StorageCare Sage Dashboard and StorageCare Sage Tape Security

Contents

Introduction

StorageCare Sage™ Dashboard provides an at-a-glance view of your tape drive and media health, status, and security settings. A significant feature of the StorageCare Sage Dashboard is StorageCare Sage Tape Security, which allows you to protect data on tape cartridges from unauthorized access. StorageCare Sage Tape Security works with your current backup software because it is managed entirely by StorageCare Sage Dashboard. You can view StorageCare Sage Dashboard using the Windows **Start** button on your PC. Windows users can also view StorageCare Sage Dashboard via the Device Manager.

StorageCare Sage Tape Security works with the following minimum firmware and driver requirements:

Tape Drive	Minimum Firmware Version Needed	Minimum Device Driver Version Needed
DLT-S4	Any	4.0.36
DLT-V4	8.0	4.1.2

Installing StorageCare Sage Dashboard

Follow these instructions to install StorageCare Sage Dashboard:

1 Hook up your tape drive to your PC (see your drive's Product Manual for instructions).

2 Download StorageCare Sage Dashboard for your system as follows:

- **Windows Users:** Install the latest device drivers for your product as follows: Go to www.quantum.com and select **Service and Support > Downloads**, then select your product, then download the latest device drivers. StorageCare Sage Dashboard is bundled with the latest drivers and will install at the same time. Follow the instructions in the Read Me file for specific installation instructions.

- **Symantec Backup Exec and NetBackup Users:** Go to www.quantum.com and select **Service and Support > Downloads,** then select your product, then download **StorageCare Sage Dashboard for Symantec Backup Exec and NetBackup**.

3 Make sure your drive firmware is at least the minimum version required. If it is not, then download the firmware to your PC from the Downloads page on www.quantum.com, then upgrade the firmware on the tape drive.

> **Note:** To upgrade tape drive firmware, you must either create and use a firmware update tape, or use xTalk Management Console to write the firmware image to the tape drive. Download xTalk Management Console from the Downloads page on www.quantum.com.

Using StorageCare Sage Dashboard

StorageCare Sage Dashboard is easy to understand and use. If you need more information, the Getting Help feature provides a detailed explanation.

Opening the Application

Once you have downloaded StorageCare Sage Dashboard, open the application either via the Windows **Start** button or the Device Manager as follows:

Via the Start Button

1 Click your PC's Windows **Start** menu button.

2 Select **Programs > Quantum > Dashboard**.

3 Click either the **Status** tab or the **Tape Security** tab depending on what you want to do.

Via Device Manager (Windows Users Only)

1 Right-click **My Computer.**

2 Select **Manage** from the menu.

3 Select **System Tools > Device Manager > Tape Drives.**

4 Double-click the tape drive you want to view.

The Device Manager opens, displaying Device Manager tabs along with StorageCare Sage Dashboard tabs.

Refreshing the View

You must click the **Refresh** button after each load or unload of a cartridge in order to see the new status and settings.

Getting Help

The embedded **Help** feature explains each screen item for you if needed. Simply right-click any item and click **What's This?** to view a description of the item (see figure 1).

Figure 1 Getting Help

Right-click an item:

Click What's This:
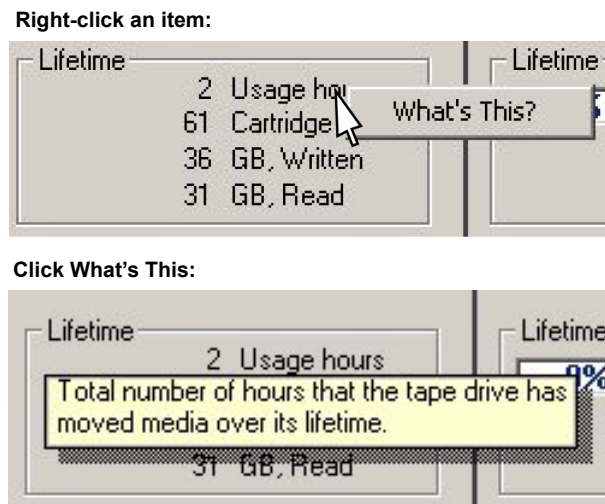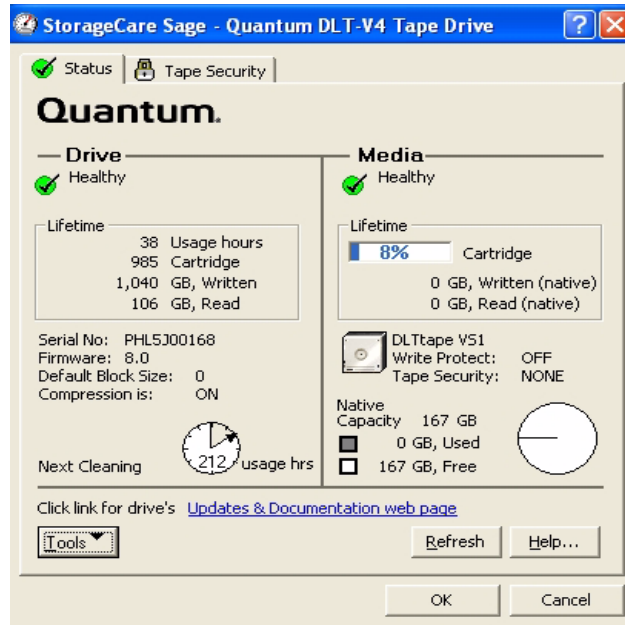
Using the Status Tab

