COMPAQ
White Paper

Contents

How to Use the Compaq DRTape Solution

Abstract: The Compaq DRTape Solution for tape drives uses a backup disaster recovery tape and firmware that enables the tape drive to emulate a bootable SCSI CD-ROM under disaster recovery situations. The backup disaster recovery tape, made before a failure occurs, contains enough information to bring the system up and needs no other software or CDs to restore the system.

This document explains disaster recovery methods and how these methods are implemented with Compaq servers and tape drives.

Notice

Introduction

A disaster can strike a company's computer system at any time. The server crashes, fails to reboot, or recovers but does not function as expected. A company can lose most or all of its data under these situations unless a disaster recovery (DR) strategy is implemented. If a complete backup has been performed before the failure occurs, then the questions become how long will it take to get the data back, and how long will the system be down.

Conventional disaster recovery methods can take 4 to 10 hours to return a system to the original state. Although the component replacement may only take a few minutes, installing the operating system and restoring the data takes considerably longer. For example, it takes approximately three hours to install the Windows NT 4.0 operating system, and this does not include the time needed to install all of the other applications. Prolonged disaster recovery costs the business in time and revenue.

The Compaq DRTape Solution simplifies the disaster recovery process. If a full backup with DRTape has been completed before a failure occurs, a system can be up and running within one hour. Your company can minimize its losses through the implementation of Compaq DRTape.

DRTape Advantages

The Compaq DRTape Solution provides the following benefits:

- Reduces the number of steps that need to be performed during a disaster recovery process.

- Reduces the time needed for the backup and restore windows.

- Simplifies the disaster recovery process by reducing the number of items (diskettes, CDs, and tapes) to a single tape. This also helps to ensure a successful recovery by eliminating problems associated with damaged or unavailable media.

Using the Compaq Disaster Recovery Process

Compaq developed a solution to save time, money, and resources in the event a system failure occurs. DRTape was developed for use on Compaq servers and tape drives. This method simplifies the process and helps to ensure a successful recovery after a system failure.

Requirements

The Minimum Requirements Matrix in Table 1 displays the current minimum requirements required for utilizing DRTape Solution. If you are using Microsoft Windows NT, you must also install Service Pack 5 or higher.

Note: A "DR Ready" sticker on your tape drive and manual indicates that you have the proper firmware. If you do not have the minimum version or later version, you can download a Softpaq of the most recent version from the supported drive website.

Table 1. Minimum Requirements Matrix

Drive	Firmware Version	VERITAS BackupExec 8.5 Supported Controllers		
		64-bit 2CH Ultra 2 SCSI All 348757-B21	Wide - Ultra SCSI 3 Adap US 272514-001	Embedded SYMBIOS SCSI
AIT 35 GB	4.16	• (1)(3)	• (1)(3)	• (2)
AIT 50 GB	1.30	• (1)(3)	• (1)(3)	• (2)
AIT 35 GB LVD	3.07	• (2)(3)	• (2)(3)	• (2)
DAT 20/40 GB	1.12	• (1)(3)	• (1)(3)	• (2)

1.   Requires SmartStart 4.7 or higher.

2.   Requires SmartStart 4.9 or higher.

3.   Controller must be in Primary PCI slot.

Disaster Recovery Utility

The DRTape Solution includes the following features:

- Compaq-specific firmware that allows the tape device to emulate a bootable SCSI CD-ROM in a disaster recovery mode.

- Vendor-specific software that creates disaster recovery media that includes a mini OS that allows the user to restore the failed system.

- Completely self-contained design that does not require other software or CDs to restore the system during the disaster recovery process.

Preparing for Disaster Recovery

Perform a DRTape backup using a Compaq tape drive and software.

1.   After you install the disaster recovery tape option, the software automatically identifies the tape drive as a DR tape drive and prompts the user to create the bootable image that will be copied onto the media.

2.   Complete the backup process. Write-protect the tape after the backup process completes, and store the tape for future use.

Restoring a System

To restore the system using the backup DR tape:

1. Retrieve the most recent DR tape.

2. Make sure that the DR tape is write-protected. Load the DR tape in the tape drive.

3. When all three LED indicator lights on the front of the tape drive are blinking, power cycle the computer or the tape drive, if the tape drive is an external device, within 15 seconds to place the tape drive into the DR mode.

4. The system is restored completely from the DR tape without the need for CDs, diskettes, or any other media.

Configuring (Triggering) the Autoloader for Disaster Recovery Operation

The autoloading configuration below applies to models TSL9000-DDS3 and TSL10000-DDS4 tape drive autoloaders.

1. Enter LCD Menu Mode by pushing the Select button for approximately 5 seconds. (The LCD Menu Mode can be entered with No Magazine, Magazine Loaded + No Tape in the Drive, or Magazine Loaded + Tape Loaded.)

