

# DiskSafe Agent Version 2.6

Installation and User's Guide

STOREWAY DPA





# STOREWAY DPA

## DiskSafe Agent Version 2.6

### Installation and User's Guide

#### **Software**

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**BULL CEDOC  
357 AVENUE PATTON  
BP.20845  
49008 ANGERS CEDEX 01  
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## Chapter 1. Overview

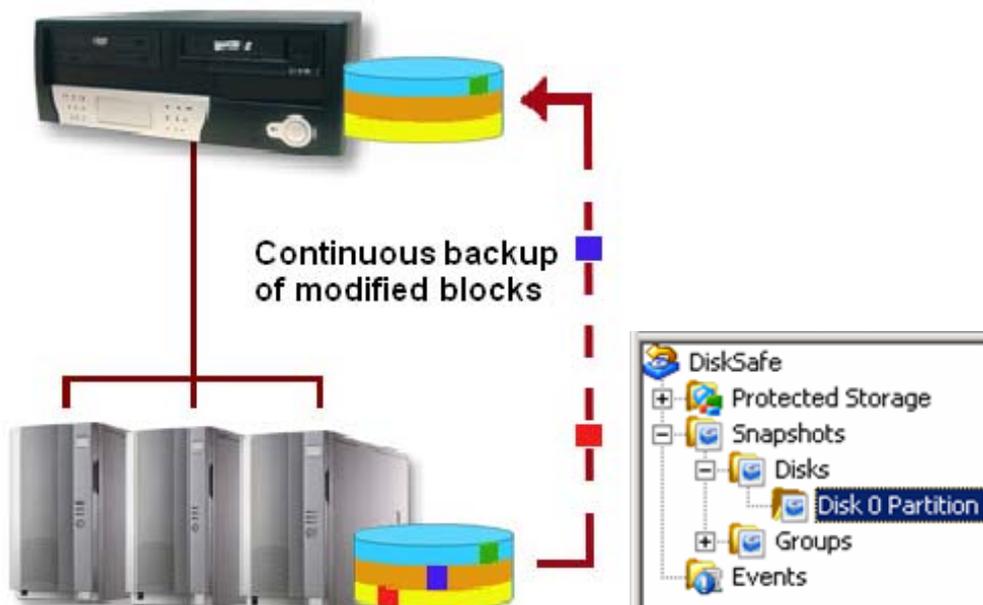
This document defines the integration and configuration processes of the DiskSafe agent on the server to protect in addition to the data restoration process.

Continuous access to critical data is crucial for most companies. They cannot afford to lose access to this data, even temporarily, due to system down time for example.

StoreWay DPA DiskSafe is a software application which is designed to answer this critical requirement. DiskSafe is directly integrated into the MMC (Microsoft Management Console).

On each system where the agent is installed, DiskSafe ensures reliable data protection and enables rapid access to information in the event of a system stoppage or disk failure.

DiskSafe protects servers, workstations, and laptops running on Windows systems in block mode, by copying, over the network, their local disks or partitions to a remote mirror disk which is hosted on the StoreWay DPA, which acts as a (SAN-IP) iSCSI storage server.



Once the first synchronization is performed, DiskSafe enables you to either:

- > Simultaneously synchronize (real time, continuous data protection mode) data written to the local disk and the mirror disk on the StoreWay DPA by only transferring modified blocks to the StoreWay DPA (via an IP network).
- > Periodically synchronize data written to the local disk and the mirror disk on the StoreWay DPA by only transferring modified blocks to the StoreWay DPA (via an IP network).

To guarantee access to data, DiskSafe offers to take Snapshots (or Time Marks). This enables you to manage versioning, associated with the chosen synchronization mode: periodical or continuous.

These Snapshots can be mounted simply and rapidly on the server hosting the application, in order to retrieve files or folders on this disk or partition.

Associated with a Snapshot application agent, DiskSafe coherently protects professional applications such as Exchange, Lotus Notes, and data files in their entirety.

For more information on these modules, see the StoreWay DPA Compatibility Guide.

## DiskSafe performs the following functions:

- Enables ASM storage space on the StoreWay DPA (this space is defined during the initialization phase) which allows you to store the Snapshot of one or more disks or partitions (depending on your license details).
- Programmed or continuous disk or partition backup on Windows.
- Complete system restoration of a disk, partition or file data (see also **DPA\_DRWINDOWS\_V2\_6\_EN.pdf** documentation) from the last or latest available snapshots.

**WARNING:** You cannot use DiskSafe with your MS Exchange and Lotus Notes applications without previously installing specific Exchange and Lotus notes Agents to use with DiskSafe. (Please refer to the documentation concerning the applications in question).

# DiskSafe prerequisites

## Supported client agents:

- > Microsoft Windows 2000 Professional, Server or Advanced Server (SP4).
- > Microsoft Windows Server 2003 Standard Edition or Enterprise Edition with Service Pack 1.
- > Microsoft Windows XP Home Edition and Professional (SP2 or later).
- > Microsoft Windows Vista

Our agent uses the iSCSI protocol. Version 2.05 (or later) of Microsoft's iSCSI initiator is required. You can download this program from Microsoft's web site (except if you are running a Microsoft Vista environment).

<http://www.microsoft.com/windowsserversystem/storage/technologies/iscsi/default.aspx/>

Required disk space

- > 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 additional disk space.

## Before you install

- > Check that your system is supported (see above).
- > Check that your ASM storage space has been created on the StoreWay DPA during initialisation and that this space is sufficient.
- > Ensure your internet-connection functions to download the Microsoft iSCSI initiator if it is not already installed on the Windows system.
- > Log on as an Administrator (required to install DiskSafe).
- > If you have to go through a Firewall, open TCP 11762 ports for DiskSafe and 3260 for the initiator on the Firewall, to ensure communication between the system and the StoreWay DPA.

**NOTE:** You must reboot Windows after installing the StoreWay DPA DiskSafe agent.

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## Chapter 2. Installing the agent

See:

["Prerequisites to installing the DiskSafe agent" page 12](#)

["Installing the agent" page 13](#)

