

Disaster Recovery Module Windows

Version 2.6

Installation and User's Guide

STOREWAY DPA



STOREWAY DPA

Disaster Recovery Module Windows Version 2.6

Installation and User's Guide

Software

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Chapter 1. Product overview

This document defines the integration and configuration process of the StoreWay DPA DiskSafe Disaster Recovery agent on the Windows server which is to be protected. It also explains how to restore the Windows system disk in the event of a system failure.

A DiskSafe Disaster Recovery agent is installed on the Windows server to protect. This agent enables the hot backup in programmed or continuous mode of the Windows system on the disk and, in the event of a major incident, to restore this disk.

The term Disaster Recovery implies the reconstruction of a system using a system image (snapshot) which is stored elsewhere.

If the hardware is different from the original, the return to a prior system state is not guaranteed. As such, it is important to qualify and validate beforehand, to ensure smooth recovery on the replacement hardware.

The agent handles the following:

- > Availability of storage space on the StoreWay DPA to store the disk system snapshot.
- > Backup, programmed or continuous, of the Windows workstations disk system.
- > Recovery of an entire system using the Disaster Recovery CD and a snapshot (from among the latest available temporal snapshot).

Windows systems supported by DiskSafe

Microsoft Windows 2000 Professional, Server ou Advanced Server avec SP4.

Microsoft Windows Server 2003.

Microsoft Windows XP Home Edition and Professional (SP2 or later).

Microsoft Windows Vista

Disk space required

- > 20 MB of free disk space.

NOTE: The DiskSafe agent requires the installation of the Intelligent Management Agent (IMA), which is automatically installed if it is not present on the machine. IMA requires 5.8 MB of extra disk space.

Before starting

- 1 Ensure that the system is supported (see above list).
- 2 Ensure that ASM storage space has been created on the StoreWay DPA and that its size is sufficient. For more information on the StoreWay DPA initialisation, consult the **Quick Start** guide.
- 3 Log on as an administrator (obligatory for DiskSafe installation).
- 4 If you need to bypass a Firewall, open ports TCP 11762 and 3260 on the Firewall, to ensure the communication between the system and the StoreWay DPA.

NOTE: Make sure you are able to reboot your system after installing the StoreWay DPA DiskSafe Disaster Recovery agent.

NOTE: For more information on other uses of the DiskSafe module, refer to **DISKSAFE** documentation.

Chapter 2. Installation and configuration of the agents

See:

["Installation prerequisites" page 9](#)

["Installing the agent" page 10](#)

Installation prerequisites

To install and configure the StoreWay DPA DiskSafe Disaster Recovery agent for Windows, you need to have the following elements:

- > DiskSafe Disaster Recovery Licence(s) – one for each Windows machine to protect.
- > A Microsoft iSCSI software initiator installation kit or access to internet from the Windows machine to protect. (Not necessary on Windows Vista).
- > A **StoreWay® DPA Initial Setup (Windows), Agents (Windows, Linux, Netware, MAC OS), Graphical User Interface Setup, ASM & Disaster Recovery Agents Windows) Version X.X.XXX** CD-ROM.

WARNING: To finalize the Disaster Recovery agent installation, you will need to restart the machine.

Installing the agent

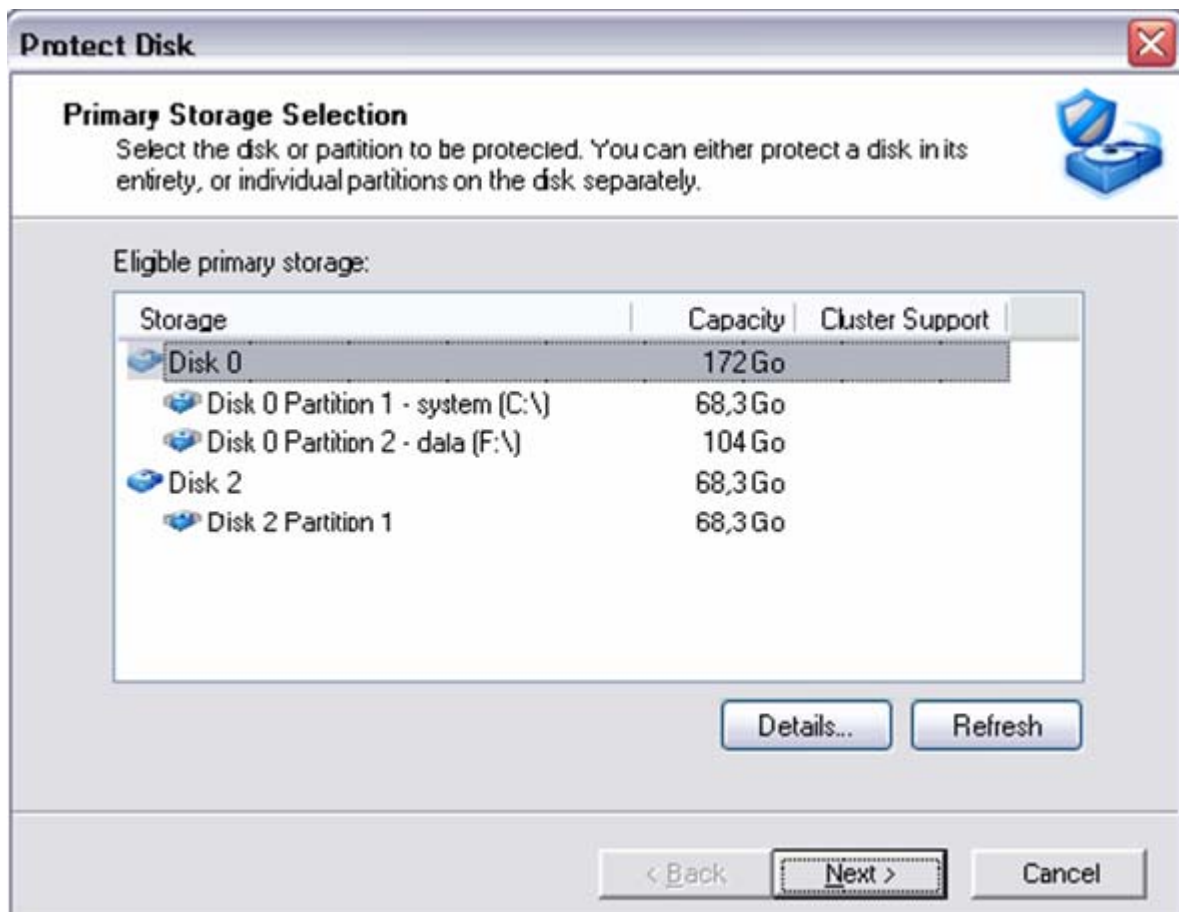
- 1 Install the **Microsoft iSCSI initiator** (Not necessary on Windows Vista).
Download the Microsoft iSCSI initiator software from this address and begin the installation.
<http://www.microsoft.com/windowsserversystem/storage/technologies/iscsi/default.aspx/>
- 2 Install the DiskSafe Disaster Recovery agent
- 3 Insert the **StoreWay® DPA Initial Setup (Windows), Agents (Windows, Linux, Netware, MAC OS), Graphical User Interface Setup, ASM & Disaster Recovery Agents Windows) Version X.X.XXX** CD-ROM on the Windows server you wish to protect. The following web page opens.
NOTE: If the web page does not open, start the installation from the CD.
- 4 Click **DiskSafe Agent** or **Upgrade existing DiskSafe agent** and follow the wizard.
- 5 Hardware information transmission request.
It is recommended to send this hardware information to be able to handle future hardware compatibilities. To share this information, click **Yes**.
- 6 Click **Finish** to finish the DiskSafe set up.
- 7 Restart the machine after set up.