2. Move the cursor to select DR Mode then push the Enter button. Move the cursor to On then push the Enter button.

3. At this point the loader LCD will display Power Cycle to Enter DR Mode.

4. Cycle the power on the autoloader device.

5. The device will come back up emulating a CD-ROM device. The fourth line of the LCD (usually reserved for Cleaning Request) will flash DR Mode during disaster recovery mode. DR Mode will be displayed as soon as disaster recovery mode is recognized and the loader completes initialization after power-up.

6. Insert the DR Mode tape into the drive using the Select/Enter buttons. Note that the DR Mode tape can be in the drive at the time of power up.

Exiting DR Mode for Autoloaders

If the DR Mode media is physically unloaded from the drive using the Eject button or SCSI Unload command, the loader will return to normal tape mode. The DR Mode indication on the fourth line of the LCD will no longer appear after the media is removed and the loader is "ready" or after the media is ejected.

Disaster Recovery

When using VERITAS Intelligent Disaster Recovery for Microsoft Windows NT and Microsoft Windows 2000, the following disaster recovery wizard screens will display. Follow the on-screen prompts to set up the server to the original configuration that the system was in before the failure occurred.

Creating a Bootable Image

1. Figure 1 shows the welcome screen that displays for the VERITAS Intelligent Disaster Recovery Preparation Wizard. The software assumes that you want to make disaster preparations for the local machine. Clicking the Show me all choices check box lets you select a different server. Click Next to continue.
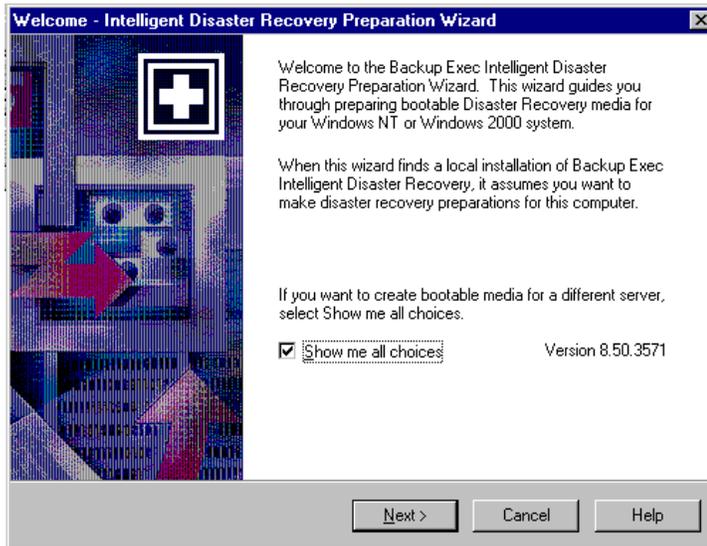
Figure 1: Disaster Recovery Preparation Wizard screen

2. The local machine name will appear as shown in Figure 2. Otherwise, click Browse to select another server. Click Next to continue.
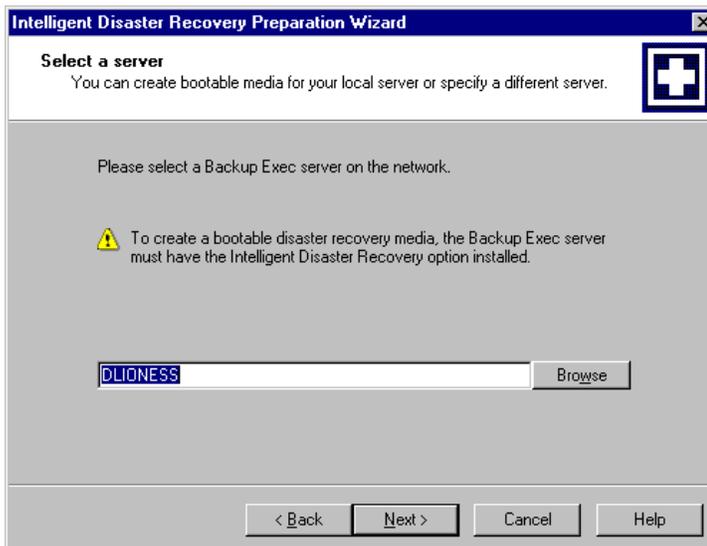
Figure 2: Server selection dialog

3. When a disaster recovery tape drive is detected on the selected server, a dialog box will appear as shown in Figure 3 asking if you wish to create a bootable image. Click Yes to create the bootable image.
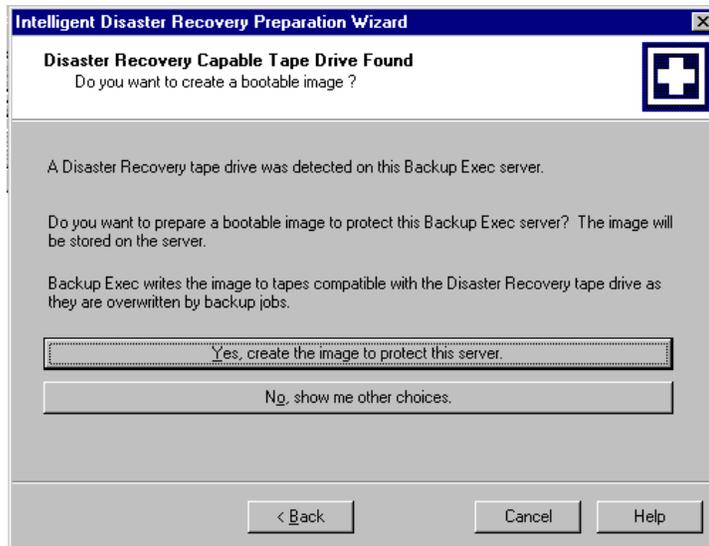
Figure 3: Create bootable image dialog