The **Status** tab displays a snapshot of your drive and media's current health, lifetime usage, capacity, and security status. You can see at a glance when your tape drive or cartridge needs repair or cleaning, and get information about what to do if there is a problem (see figure 2).

Figure 2 Status Tab

Viewing Health Status

Drive and media health is shown via the **Health** icons. If the drive or media is not healthy, a short description of the problem is displayed, along with a **More** button. Click the **More** button to find what actions you can take to address the issue.

Viewing Cartridge Wear

Cartridge wear is based on number of load/unload cycles, number of times the tape heads have passed over the same surface on the media, and number of hours the cartridge has spent being read from or written to. The percentage of wear is shown in the Cartridge Wear progress bar. The progress bar turns yellow at 75% and red at 90%. When cartridge wear reaches 100%, the cartridge needs to be replaced.

Viewing Write Protection and Tape Security Status

The Write Protection status tells you if the media is write-protected with the manually adjustable write-protect tab on the cartridge. If the write-protect tab is in the write-protect position, the status shows ON. (See the tape drive product manual for instructions on setting the write-protect tab.)

The Tape Security status tells you if the media is protected with a Secure Key and what the security status is (status shows NONE, LOCKED, or UNLOCKED).

> **Note:** Some backup systems cannot identify Secure Keys. They will indicate that a cartridge is "write protected" if it has a Secure Key, even if the write-protect tab is not set. If you get the "write protected" message, ensure the write-protect tab is disabled; then, if that does not correct the error, check the StorageCare Sage Dashboard Tape Security status.

Improving Backup Performance

If you are running Windows XP and later operating systems, and you are not using Windows native backup utility, Microsoft® Backup Support sends repeated SCSI status requests to the drive, which can degrade backup performance. You can disable Microsoft Backup Support by clicking the **Tools** button and de-selecting **MS-Backup Support**.

> **Note:** If you are running an operating system earlier than Windows XP, then this is not an issue and you cannot disable Microsoft Backup Support.

Using StorageCare Sage Tape Security

StorageCare Sage Tape Security allows you to add an electronic Secure Key to tape cartridges to protect them from unauthorized access. This Secure Key prevents or allows reading and writing of data to a tape cartridge, and is particularly valuable for protecting tapes that are transported offsite, where they could be lost or stolen.

> **Note:** You cannot use Tape Security if the tape cartridge write-protect tab is in the write-protect position. Manually slide the write-protect tab to the disabled position to use Tape Security.

> **Caution:** Make sure you keep track of the Secure Keys you assign. There is no way to retrieve data in the event of a lost Secure Key! The key is encrypted, so you cannot read the key from the cartridge, and you cannot bypass the key to get to the data on the cartridge.

You access StorageCare Sage Tape Security via the **Tape Security** tab on the Dashboard (see). From here, you can:

- Add, change, and remove Secure Keys
- Unlock protected tape cartridges
- Automatically unlock tape cartridges protected with a specified Secure Key
- Automatically add Secure Keys to unprotected tape cartridges

When you add or change a Secure Key, the key is coded onto both the media and the tape drive, where it remains until you change or remove the key.

> **Note:** The Secure Key is also removed from the drive (but not from the media) if you turn off the drive, or if the drive loses power.

Once a Secure Key has been added to a cartridge, the cartridge is "locked" and cannot be read or written to until it is "unlocked." You can unlock the cartridge by entering its

Secure Key. You can also set your tape drive to automatically unlock cartridges with a specified Secure Key (see "Using Auto Unlock" on page 8).