Entering the license

- 1 In Windows, start DiskSafe (**Start/All Programs...**) and enter your license number.
- 2 Enter your DiskSafe Disaster Recovery license number then click **Add**. When the license is validated, click **OK**. The DiskSafe window opens.

Disk Protection

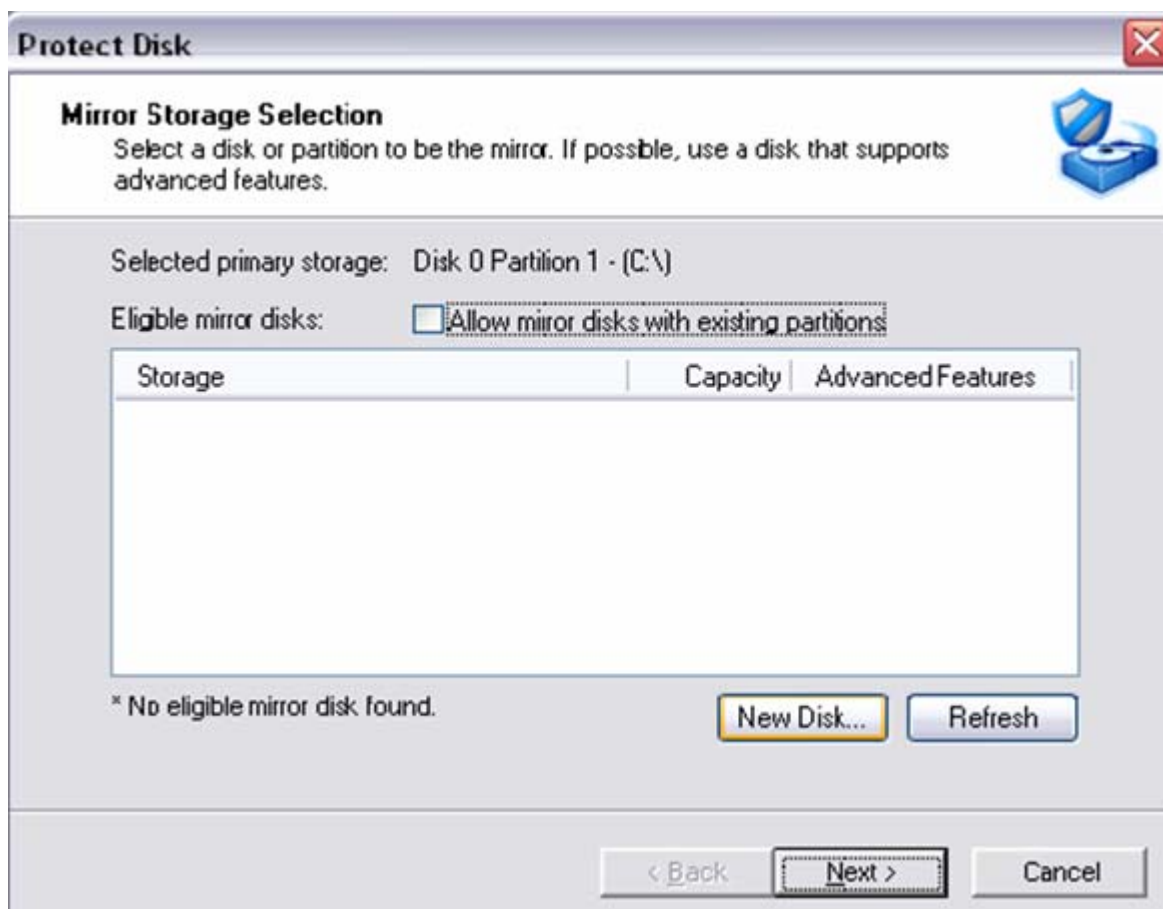
- 1 In the left-hand part of the DiskSafe window, select **Protected Storage/Disks**:
- 2 Right-click **Disk** and select **Protect** to start the wizard.
- 3 Click **Next** to start the **Disk protection wizard**.
- 4 Choose the disk or drive to protect.



- 5 Choose the drive (disk) to protect. In this example, here «Disk 0 Drive 1- system (C:\) ».
- 6 Click **Next**.

Creating the disk mirror

- 1 Click **New Disk** to create the storage space on the appliance.