4. Insert the Microsoft Windows NT/2000 installation CD as instructed in Figure 4, and click Next to continue.
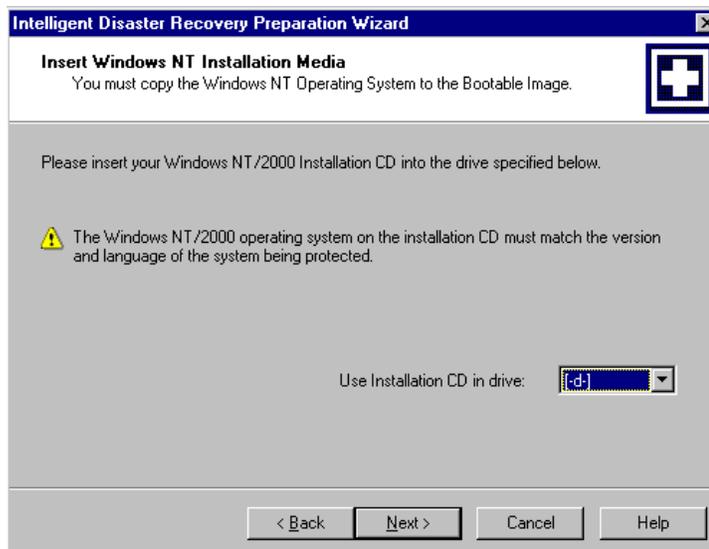
Figure 4: Insert installation CD dialog

5. Figure 5 shows a progress meter which will notify you when the bootable image creation is complete. Click Next to continue.
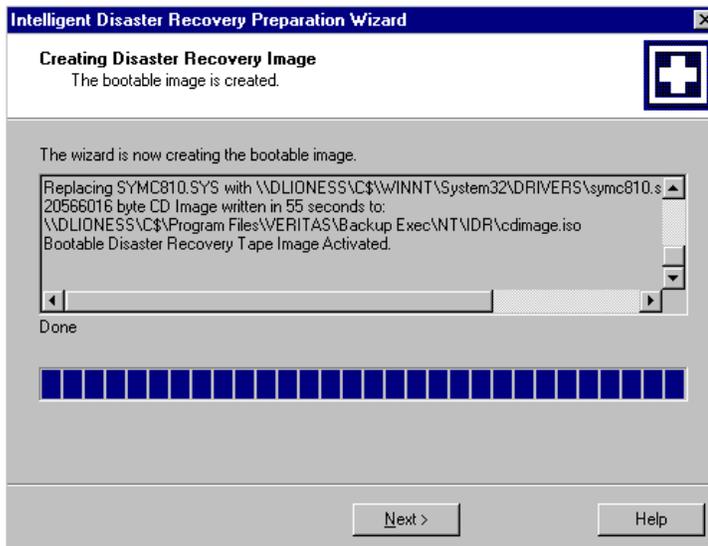
Figure 5: Image creation complete dialog

6. Figure 6 shows the Intelligent Disaster Recovery Preparation Complete screen. This is the last wizard screen in the disaster recovery preparation process. Click Finish to end the disaster recovery preparation process.
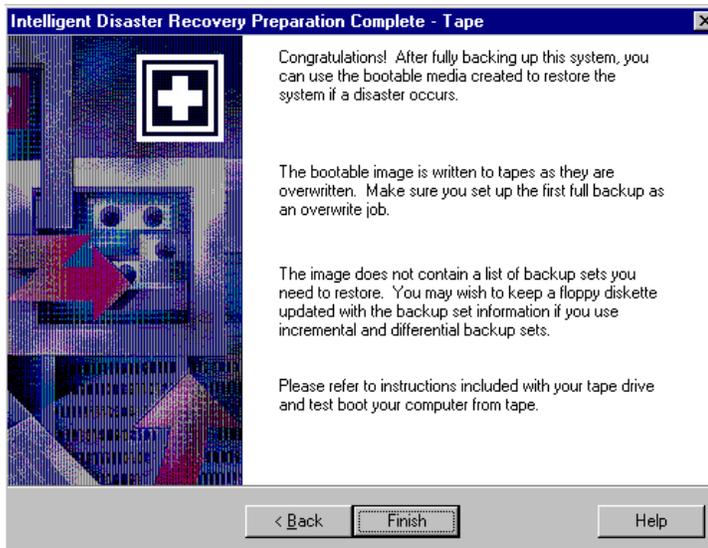
Figure 6: Disaster Recovery Preparation Complete dialog