## Prerequisites to installing the DiskSafe agent

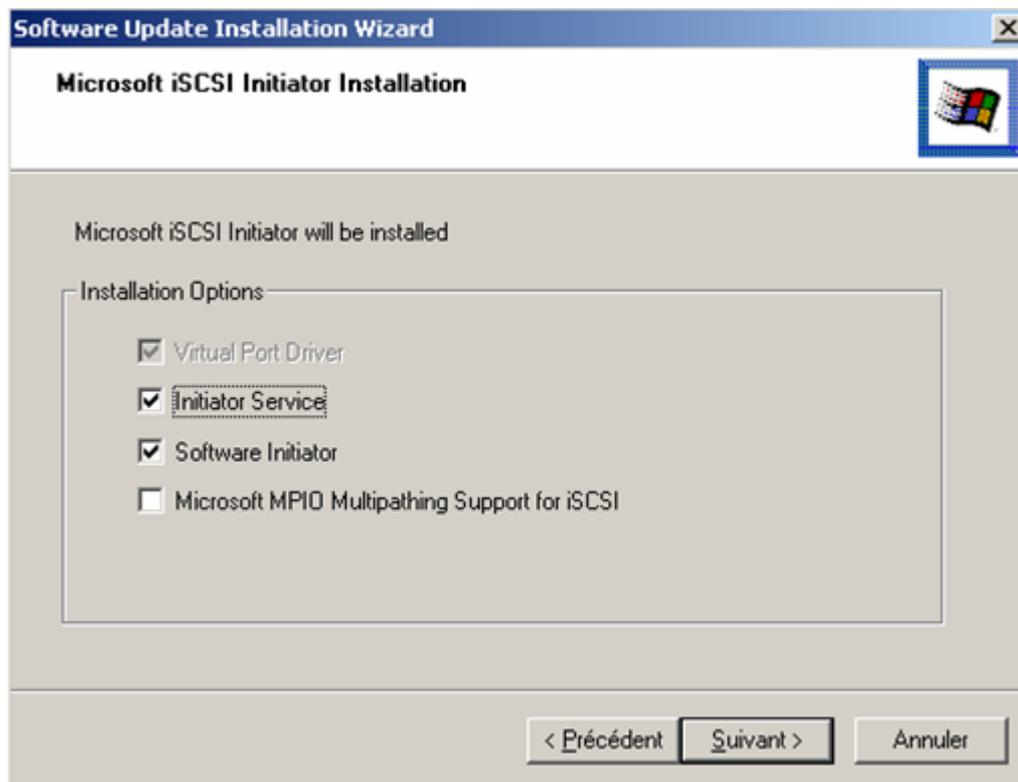
Before installing and configuring a StoreWay DPA DiskSafe agent, you need to have:

- > DiskSafe License(s).
- > Microsoft iSCSI software initiator installation kit (except if you are running a Microsoft Vista environment).
- > The CD-ROM **StoreWay® DPA Initial Setup (Windows), Agents (Windows, Linux, Netware, MAC OS), Graphical User Interface Setup, ASM & Disaster Recovery Agents Windows) Version X.X.XXX.**
- > Plan a Windows system restart.

## Installing the agent

- 1 **Install Microsoft iSCSI (except if you are running a Microsoft Vista environment):**

<http://www.microsoft.com/windowsserversystem/storage/technologies/iscsi/default.aspx/>



- Follow the wizard indications.
- 2 **Installing the DiskSafe agent.**
    - Insert the **StoreWay® DPA Initial Setup (Windows), Agents (Windows, Linux, Netware, MAC OS), Graphical User Interface Setup, ASM & Disaster Recovery Agents Windows)** CD-ROM into the Windows server you wish to protect. A web page opens.

Available ASM Installers		
	Platform	Product
>	Windows	<a href="#">DiskSafe agent</a> <a href="#">Upgrade an existing DiskSafe agent</a>
>	Windows	<a href="#">FileSystem Snapshot agent</a>
>	Windows	<a href="#">Exchange 2000/2003 Snapshot agent</a>
>	Windows	<a href="#">Lotus Notes Snapshot agent</a>
>	Windows	<a href="#">FileSafe agent</a>

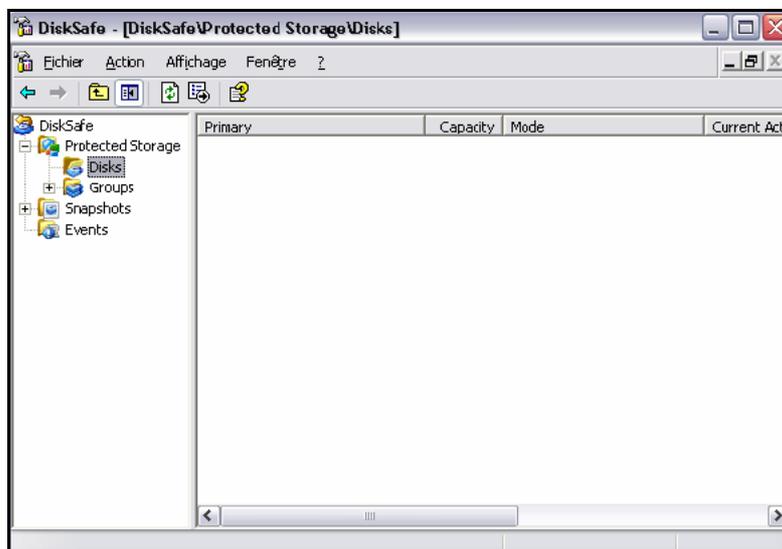
- Click **DiskSafe agent** or **Upgrade an Existing DiskSafe agent** and follow the installation wizard.
- The default destination folder is: **C:\Program Files\DiskSafe**.

### 3 Entering the license key.

- Enter your permanent license number at this point or alternatively use the 30-day evaluation license key which is as follows(DiskSafe version >3.5):

**29DJKEJ06KTUAT0VR4F8CBWF5**

- Click **Add**.
- When the license is validated, you can click **OK**. The DiskSafe window opens.



### 4 Activating a DiskSafe licence without a network connection

- When you have entered your product licence key for DiskSafe, you need to activate this licence. If the Windows server is unable to connect to the DiskSafe licences activation server, you need to follow the offline activation procedure. To do this, see "Managing DiskSafe licenses" page 48.

## 5 Request for the transmission of hardware information

It is recommended to send this information, to be able to update the hardware compatibility lists if required. To send this information, click **Yes** in the following window.

- Click **Finish** to exit the DiskSafe installation wizard.
- Restart the system after installation.

---

## Chapter 3. Protecting disks or partitions

See:

["Overview" page 17](#)

["Quick start: Protecting a partition" page 18](#)

["Displaying disk protection" page 25](#)

["Protecting several partitions: overview" page 26](#)

["Disk protection groups: overview and configuration" page 28](#)

## Overview

With DiskSafe you can protect a complete disk or simply a partition by specifying on which StoreWay DPA the disk will be duplicated. You also specify the synchronisation mode, which can be either continuous or periodical, with an occasional Snapshot (Time Mark) to guarantee the versioning.

Individual partition protection allows greater flexibility (granularity) for restoration. However, complete disk protection provides better level of data integrity.

For dynamic disks, you need to protect the whole disk and not just the partition.