Declaring the StoreWay DPA

- 1 Click **Add Server** to add the StoreWay DPA to the list.



The 'Allocate Disk' dialog box is shown. It has a title bar with a close button. The 'Servers' section contains a table with columns 'Server Name' and 'IP Address'. Below the table are buttons for 'Remove Server' and 'Add Server...'. The 'Server characteristics' section includes fields for 'Server type', 'iSCSI', and 'Fibre Channel', each with an 'Update' or 'Enable' button and an 'Advanced...' button. A message icon indicates 'The server [testabd1] is compatible with IMA.' The 'Disk size' is set to 70001 MB. The 'Protocol' section has radio buttons for 'iSCSI' and 'Fibre Channel'. At the bottom are 'OK' and 'Cancel' buttons.



The 'Add Server' dialog box is shown. It has a title bar with a close button. The 'Server information' section includes a 'Server name' field with 'testabd1', a 'Windows Domain Authentication' checkbox, a 'Domain Name' field, a 'User name' field with 'admin', and a 'Password' field with masked characters. The 'Protocols' section has a checked 'iSCSI' checkbox with an 'Advanced...' button, and an unchecked 'Fibre Channel' checkbox with an 'Advanced...' button. At the bottom are 'OK' and 'Cancel' buttons.

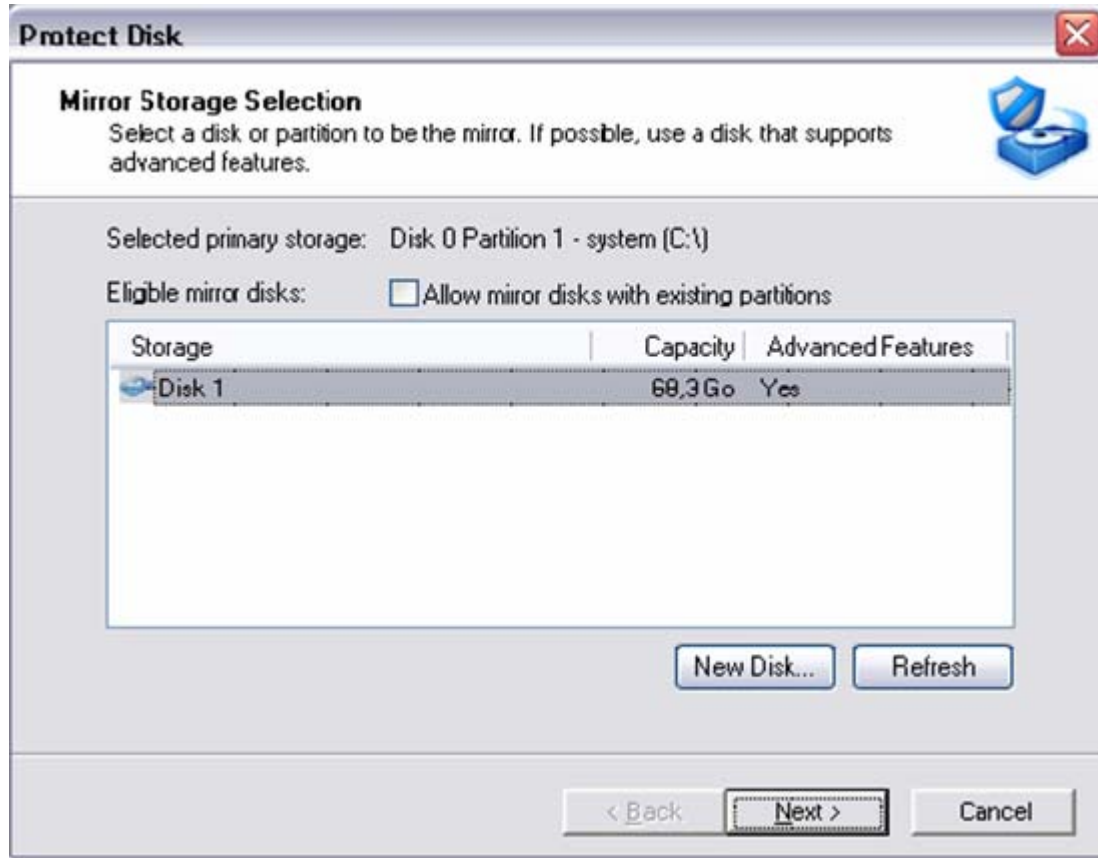
- 2 Make sure you enter the StoreWay DPA Server name correctly.
- 3 Enter the User name and the Password of the appliance administrator.

NOTE: Make sure the iSCSI check box is ticked.

- 4 Click **OK**.
- 5 Click **OK** to allocate your StoreWay DPA storage space.