Backing Up Your System

1. Begin a backup job. Select the hard drive to back up, as shown in Figure 7.
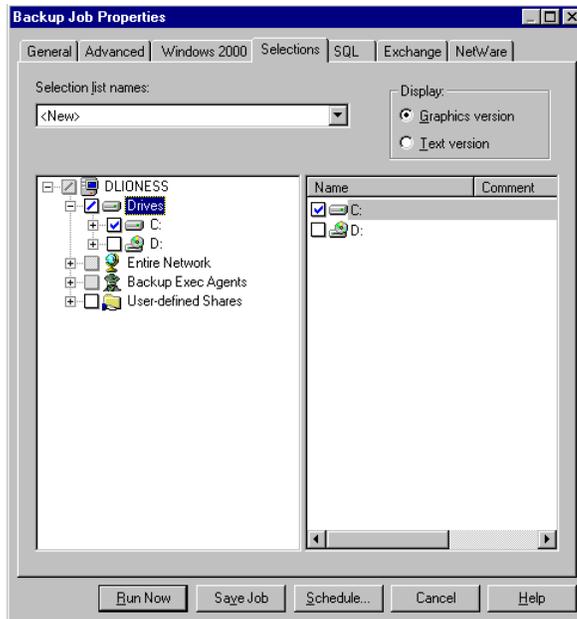
Figure 7: Backup Job Properties dialog

2. Ensure that the backup job is set to overwrite media and that the backup method is set to Normal, as shown in Figure 8.
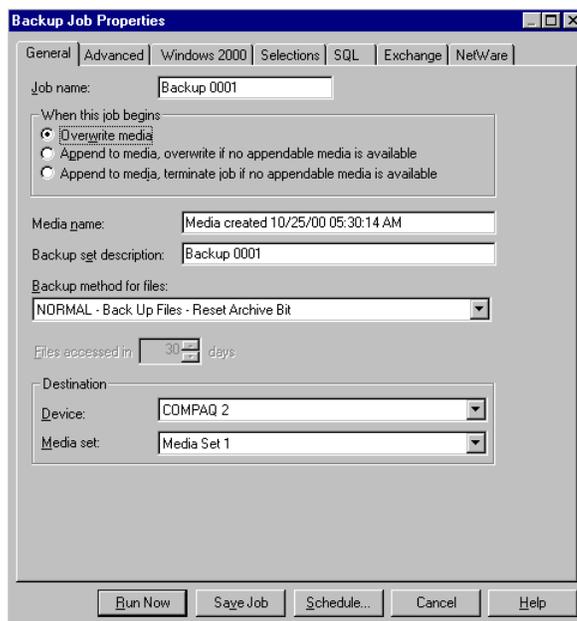
Figure 8: General backup job properties dialog

3. The advanced properties tab enables you to verify the backup, automatically eject the tape, or back up files that are currently open. Click Run Now to begin the backup immediately, or click Schedule to back up the files at a later time, as shown in Figure 9.
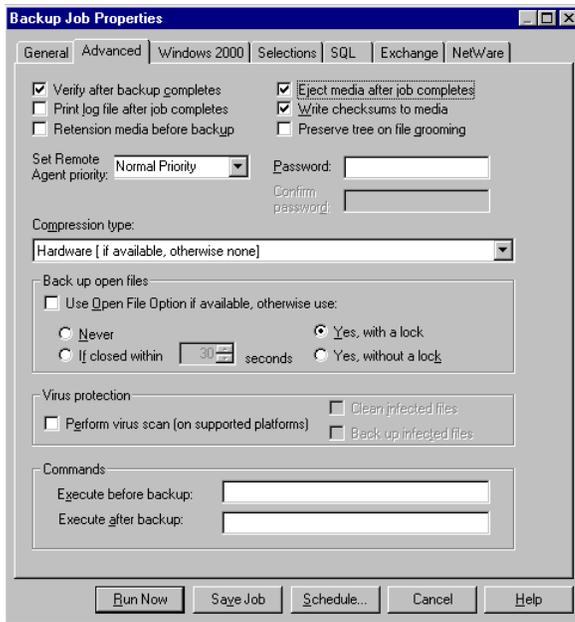
Figure 9: Advanced backup job properties dialog

4. As shown in Figure 10, the Active Job dialog box will display the backup job progress.
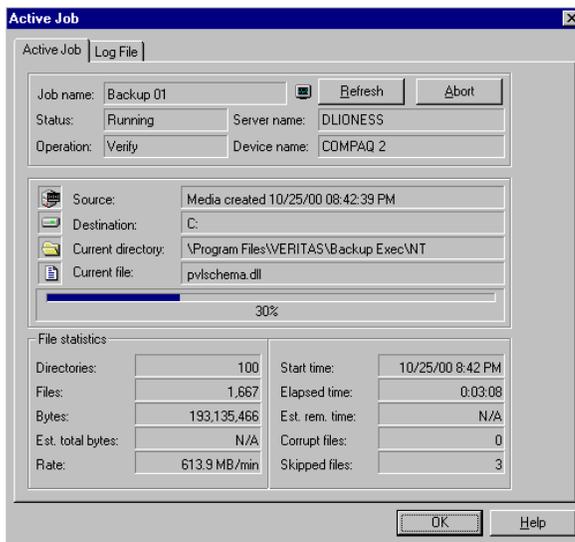
Figure 10: Active Job dialog