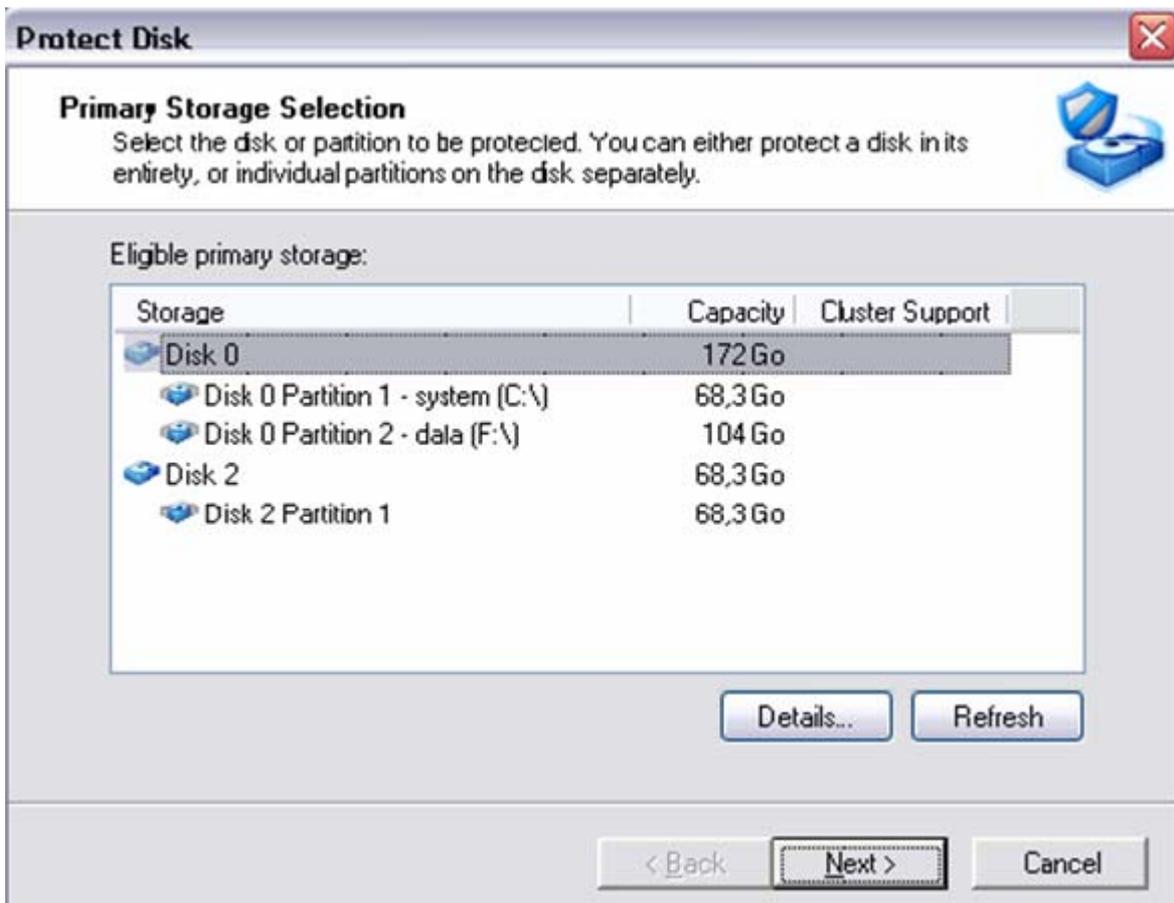
If your system integrates an EISA partition or any other hidden partition, you must protect the whole disk.

If Windows was not installed on the first partition of the first disk, and that you need to remotely reinitialize the system, you need to fully protect the disk (Disk 0). This is because Windows can be installed on another partition, but certain boot files are only stored on the first partition of the first disk.

## Quick start: Protecting a partition

- 1 Start DiskSafe: use one of these two methods:
  - Either run from Windows: **Start/Programs/DiskSafe**.
  - Or select the workstation icon: Right-click then select **Manage**.
- 2 Select **Protected Storage** then **Disks**.
- 3 Right-click **Disk** and select **Protect** to start the wizard.
- 4 Start the **Disk Protection Wizard**.
- 5 Click **Next**.

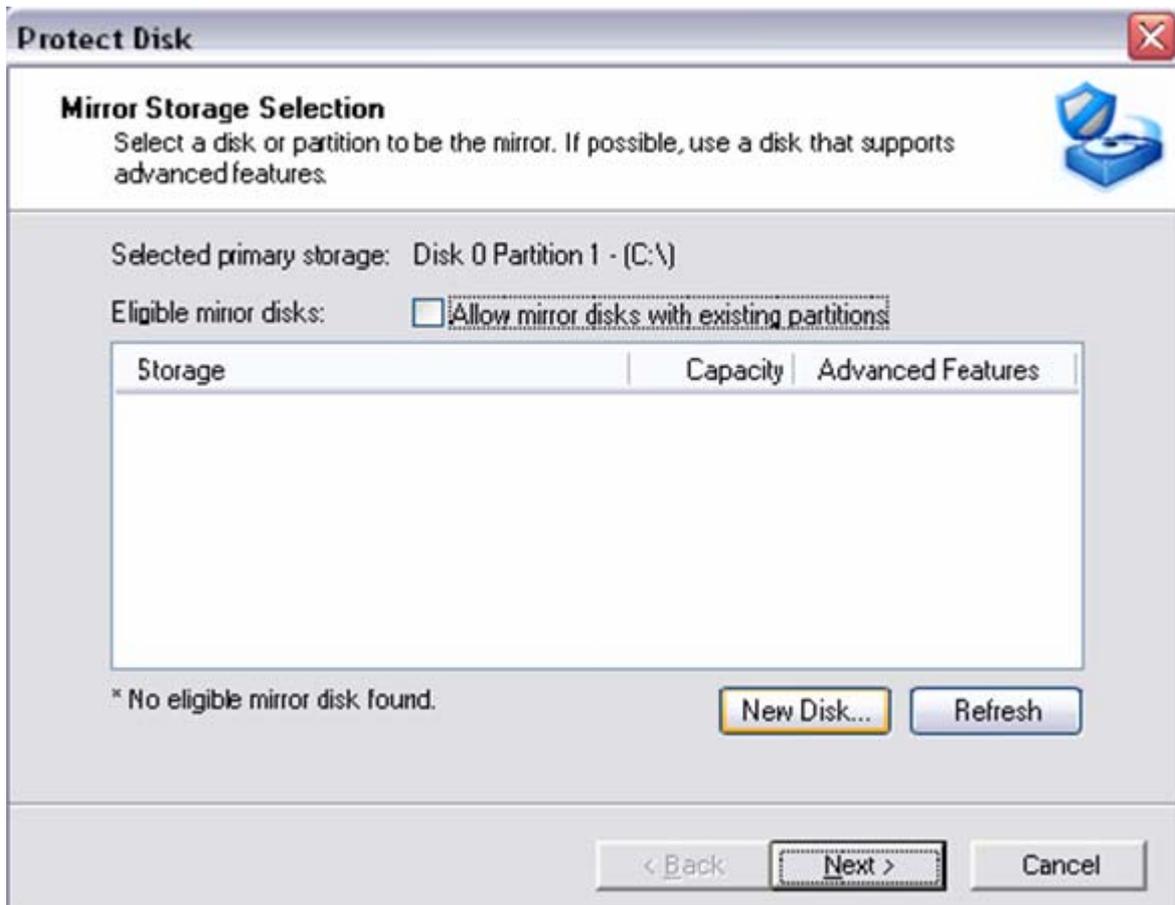
Select the disk or the system partition to protect.



- 6 Select system partition (disk) to protect, for example, the line Disk 0 Partition 1 - system (C :\).
- 7 Click **Next**.

### Storage space creation on the StoreWay DPA (ASM Space).

**WARNING:** For each partition for which you wish to create a dedicated storage space, you need to ensure you have an ASM space configured on the StoreWay DPA PLUS 20%. For example, if the total of your partitions to protect is equal to 150 GB, you need to plan for an ASM space when activating the StoreWay DPA of 180 GB. See the Quick Start Guide for more details.