> **Note:** The tape drive remembers only ONE Secure Key: the last one entered (whether it be from adding, unlocking, changing, or removing a Secure Key).

Figure 3 Tape Security Tab
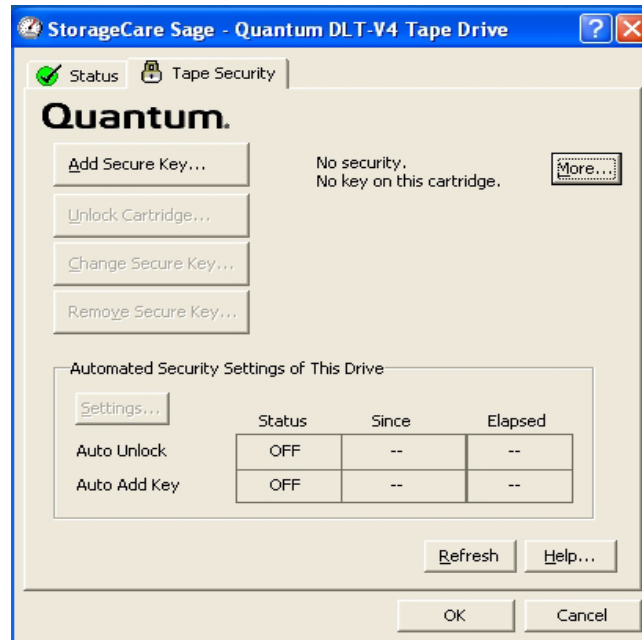
Using Secure Keys

When you load a cartridge in the tape drive, the **Lock** icon on the **Tape Security** tab shows you the status of the cartridge (no security, locked, or unlocked).

Use the buttons on the **Tape Security** tab to add, change, or remove a Secure Key, or to unlock a protected cartridge.

The Secure Key is case-sensitive and may be any combination of letters, numbers, special characters, or hex bytes. It must be at least 8 characters/bytes and no more than 32 characters/bytes in length.

When you add a Secure Key, change a Secure Key, or unlock a cartridge, the following things occur:

• The Secure Key on both the media and the tape drive is reset to the last Secure Key entered.

• Auto Unlock is reset to ON, regardless of whether it was on or off to begin with.

- The Secure Keys used for Auto Unlock and Auto Add Key are reset to the last Secure Key entered. This could cause problems if you are not careful (see Avoiding Problems With Automated Settings).

When you remove a Secure Key, the following things occur:

- The Secure Key is removed from both the media and the tape drive.

- The Secure Keys from both Auto Unlock and Auto Add Key are removed.

- The status of both Auto Unlock and Auto Add Key are set to OFF.

Note: To complete removal of the Secure Key from the media, you must unload the tape cartridge.

Entering the Wrong Secure Key

If you enter the wrong Secure Key when attempting to unlock a cartridge, change a Secure Key, or remove a Secure Key, you get an error message similar to the one shown in figure 4. Click **OK** and try the operation again.

Figure 4 Secure Key Mismatch Error
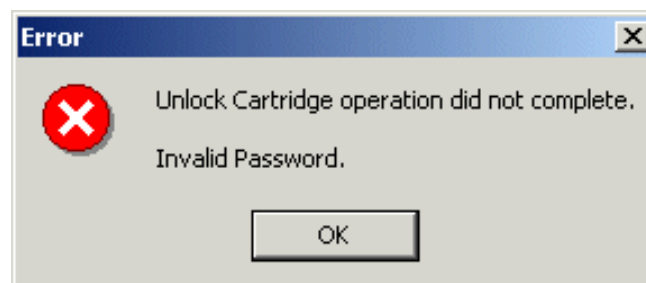
After 32 failed attempts, you get an error message similar to the one shown in figure 5, and you cannot do anything else. You must unload the cartridge from the drive, then reload it, in order to continue.

Figure 5 Error After 32 Failed Attempts
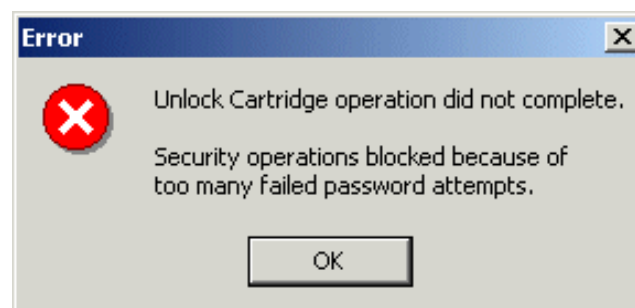
Using Automated Settings

The **Automated Security Settings of This Drive** section of the Tape Security tab shows you if the Auto Unlock and Auto Add Key features are on or off, and allows you to clear all settings and enable Auto Unlock and Auto Add Key. See figure 6 for the **Automated Security Settings** dialog box.