Allocation of reserved disk space on the StoreWay DPA

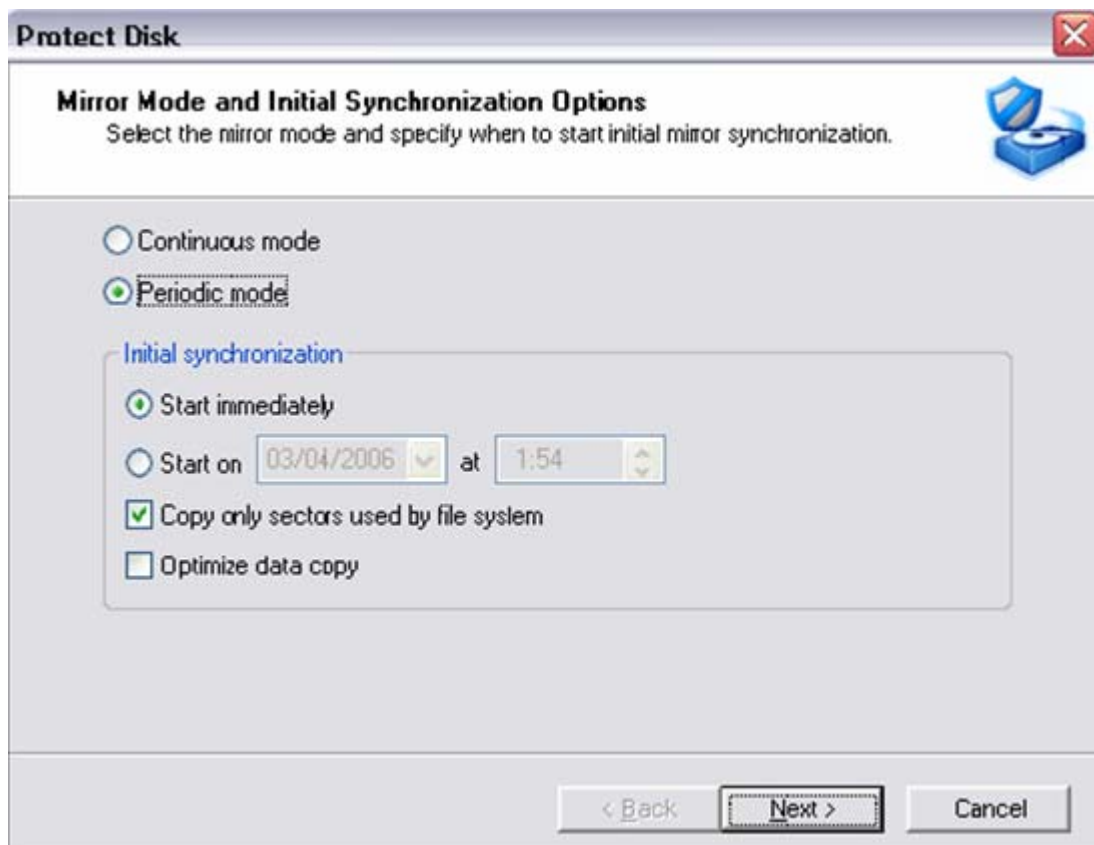
- > The created disk mirror is displayed:



- > Click **Next** to configure the type, the frequency and synchronization parameters.

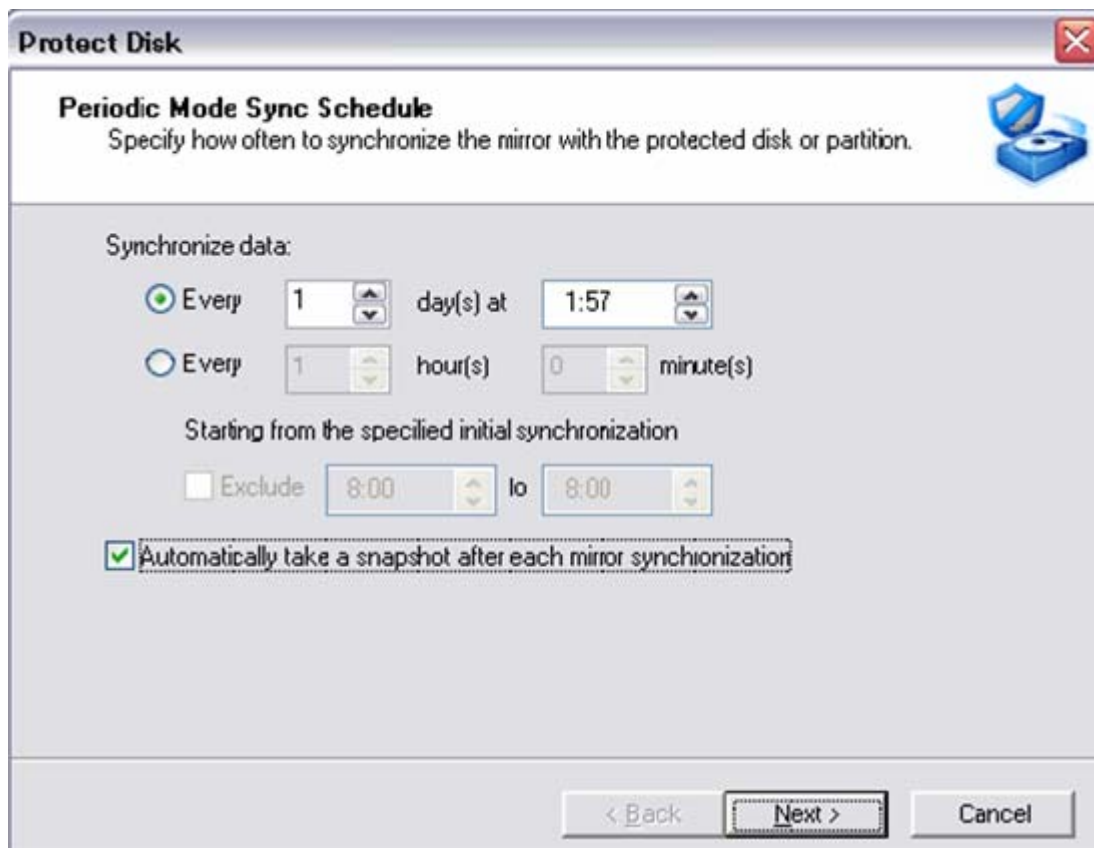
Configuring the type, frequency and synchronization parameters

- 1 Select **Periodic mode** with immediate restart to create a first Snapshot. Click **Next**.



The screenshot shows the 'Protect Disk' dialog box with the title bar 'Protect Disk' and a close button. The main heading is 'Mirror Mode and Initial Synchronization Options' with a sub-instruction: 'Select the mirror mode and specify when to start initial mirror synchronization.' There is a blue icon of a disk with a shield. Below this, there are two radio buttons: 'Continuous mode' (unselected) and 'Periodic mode' (selected). Under the 'Periodic mode' section, there is a sub-heading 'Initial synchronization' and three options: 'Start immediately' (selected), 'Start on' (with a date dropdown set to '03/04/2006' and a time dropdown set to '1:54'), and 'Copy only sectors used by file system' (checked). There is also an unchecked checkbox for 'Optimize data copy'. At the bottom, there are three buttons: '< Back', 'Next >' (highlighted with a dashed border), and 'Cancel'.