8 Click **New Disk** to create the storage space on the Appliance.

### Declaring the StoreWay DPA.



9 Click **Add Server** to add the StoreWay DPA to the list.

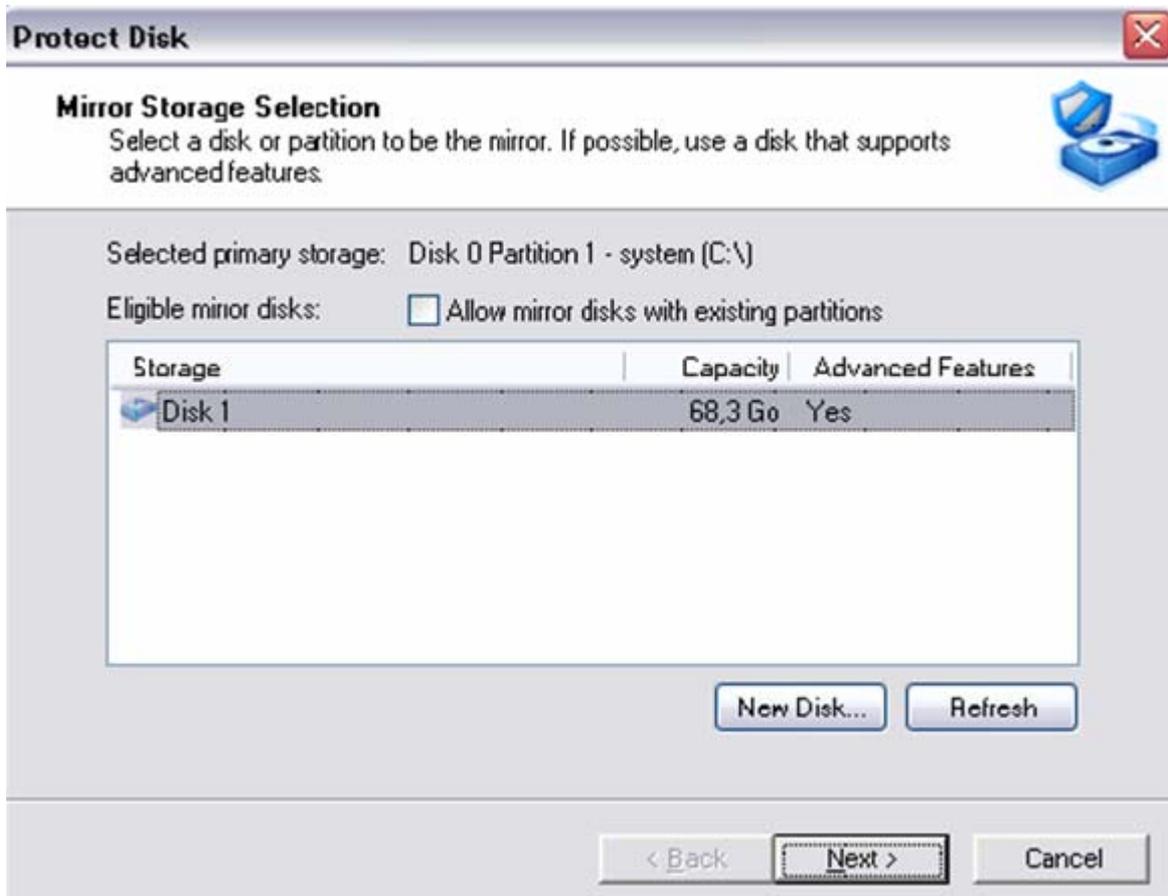
- Make sure you enter the StoreWay DPA name correctly.
- Enter the user name and administrator password for the appliance.
- Ensure that the iSCSI checkbox is selected.

10 Click **OK**.

11 Click **OK** to allocate storage space on the StoreWay DPA.

### Allocating reserved disk space on the StoreWay DPA.

The mirror is created as shown in the following screen:

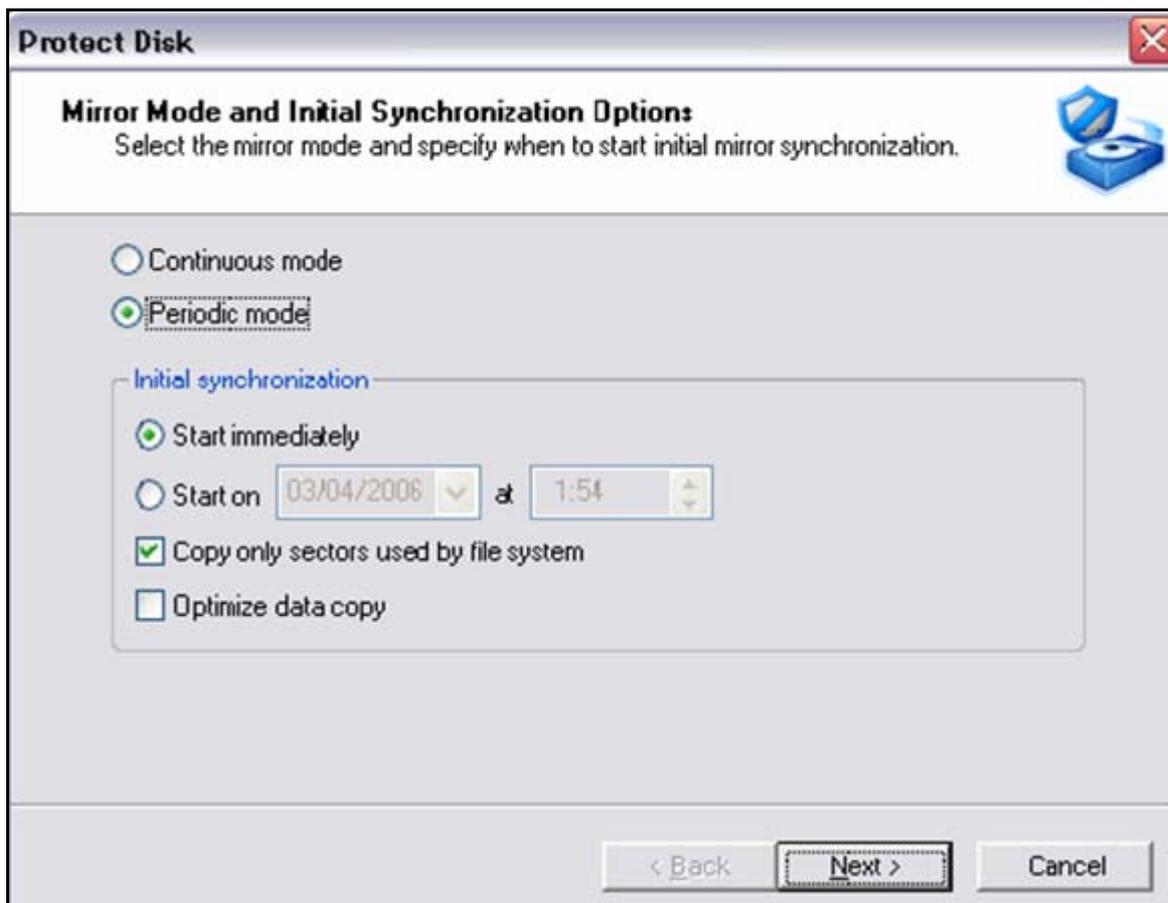


Option:

- > Allow mirror disks with existing partition: This option is used in cases where you have stopped protecting a disk or a partition and you want to protect them again by using the disk images already created on the StoreWay DPA on the ASM space.