Clearing All Settings

This feature turns the Auto Unlock and Auto Add Key features OFF and removes the Secure Key from the tape drive.

Now, when you insert any cartridge that has a Secure Key, the cartridge will be locked and you will have to unlock it.

To clear all settings:

1 Unload the tape cartridge.

2 Click the **Refresh** button.

3 Click **Settings**.

4 Select the **Clear all settings** radio button (see figure 6).

5 Click **OK**.

Note:	Clear All Settings will also occur if you turn off the tape drive, or if the drive loses power.

Using Auto Unlock

This feature saves you time by automatically unlocking cartridges with a specified Secure Key. The drive compares the Secure Key of a newly inserted cartridge to the Secure Key on the drive. If the Secure Key on the cartridge matches the Secure Key on the drive, the cartridge automatically unlocks and you can read from and write to the media. If the Secure Keys do not match, you must manually unlock the cartridge.

Note:	When you add a Secure Key, unlock a cartridge using a Secure Key, or change a Secure Key, the Auto Unlock feature resets to ON and the newly entered Secure Key becomes the key saved to the drive and used to compare inserted cartridges against. This could cause problems if you are not careful (see Avoiding Problems With Automated Settings).

To turn Auto Unlock ON:

6 Unload the tape cartridge.

7 Click the **Refresh** button.

8 Click **Settings**.

9 Select the **Automatically Unlock cartridges that match this key** radio button (see figure 6).

10 Enter the Secure Key in the **Key** field.

11 Enter the same Secure Key in the **Confirm Key** field.

12 Click **OK**.

Using Auto Add Key

This feature automatically adds a specified Secure Key to any unprotected, writable cartridges as they are loaded in the drive. This feature can be helpful if you want to protect a number of cartridges with same Secure Key.

> **Note:** If Auto Add Key is ON, when you add a Secure Key, unlock a cartridge using a Secure Key, or change a Secure Key, the newly entered Secure Key becomes the key automatically added to unprotected cartridges inserted in the drive. This could cause problems if you are not careful (see Avoiding Problems With Automated Settings).

To turn Auto Add Key ON, follow the procedure for Using Auto Unlock, with the additional step of selecting the final checkbox that states: **Also, automatically Add this key to unprotected, writable cartridges** (see figure 6).

Figure 6 Automated Security Settings Dialog Box

Avoiding Problems With Automated Settings

Because the tape drive can only remember one Secure Key, this means the Secure Key used for the drive, Auto Unlock, and Auto Add Key always resets to the last Secure Key entered. This may cause problems in two potential scenarios:

Scenario #1: Different Secure Keys

You set the Secure Key for Auto Unlock and Auto Add Key to 11111111. This automatically unlocks all cartridges protected with Secure Key 11111111, and adds the Secure Key 11111111 to all unprotected cartridges. Then you load a cartridge that is protected with Secure Key 22222222.

Example A: Now the cartridge and drive Secure Keys do not match and you must unlock the cartridge using Secure Key 22222222. Because the tape drive can only remember the last Secure Key entered, the Secure Key for the drive, Auto Unlock, and Auto Add Key is reset to 22222222. If you then load an unprotected cartridge, the Auto Add Key feature will assign Secure Key 22222222 to the cartridge, not 11111111 as you originally intended.

Example B: Continuing on from Example A, if you then load a cartridge with Secure Key 11111111, it will not automatically unlock because the Secure Key is now 22222222 and no longer matches the Secure Key on the drive.

Solution: Keep track of what Secure Keys are on each cartridge and reset the drive Secure Key as necessary to make sure you are auto-adding the correct Secure Keys to unprotected cartridges.

Scenario #2: Drive Loses Power

Any time the drive is turned off or loses power, both Auto Unlock and Auto Add Key are reset to OFF and the Secure Keys are cleared from the tape drive. If you intend to automatically add Secure Keys to all unprotected cartridges, and you don't realize that Auto Add Key is OFF, you may end up with unprotected cartridges that you thought were protected.

Solution: Make sure you note whether Auto Add Key is ON or OFF, and what Secure Keys are being assigned.

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For assistance contact Quantum Technical Assistance center:

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