Steps to Restoring a System

If you are at the point where your system has crashed, retrieve the DR-enabled tape media. Place the tape drive in DR mode using the techniques in "Restoring a System." In addition, consult vendor-specific help files. Place the drive in DR Mode (both LEDs flashing on stand-alone drives, or DR Mode displaying on autoloader drives), then reboot the system.

1. Figure 11 shows the first screen that displays when you have successfully booted the system from the DR-enabled tape media. A mini OS is now being installed on your system. Follow the screen prompts until you are directed to eject the tape media and reboot the system.
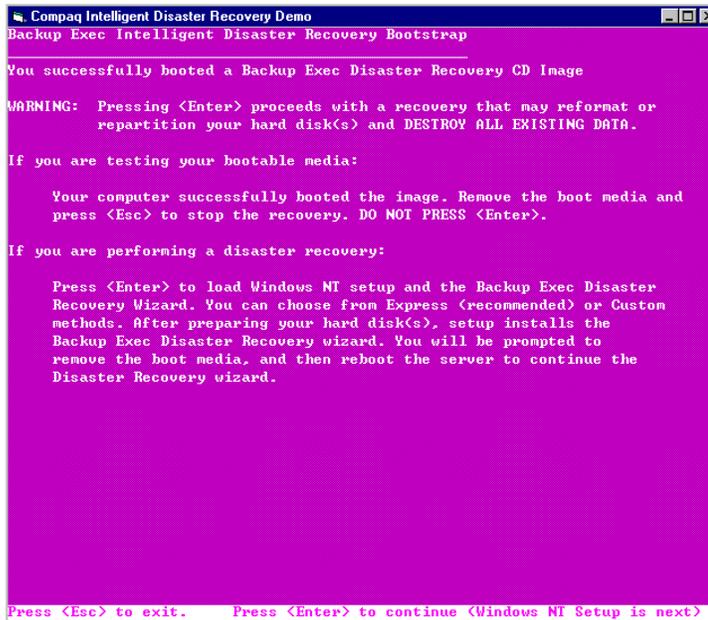
Figure 11: Operating System Loader screen

2. Figure 12 shows the welcome screen that displays for the VERITAS Intelligent Disaster Recovery software. At this time in the disaster recovery process, the tape drive is no longer seen as a CD-ROM but as a tape drive again. Click Next to continue.
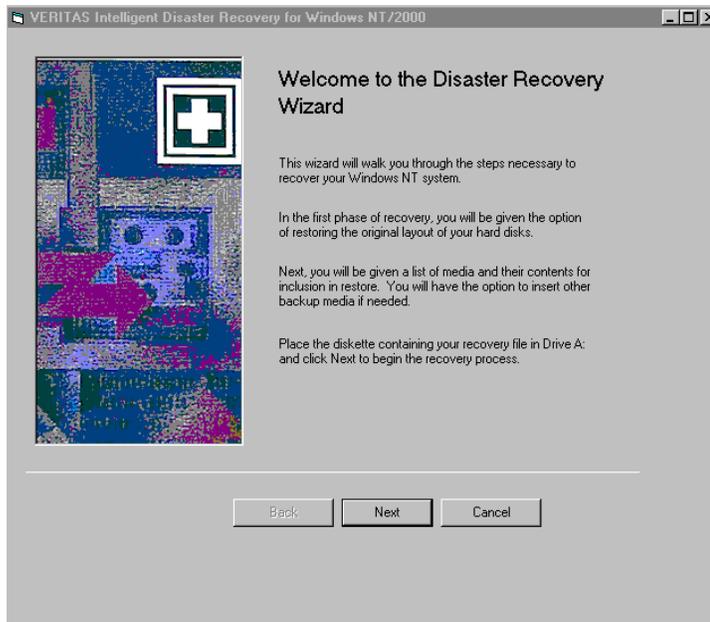
Figure 12: Welcome screen