12 Click **Next**.

## Configuring the type, frequency and synchronization parameter

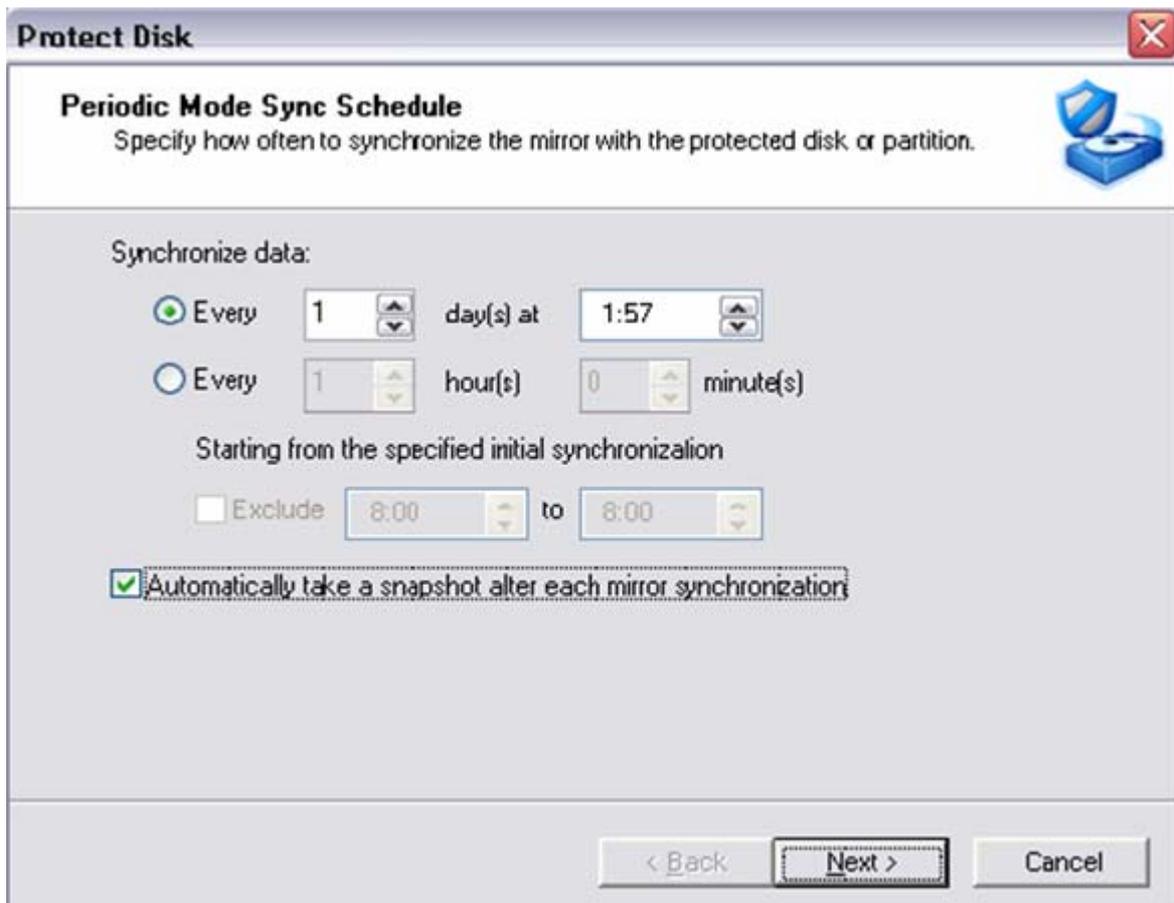


- 13 Select **Periodic Mode** and select **Start immediately** with the appropriate options.

### Options:

- > **Copy only sectors used by the file system:** If your disk is File System formatted, leave this checkbox selected. Only the sectors used by the file system will be copied to the StoreWay DPA. If you are protecting a database or any other application which uses raw disk space (not file system), clear this option. If you clear this option, all disk sectors will be copied to the StoreWay DPA. To optimize processing performances, this option is selected by default.
- > **Optimise data copy:** If this option is selected, DiskSafe scans the local disk and its StoreWay DPA mirror for 4KB blocks then copies these blocks to the StoreWay DPA. For low bandwidth environments, this can minimize the network impact in the event of a second synchronization. If this option is cleared, DiskSafe copies all data from the local disk to the StoreWay DPA mirror.

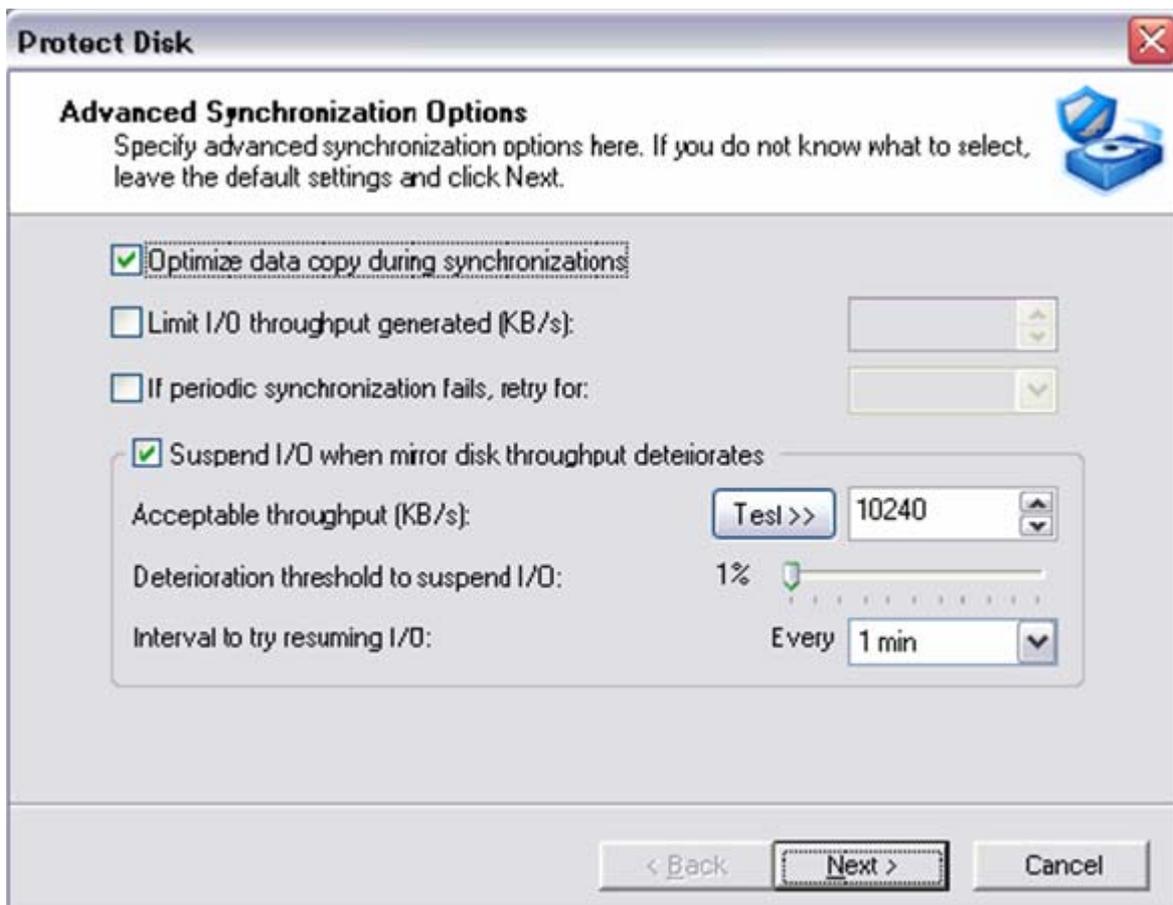
- 14 Click **Next**. Schedule a daily mirror synchronization by entering the date and time of your choice.



