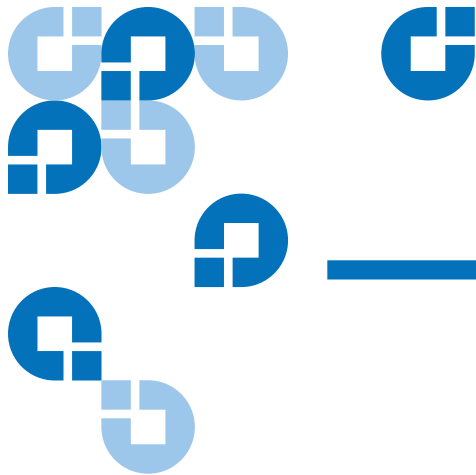
# Interface Compliance Specifications

[Table 8](#) lists the GoVault interface compliance specifications.

Table 8 Interface Compliance Specifications

Interface	Specification Compliances
<b>SCSI-2</b>	<ul style="list-style-type: none"> <li>• SCSI-2 Small Computer System Interface - 2 (SCSI-2) ANSI/INCITS 131-1994</li> <li>• SCSI Architecture Model - 2 (SAM-2) ANSI/INCITS 366-2003</li> <li>• SCSI Primary Commands - 2 (SPC-2) ANSI/INCITS 351-2001</li> <li>• SCSI Block Commands - 2 (SBC-2) draft standard rev. 16, ANSI/INCITS Project T10/1417-D</li> </ul>
<b>SCSI-3</b>	<ul style="list-style-type: none"> <li>• SCSI Architecture Model - 3 (SAM-3) approved standard ANSI/INCITS Project T10/1561-D</li> <li>• SCSI Primary Commands - 3 (SPC-3) draft standard rev. 23, ANSI/INCITS Project T10/1416-D</li> <li>• SCSI-3 Block Commands (SBC) ANSI/INCITS 306-1998</li> </ul>

<b>Interface</b>	<b>Specification Compliances</b>
<b>SATA</b>	<ul style="list-style-type: none"> <li>• AT Attachment with Packet Interface – 6 (ATAPI-6) ANSI/INCITS 361-2002.</li> <li>• 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</li> <li>• AT Attachment with Packet Interface – 7, Volume 3, Serial Transport Protocols and Physical Interconnect (ATAPI-7 V3) draft standard ANSI/INCITS Project T13/1532D</li> <li>• Serial ATA: High Speed Serialized AT Attachment, Revision 1.0a, Serial ATA Workgroup, 7 January 2003.</li> <li>• Serial ATA 1.0a Errata, Serial ATA Workgroup, December 20, 2004.</li> <li>• Serial ATA II: Extensions to Serial ATA 1.0a, Revision 1.2, Serial ATA Workgroup, 27 August 2004.</li> <li>• Serial ATA II: Extension to Serial ATA 1.0a Errata, Serial ATA Workgroup, January 17, 2005</li> </ul>
<b>USB 2.0</b>	<ul style="list-style-type: none"> <li>• Universal Serial Bus Specification, version 2.0, April 27, 2000</li> </ul>



## Appendix A

# Changing the Bezel

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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.

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## 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 30](#)):

- 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 30 Parts and Tools  
Required

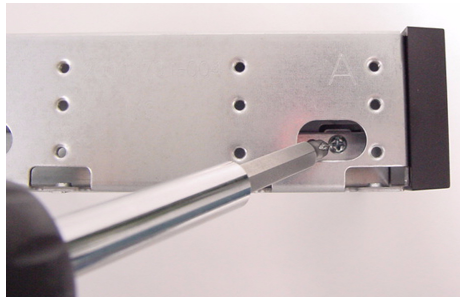


## Procedure

To change the GoVault bezel:

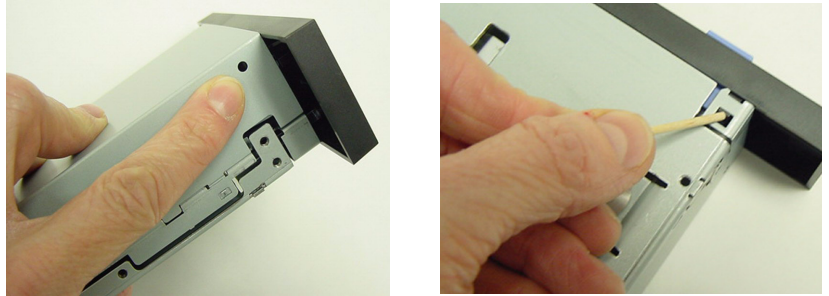
- 1 Remove the two screws that attach each side bracket to the GoVault dock (see [figure 31](#)).
- 2 Remove the side brackets store them in a safe place.

Figure 31 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 [figure 32](#)).

Figure 32 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 33](#)), and store it in a safe place.

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

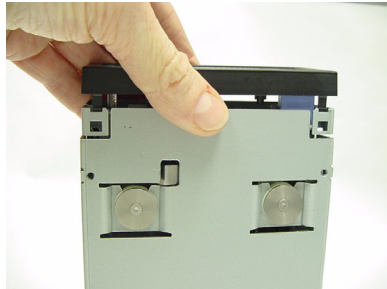
Figure 33 Removing the 5.25-  
inch Bezel



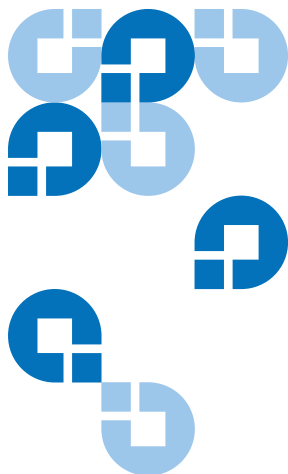
- 5 Set the chassis up-right, and carefully align all four clips of the 3.5-inch bezel with the access holes.
- 6 Verify that cartridge manual eject button is aligned with the through-hole on the bezel, and carefully push down on the bezel assembly with slow, even pressure across all surfaces until the clips snap the bezel into place (see [figure 34](#)).
- 7 With the 3.5-inch bezel in place, you can now install the GoVault dock in a 3.5-inch drive bay.

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Figure 34 Installing the 3.5-inch Bezel







## Environmental and Disposal Compliances

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### Environmental Compliance

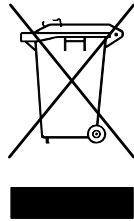
Quantum is committed to providing quality products in an environmentally sound manner and to comply with all applicable environmental laws, rules and regulations.

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:

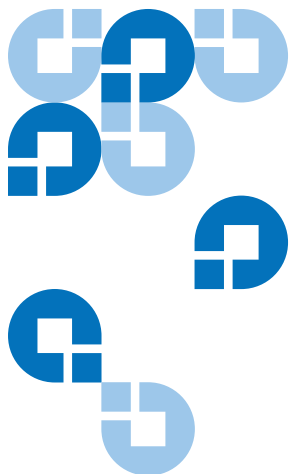
[qcare.quantum.com](http://qcare.quantum.com)

## 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](http://qcare.quantum.com) or contact your local government authority, your household waste disposal service, or the business from which you purchased the product.



Appendix C

## Regulatory Compliances

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

- [Safety Standard Compliances](#) on page 80
- [Electromagnetic Compatibility \(EMC\) Compliances](#) on page 81
- [Regulatory Agency Certifications](#) on page 82

## Safety Standard Compliances

GoVault complies 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 Européen 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 complies 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

<b>Certification</b>	<b>Country</b>	<b>Mark/Cert#</b>	
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.

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**Canadian Standards  
Association (CSA)**

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

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**International  
Electrotechnical  
Commission (IEC)**

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