3. The next screen to be displayed in the disaster recovery process is the Select Recovery File shown in Figure 13. The user selects the file that contains recovery information for the failed server. Click Next to continue.
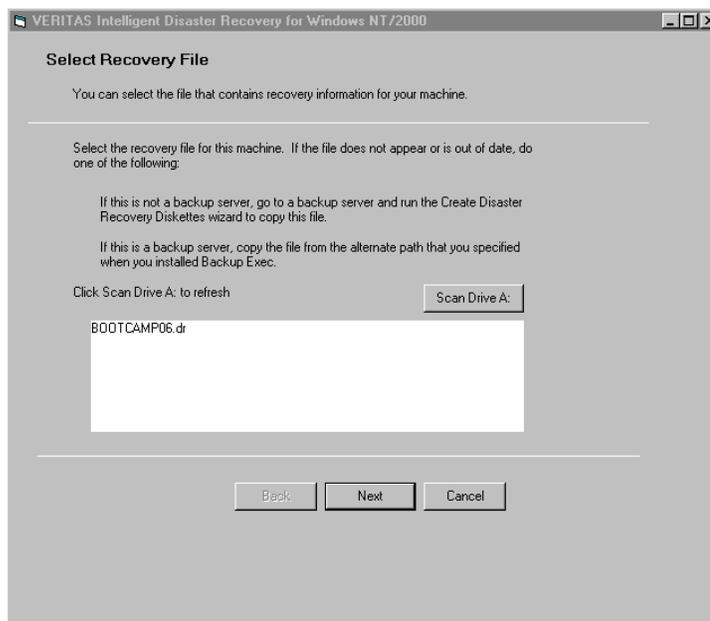
Figure 13: Select Recovery File screen

4. Figure 14 shows the Modify Hard Disk Layout screen. This wizard screen allows the user to run the Disk Administrator program to make any additional partition changes to the system hard disk. Click Next to continue.
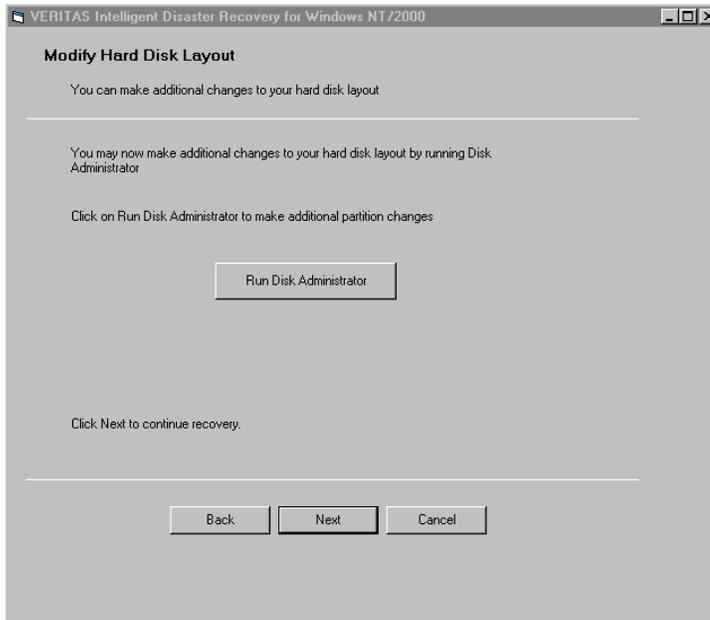
Figure 14: Modify Hard Disk Layout screen

5. The next screen in the disaster recovery process is the Detecting Media Devices progress screen shown in Figure 15.
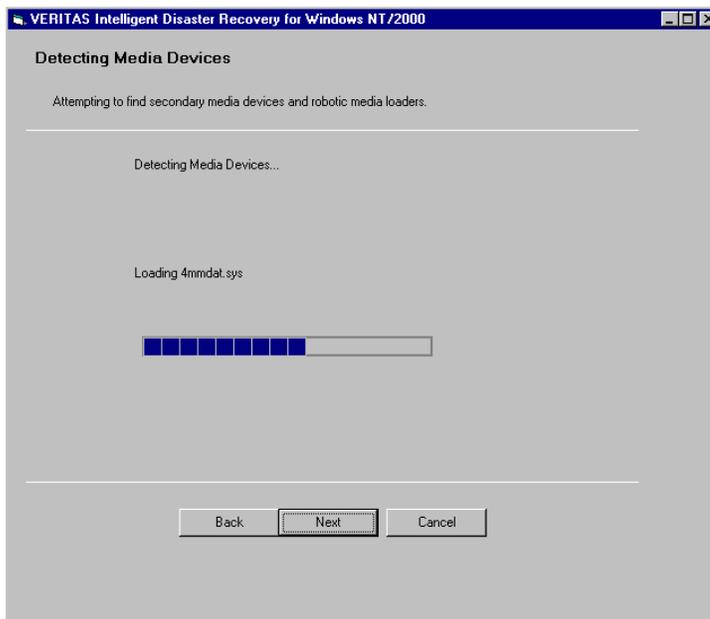
Figure 15: Detecting Media Devices progress screen