- > In Periodic Mode, you must select **Automatically take a Snapshot after each mirror synchronization** to ensure consistency and enable you to return to a prior version in the event of disk or data corruption. Click **Next**.

**Advanced options:**

- > This screen activates advanced options (optimization, bandwidth). Default parameters are used for standard configurations.



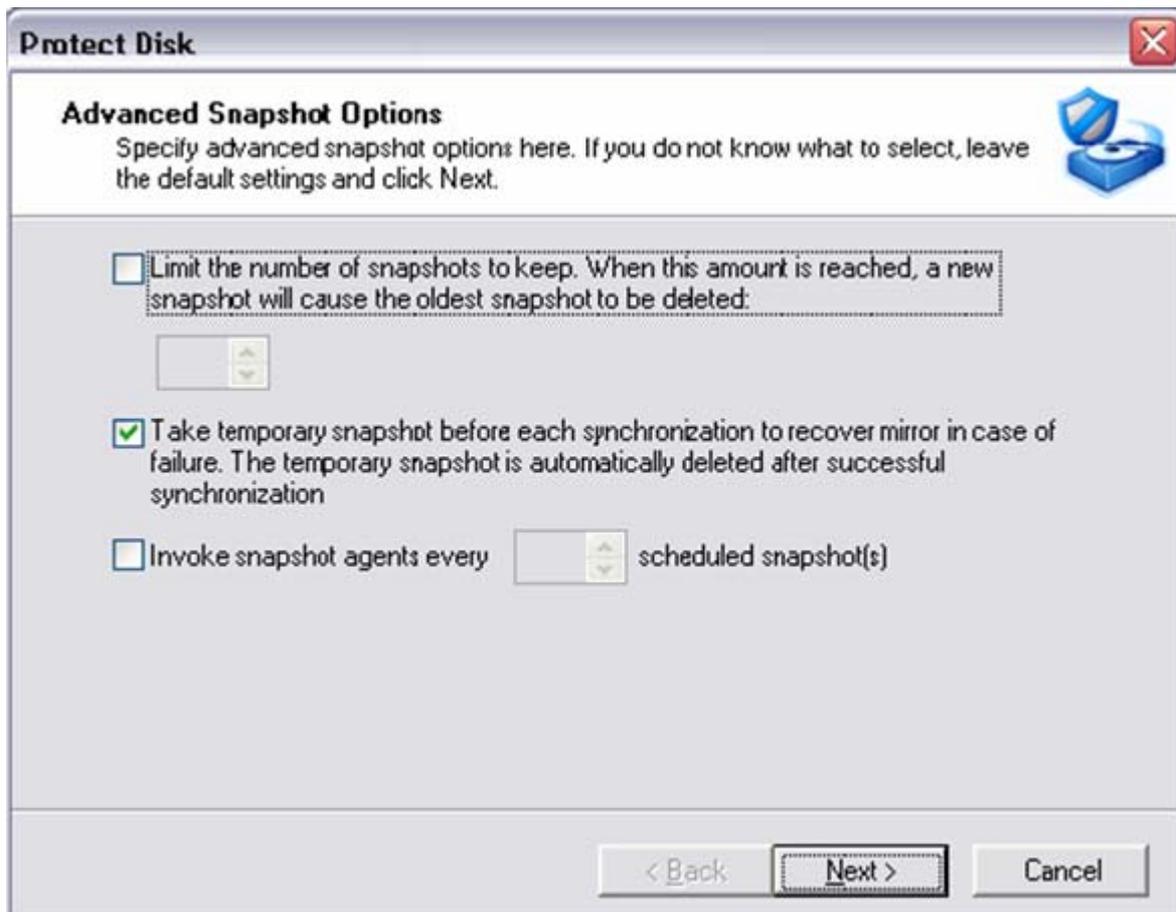
**Options :**

- > **Optimise data copy during synchronization:** If you select this option, DiskSafe scans for changes to the 4 KB blocks and copies them to the StoreWay DPA mirror. If you do not select this option, DiskSafe synchronizes 64 KB blocks.
- > **Limit I/O throughput generated (KB/s):** This option enables you to limit the speed at which data is written to the StoreWay DPA. If this option is selected, enter the acceptable throughput in KB/s in the adjacent field. If the throughput generated by DiskSafe exceeds this maximum, the mirroring will be temporarily suspended.
- > **If periodic synchronisation fails, retry for:** If the periodic mode is activated (as opposed to the continuous mode), you can specify the retry time (between now and the next synchronisation) when DiskSafe will attempt to synchronize the disk in the event of failure at the first attempt.
- > **Suspend I/O when mirror disk throughput deteriorates:** This option allows you to ensure continuous throughput even in the event of flow failure. This option is particularly useful in continuous mode. If the option is selected, specify the I/O: the maximum acceptable throughput in KB/s, the deterioration threshold to suspend the I/O and the interval to try resuming I/O (only in periodic mode).

15 Click **Next**.

## Configuring the number of Snapshots to keep.

- This screen allows you to limit the number of Snapshots to be kept on the StoreWay DPA.



### Options:

- > **Limit the number of Snapshots:** You can limit the number of available Snapshots: from 1 to 32 Snapshots on line on the StoreWay DPA. Adjust this value to keep a realistic and sufficient amount of your disk Snapshots.
- > **Invoke Snapshot agent** Select this option if you have already installed or wish to install a Snapshot agent to guarantee database or file system consistency (see the StoreWay DPA compatibility guide). When you select this option, DiskSafe calls the Snapshot agent to guarantee the consistency of protected data.

**16** Configure the number of Snapshots to keep and click **Next**.

### Completing the Disk Protection Wizard.

**17** Click **Finish** to close the wizard.

**NOTE:** If you selected **Start Immediately** in the Protect Disk window, Initial Synchronization section, the system protection starts immediately.

### Setting a restoration security.

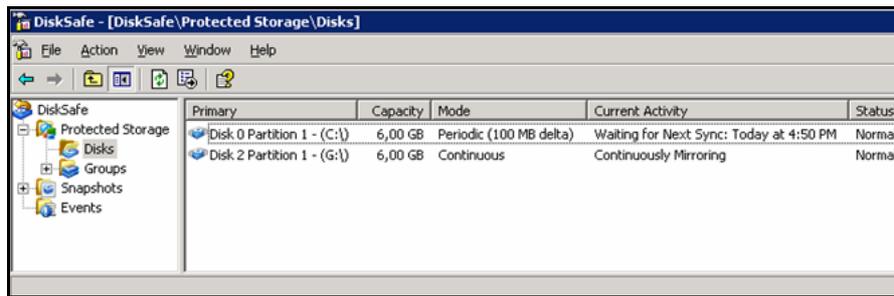
**NOTE:** In the event of a complete disk system backup (use of the recovery CD-ROM), it is important to configure the recovery password which will be used for complete system restorations after a crash.

**18** In the main DiskSafe window, right-click on **DiskSafe** and select **Recovery CD/ Set Password**.

**19** Select the StoreWay DPA, enter the password and click **Set password**. Close the window.

## Displaying disk protection

- > Click **Protected Storage** then **Disks** to display existing system protections.