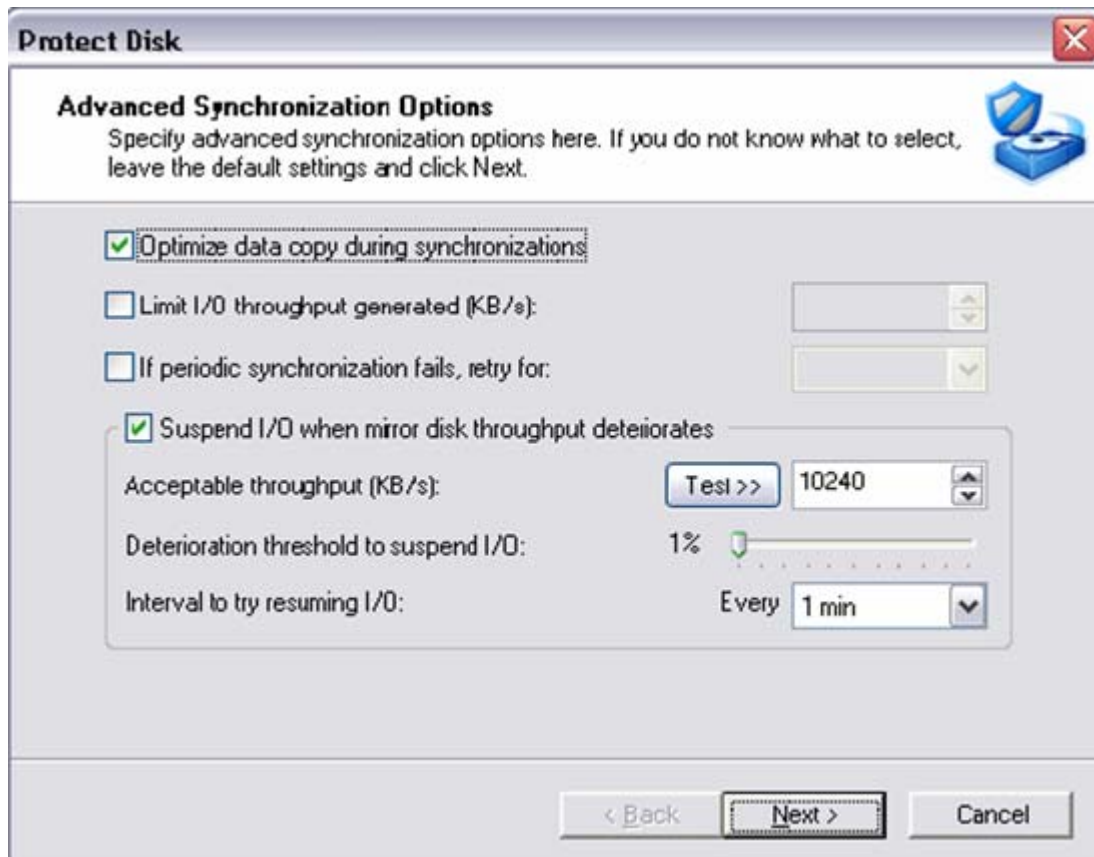
- 2 Configure a daily Snapshot synchronization by entering the time of your choice.



The screenshot shows the 'Protect Disk' dialog box with the title bar 'Protect Disk' and a close button. The main heading is 'Periodic Mode Sync Schedule' with a sub-instruction: 'Specify how often to synchronize the mirror with the protected disk or partition.' There is a blue icon of a disk with a shield. Below this, there is a section 'Synchronize data:' with two radio buttons: 'Every' (selected) and 'Every' (unselected). The 'Every' section has a dropdown set to '1' and a unit dropdown set to 'day(s)', with a time dropdown set to '1:57'. The 'Every' section has a dropdown set to '1' and a unit dropdown set to 'hour(s)', with a 'minute(s)' dropdown set to '0'. Below this, there is a section 'Starting from the specified initial synchronization' with an unchecked checkbox for 'Exclude' and two time dropdowns set to '8:00' and '8:00'. There is also a checked checkbox for 'Automatically take a snapshot after each mirror synchronization'. At the bottom, there are three buttons: '< Back', 'Next >' (highlighted with a dashed border), and 'Cancel'.

- 3 In Periodic mode, always check **Automatically take a snapshot after each mirror synchronisation** to ensure consistency.
- 4 Click **Next**.