6. Figure 16 shows the dialog box that displays the attached devices that were found. Click Next to continue.
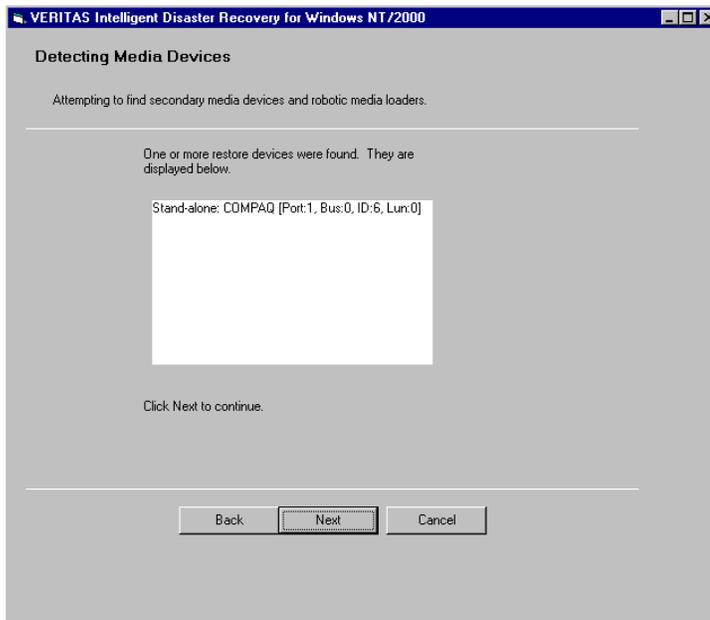
Figure 16: Restore devices dialog

7. After the media device has been detected, you will be prompted to insert media into the device, as shown in Figure 17. Click Next to continue.
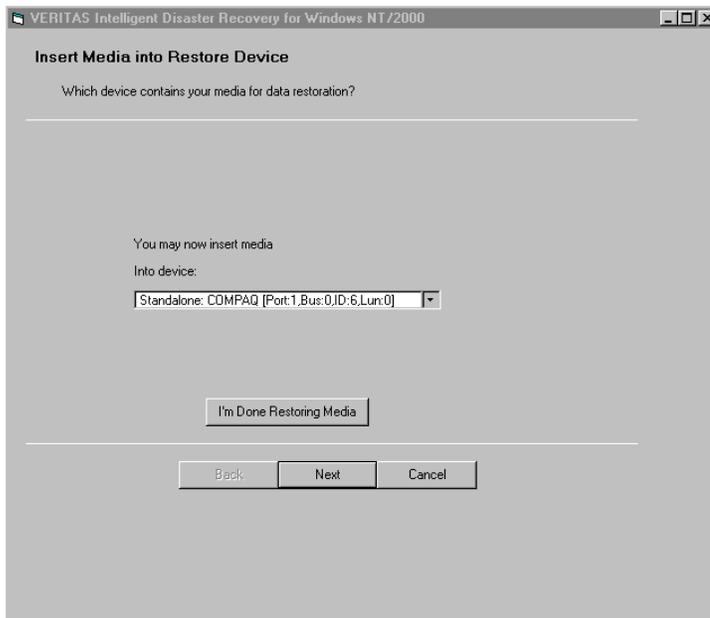
Figure 17: Insert Media screen

8. Figure 18 shows the Restoring Data screen, which provides initial information about the tape drive during the data restore process. Click Next to continue.
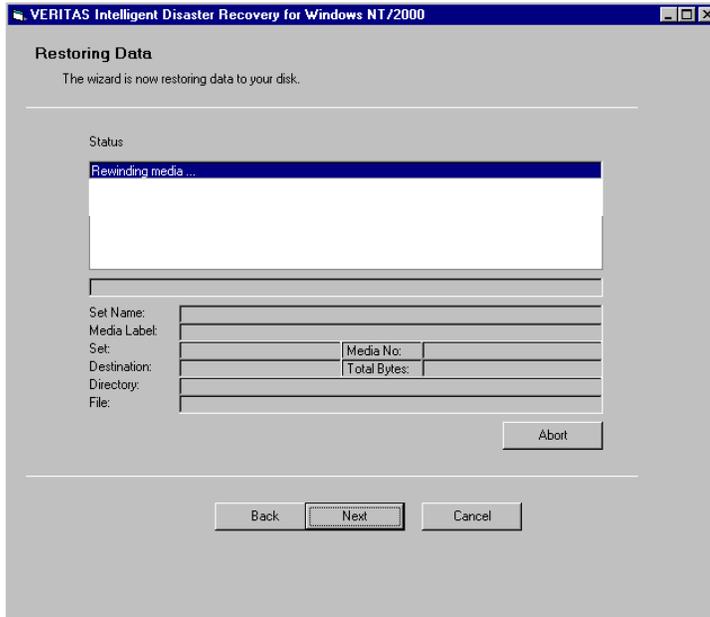
Figure 18: Restoring Data screen