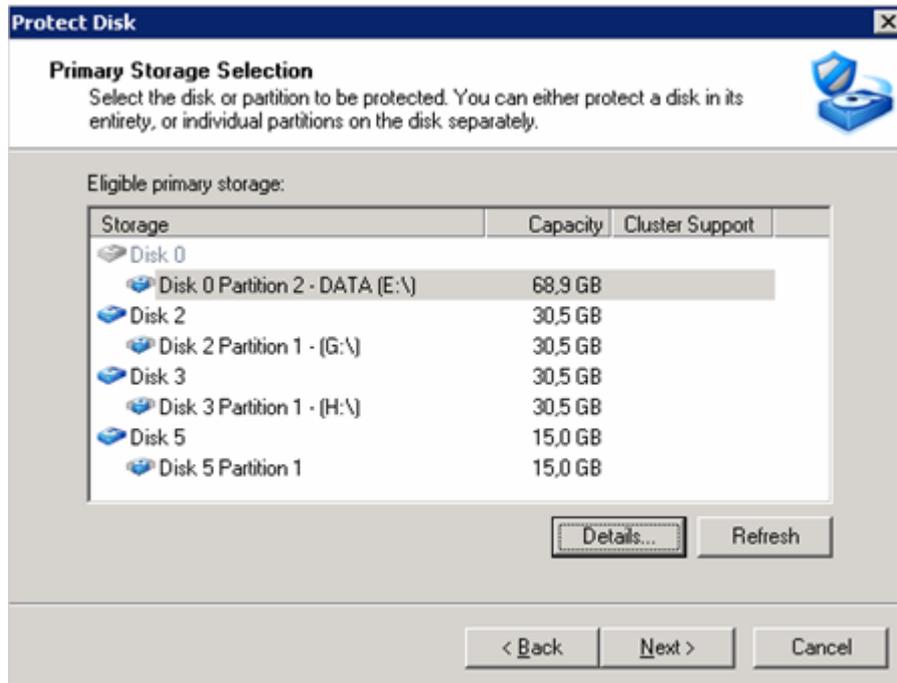
### Value:

- > **Primary**: Local disk or partition name.
- > **Capacity**: Local disk or partition size.
- > **Mode**: Programmed synchronization type: Periodic or Continuous.
- > **Current activity**: Description of current activity, for example, "Continuously mirroring, waiting for initial Sync".
- > **Status**: The status of the disk partition.

## Protecting several partitions: overview

To protect several partitions, you must repeat the procedure for other eligible partitions.

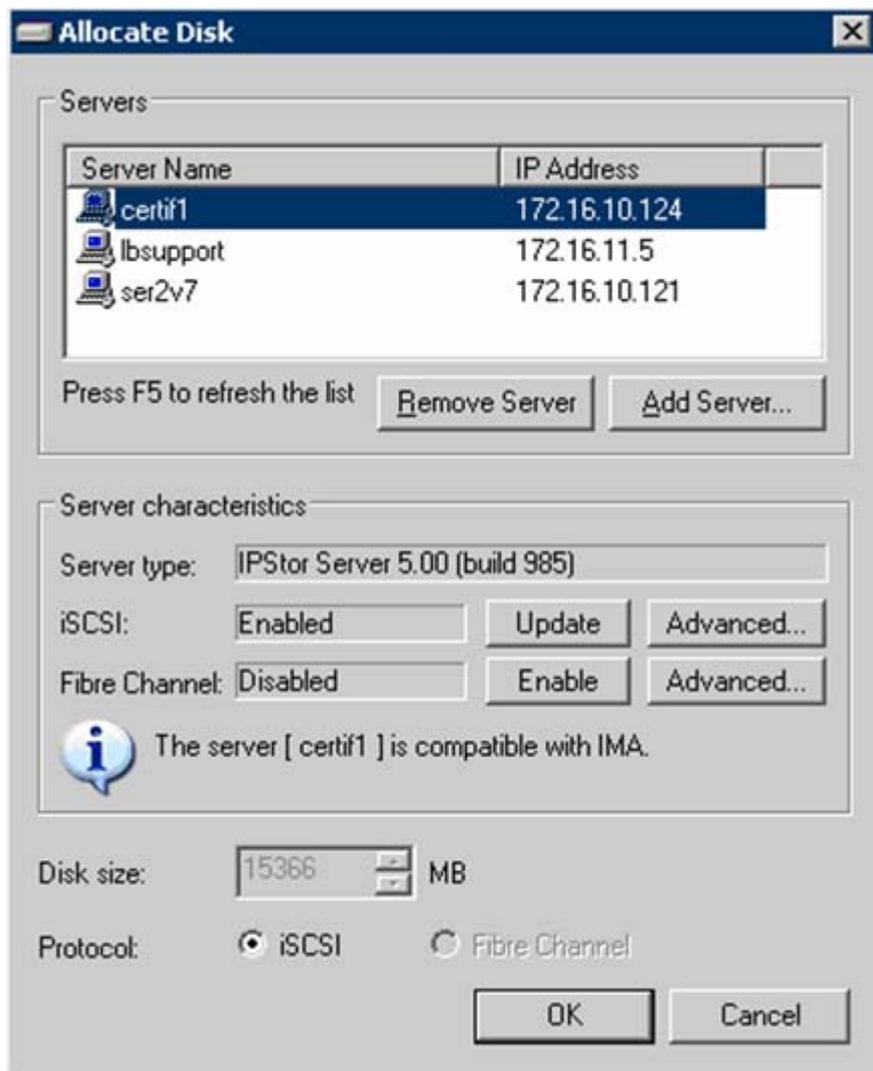
- 1 Select a disk or partition to protect.



- 2 Click **New Disk** to allocate the mirror on the StoreWay DPA .

**NOTE:** This window indicates if local partitions or local disks can be used as mirrors for the disk selection in action 1. This mode is not supported by StoreWay DPA, only synchronized partitions or disks on the StoreWay DPA are valid.

Choice of StoreWay DPA or the creation of a new StoreWay DPA on which the disks or partitions will be synchronised.



> Allocating storage space on the StoreWay DPA.

## Disk protection groups: overview and configuration

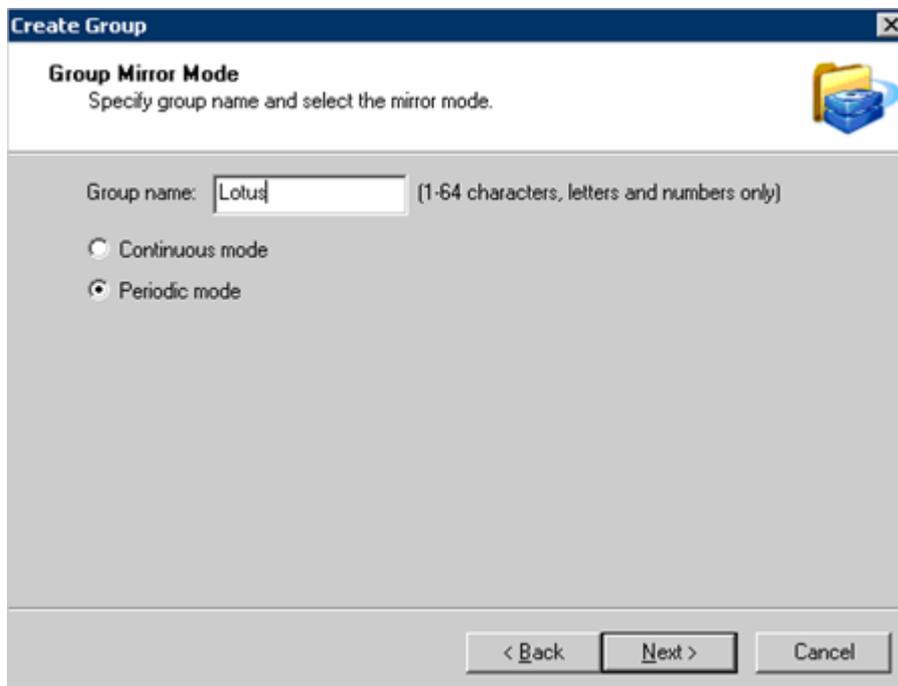
To protect two or more disks or partitions, you can put them into a group.