Advanced Synchronization Options



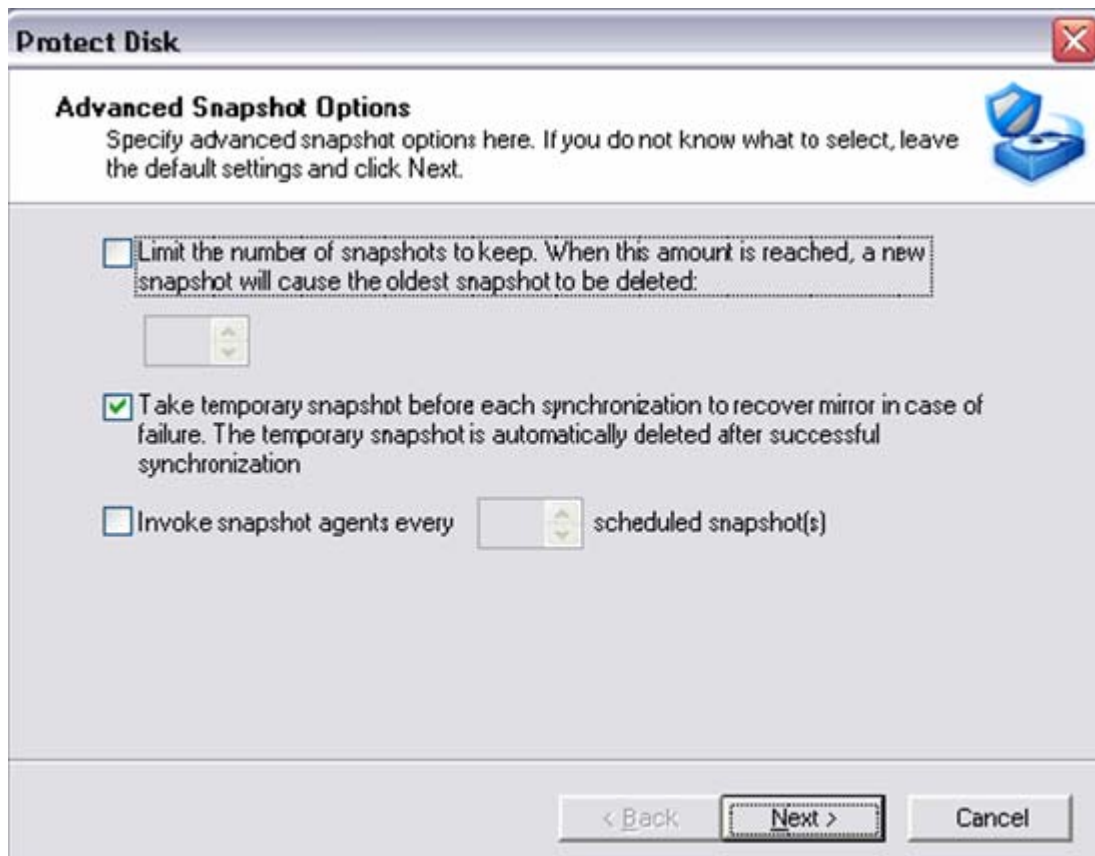
The screenshot shows a window titled "Protect Disk" with a close button in the top right corner. Below the title bar, the section "Advanced Synchronization Options" is displayed, accompanied by a small icon of a blue disk with a shield. A text box instructs the user: "Specify advanced synchronization options here. If you do not know what to select, leave the default settings and click Next." The main area contains several settings:

- ☒ **Optimize data copy during synchronizations**
- ☐ **Limit I/O throughput generated (KB/s):** followed by a numeric input field.
- ☐ **If periodic synchronization fails, retry for:** followed by a dropdown menu.
- ☒ **Suspend I/O when mirror disk throughput deteriorates**
 - Acceptable throughput (KB/s):** includes a "Test >>" button and a numeric input field set to "10240".
 - Deterioration threshold to suspend I/O:** includes a slider set to "1%".
 - Interval to try resuming I/O:** includes a dropdown menu set to "Every 1 min".

At the bottom of the window, there are three buttons: "< Back", "Next >" (which is highlighted with a dashed border), and "Cancel".

- > This screen enables you to define advanced parameters (optimisation, bandwidth...). We recommend you keep default parameters for a standard configuration. For more information, consult the DiskSafe documentation.
- > Click **Next**.

Configuring the number of Snapshots to keep



- > You can limit the number of Snapshots kept on the StoreWay DPA. For more information, consult the documentation **DiskSafe**.
- > Click **Next**.

Completing the Disk Protection Wizard

- > Click **Finish** to end the Disk Protection Wizard.

NOTE: If you selected **Start Immediately** in the Protect Disk window (Initial Synchronization), the System Protection begins immediately.

Setting the Recovery Password

Set the Recovery Password to be used in the event of a complete system recovery after a crash.

- 1 In the main DiskSafe window, right-click on DiskSafe and select **RecoveryCD/Set Password**.



The dialog box titled "Set Recovery Password" contains the following elements:

- Instructions:** "Select a server to set its credential information used when invoking the Recovery CD option to recover your disks from that server. You can continue to set password for each of your registered servers. Please remember the credentials. You can reset them at any time."
- Registered servers:** A table with two columns: "Server" and "IP Address".

Server	IP Address
testabd1	172.16.5.6
- Username (host name):** A text field containing "HALEBOPP".
- Password for recovery: (12-16 characters)** A password field with 12 dots.
- Confirm password:** A password field with 12 dots.
- Buttons:** "Set Password" and "Close".

- 2 Select the StoreWay DPA, enter your password and click **Set Password**.
- 3 Click **Close**.

Chapter 3. System Recovery

Prerequisites

To retrieve a system, you need the following:

- > The Boot CD-ROM StoreWay DPA **Disaster Recovery CD for Windows systems**.
- > The Recovery Password set during the DiskSafe agent configuration.

NOTE: If you have forgotten your password, you can reinitialize from the StoreWay DPA administration interface.

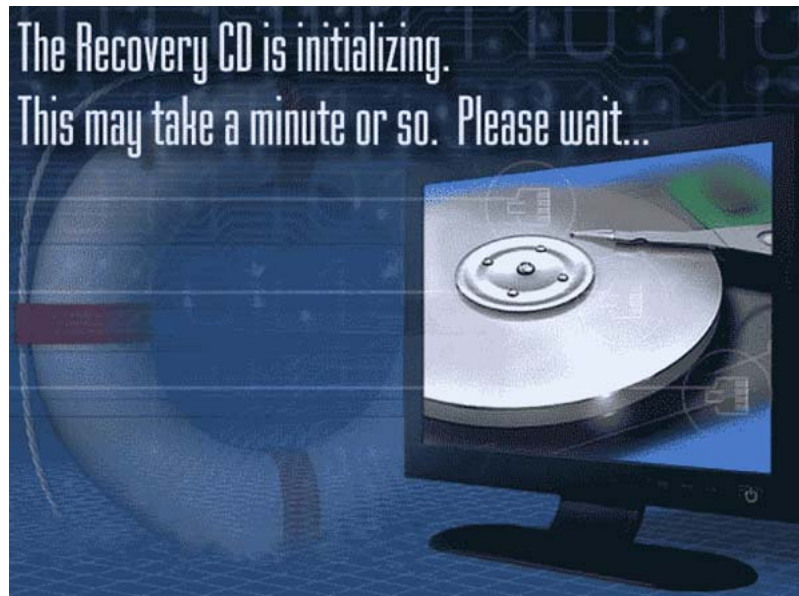
See:

["Perform a system recovery" page 20](#)

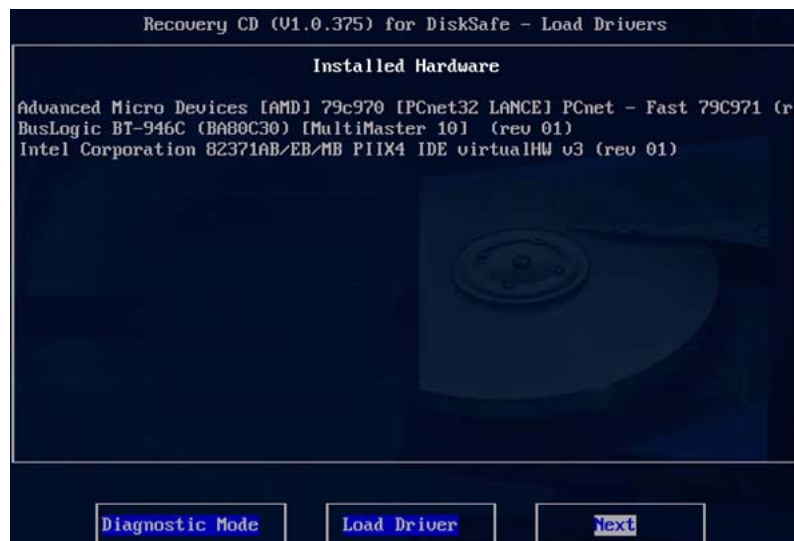
["Reinitialize the recovery password" page 24](#)

Perform a system recovery

- 1 Start the system from the Recovery CD.



- 2 Follow the recovery wizard instructions.



- This wizard automatically detects the server hardware configuration and guides you through the driver loading process.
- If a driver does not load automatically, you can load one from this window.

NOTE: The Recovery CD uses a Linux Operating System (RedHat), you therefore need to load a relevant Linux driver.

Example of a driver load:



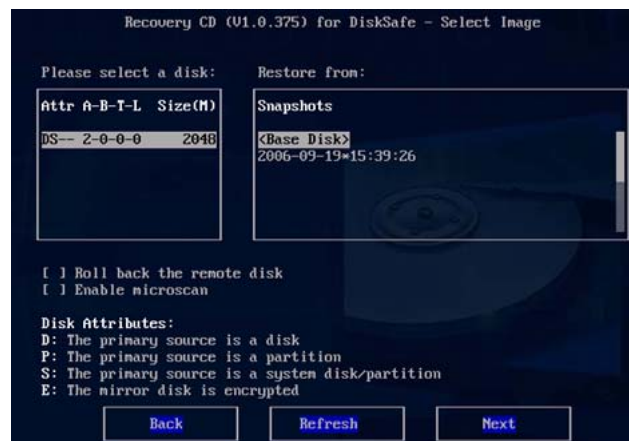
Select and configure the network card



- 1 Select the system to recover and the StoreWay DPA to use.



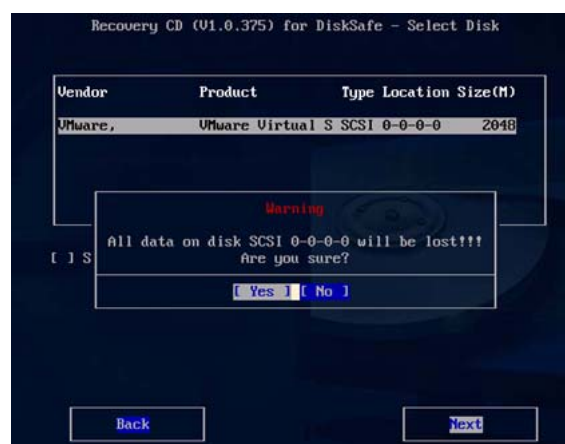
- 2 Enter the system name to recover in the **Client Name** field.
The StoreWay DPA name or IP address in the **Recovery Server** field.
 - 3 Enter the recovery password in the **Recovery Password** field.
 - 4 Click **Next**.
- NOTE:** If you have forgotten your password, you can reinitialize from the StoreWay DPA administration interface. See the paragraph « Reinitialize the recovery password password » in the section: "System Recovery" page 19.
- 5 Select the image to recover.
 - 6 Choose the snapshot you want to recover. This list proposes available snapshots and the base disk (equivalent to the latest snapshot if the post-snapshot synchronisation option was selected during the agent installation).

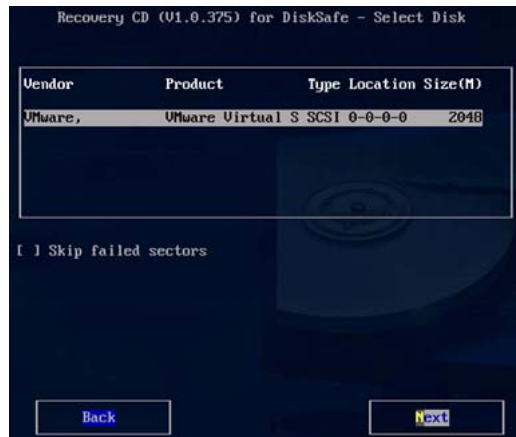
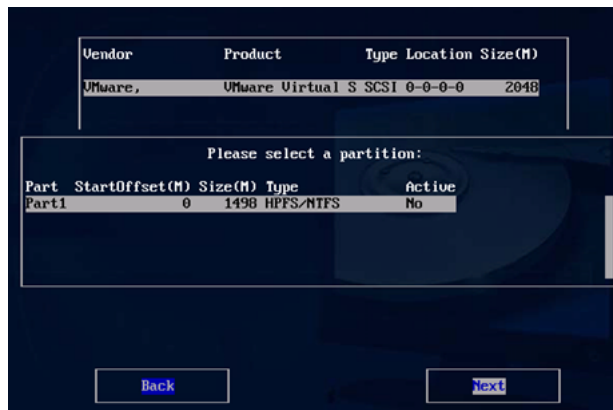


By default, the **Roll back the remote disk** option is not selected. This option enables you to recover a prior disk snapshot and to delete all subsequent Snapshots.