9. The next screen in the disaster recovery process is the Found a Backup Set screen shown in Figure 19. This screen shows that a backup set was found and waits for the user to click Restore Set, which restores the backup data to the disk drive.
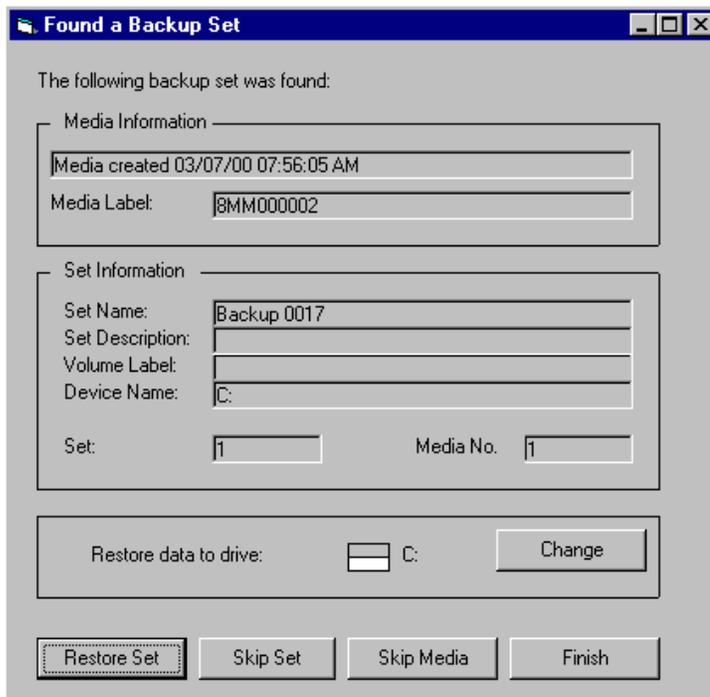
Figure 19: Found a Backup Set screen

10. Figure 20 shows the Restoring Data screen, which provides detailed information about the tape drive during the data restore process.
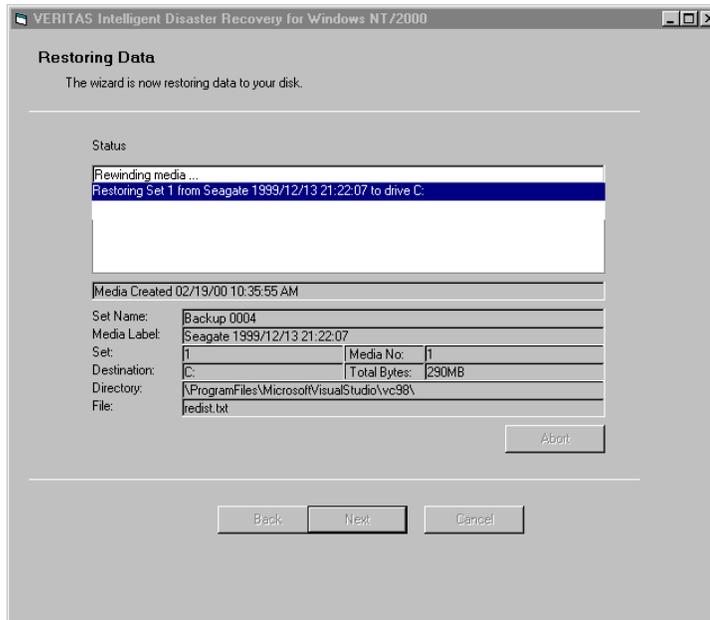
Figure 20: Restoring Data screen

11. The last wizard screen in the disaster recovery process is the Intelligent Disaster Recovery Complete screen shown in Figure 21. Eject the tape when this screen appears. Click Finish to end the disaster recovery process.
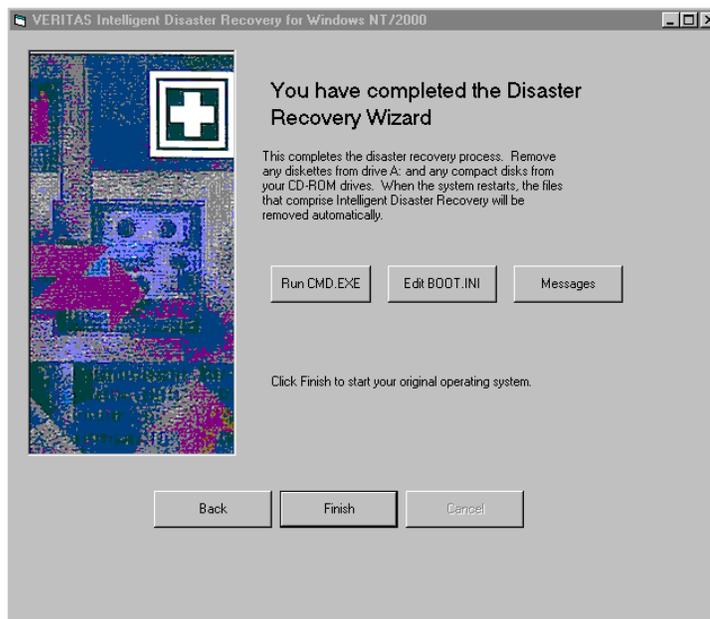
Figure 21: Intelligent Disaster Recovery Complete screen

Questions Regarding Disaster Recovery

All questions regarding disaster recovery should be directed to the support number in your *VERITAS BackupExec 8.5 Owner's Manual*.

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