The **Enable microscan** option enables DiskSafe to analyse the differences between two disks to minimize the impact on the network and only recover the blocks which differ from the chosen snapshot and the current production disk system.

Select the destination disk





- > If you restore a drive, you must select an existing drive or allow DiskSafe to drive the disk by selecting **Clear all drives and create new**.

NOTE: If you select **Clear all drives and create new**, all existing drives on your disk will be deleted and all data lost.

- > Confirm and wait for the disk recovery to complete.

Reboot and reactivate the Disaster Recovery backup

- 1 Remove the « **StoreWay DPA Disaster Recovery for Windows - Boot CD** » CD from the drive and restart the system logging on as administrator.
- 2 Start DiskSafe and remove the DiskSafe protection associated with your system drive.
- 3 Reboot the machine.
- 4 Reactivate the protection and perform the first synchronisation by activating the **Optimize data copy** option.

Reinitialize the recovery password

If you have forgotten your password, you can reinitialize from the StoreWay DPA administration interface.

- 1 Log on to StoreWay DPA as an administrator.
- 2 Open the **operations/Storage/Virtual Disks** menu.
- 3 Select the workstation Snapshot you want to reinitialize the password for by clicking the associated checkbox.
- 4 Click the **Init Password** button in the bottom right of the screen to delete the Recovery password associated with this Snapshot.

Chapter 4. Externalize Disaster Recovery Snapshots to tape

Disaster Recovery Snapshots saved on the StoreWay DPA DiskSafe Disaster Recovery module can be backed up to tape, to create restorable security copies in the event of a major incident and in the framework of a Disaster Recovery Plan (DRP).

See:

["Backup to tape" page 26](#)

["Retrieving a Disaster recovery Snapshot from tape" page 28](#)

Backup to tape

Backup Windows Disaster Recovery Snapshots to tape for a given server

- 1 Install the DiskSafe Disaster Recovery agent on the machine to be protected and configure the disk system protection. See "Installation and configuration of the agents" page 8 for more details about how to do this.
- 2 Wait for the first synchronization to complete.
- 3 Create the system in the StoreWay DPA.
- 4 Declare the server in the list of known StoreWay DPA systems. See the **Quick Start** guide for more information on how to do this.
- 5 Create a Disaster Recovery application associated with the system.

Application: Edit

Description

Name:

Type: Disaster Recovery

Linked to: my_system

Status:

Comments:

Backup

Data to backup

Type	Data path	Remove from list
All data	/	<input type="checkbox"/>

delete checked items

Add:

Directories:

Create and configure an Application Disaster Recovery profile type.

- 1 Click the **Create new backup profile icon** ().

New backup profile

Backup profile type choice

Profile type : ☐ System ☒ Application

Profile qualifier : ☐ Standard ☒ Disaster Recovery Application

Description

Name :

Priority :

Comments :

- 2 Click **create**.
- 3 Make this profile available for an application.

Disaster Recovery Application backup profile

Description

Name : **DR_profile**

Priority : High

Comments :

Data Backup

Data to backup

Type	Data	Remove from list
Add:		
Directories		

Processings

Before backup :

After backup :

Profile available for

Activated	Name	Type	Status
<input checked="" type="checkbox"/>	dr_testsk2	Disaster Recovery	●

Click **update**.

- 4 Click launch, start a manual (or scheduled) backup for the Disaster Recovery application.

Notes

- > Only full backups can be performed.
- > Only the latest available Snapshot is taken into account (you cannot back up a prior Snapshot).

Retrieving a Disaster recovery Snapshot from tape

Retrieving a Disaster Recovery Snapshot from tape is typically only necessary when the StoreWay DPA is down or has been reinitialized and we need to restore a Windows system Snapshot which is no longer on the StoreWay DPA, for example in the case of a Disaster Recovery Plan (DRP).

NOTE: Following the recovery or StoreWay DPA reinitialization, it is recommended to create a new protection system and restart a new synchronization between the agent and the StoreWay DPA.

Retrieve a Disaster Recovery snapshot from tape

- 1 Start the recovery of a Disaster Recovery application.
Proceed as with a standard recovery (**Note:** no DRP mode on the model with tape library). Select the Snapshot to retrieve by using the browser in the same way as for standard file recovery.
- 2 Click **restore** and validate the cart by clicking **restore**.
If the «**Recovery to primary disk**» option is selected, simply disconnect the virtual disk at the iSCSI initiator level on the relevant Windows machine to avoid this disk being overwritten.
If the option is cleared and if this virtual primary disk is still present, the recovery cannot start.
- 3 Disconnecting the virtual disk from the primary system
Because it is not possible to rename the Disaster Recovery Snapshot, you may need to disconnect the virtual Snapshot on the machine before moving on to the next step.
Disconnecting the virtual disk is performed at the iSCSI initiator level on the relevant Windows machine.
- 4 Starting the Snapshot recovery to disk by clicking **restore**.
Snapshot retrieval from tape starts.
- 5 Wait for the recovery to end.
- 6 Reactivate the protection on the DiskSafe agent of the Windows machine.
Check the DiskSafe agent configuration on the Windows machine to ensure the disk system protection is still active.

Chapter 5. Appendix

- 1 You can use an HBA iSCSI to connect to the remote disk on the StoreWay DPA. This card also allows remote start up for immediate return to activity.
- 2 DiskSafe does not support USB storage.
- 3 When you protect dynamic Windows disks and you wish to remove this protection, you need to deallocate the associated iSCSI disk(s) from the system disk. Windows does not permit the use of the primary disk and simultaneous replication in the case of dynamic disks.
- 4 If you want to protect dynamic disks, protect the entire disk.
- 5 After the license evaluation period expire, you must remove this license and replace it with the full license.
- 6 To use the agent on a system behind a firewall, open the ports 11762 and 3260 on the firewall.

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