Create groups which link different disks or partitions together for synchronizations to take place at the same time.

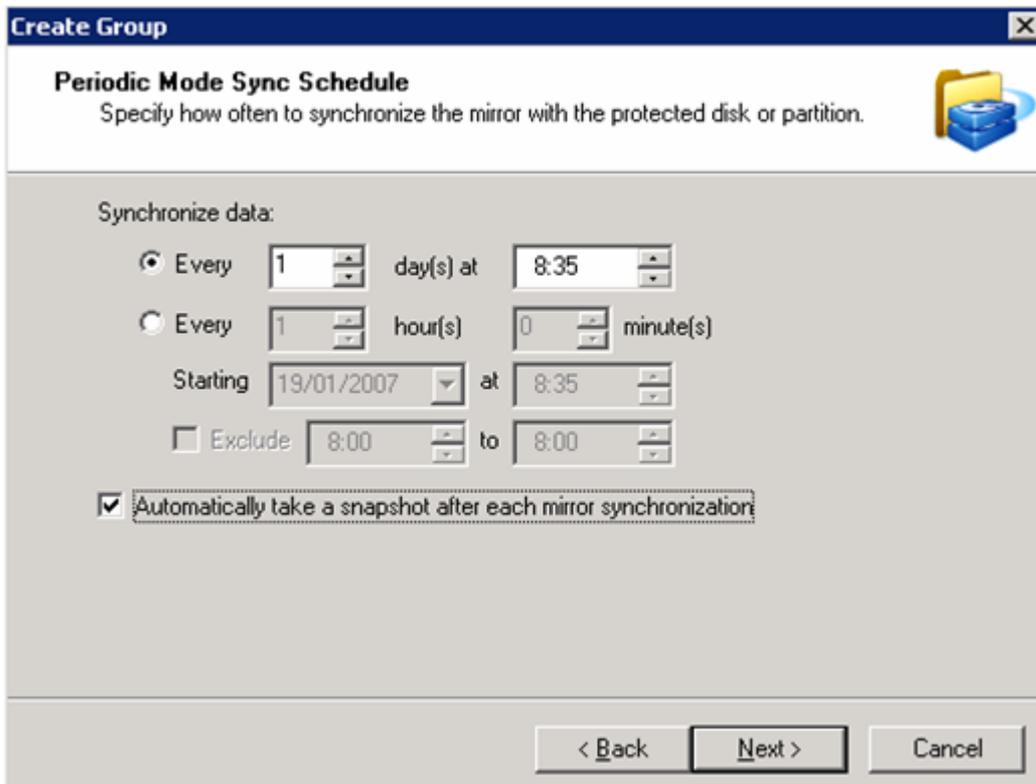
**EXAMPLE:** If a database uses different disks or partitions for data, logs and control files, organize a protection for each disk or partition and put them into the same group for the Snapshot to be performed at exactly the same time.

### Create a group of disks or partitions

- 1 Creating a group
  - Select **Protected Storage** then **Group**. Right-click and select **Create**.
- 2 Group creation wizard start up.
  - Click **Next**.
- 3 Specifying a group name and choosing the synchronisation mode.

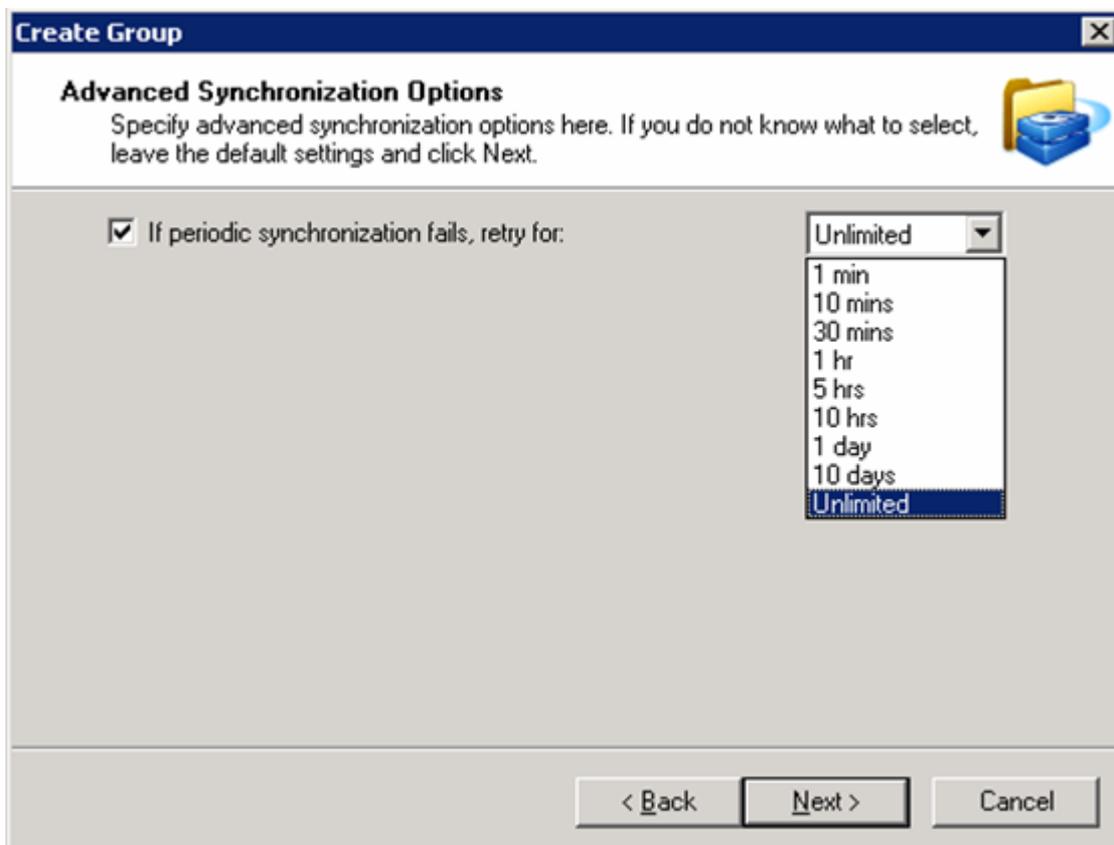


- Select **Periodic mode**, then click **Next**.
- 4 Planning synchronisations using Snapshots.



- Configure a programmed Snapshot by activating the option **Automatically take a Snapshot after each mirror synchronisation** to ensure consistency and be able to roll back to a prior version if the disk or data are corrupted.
- Click **Next**.

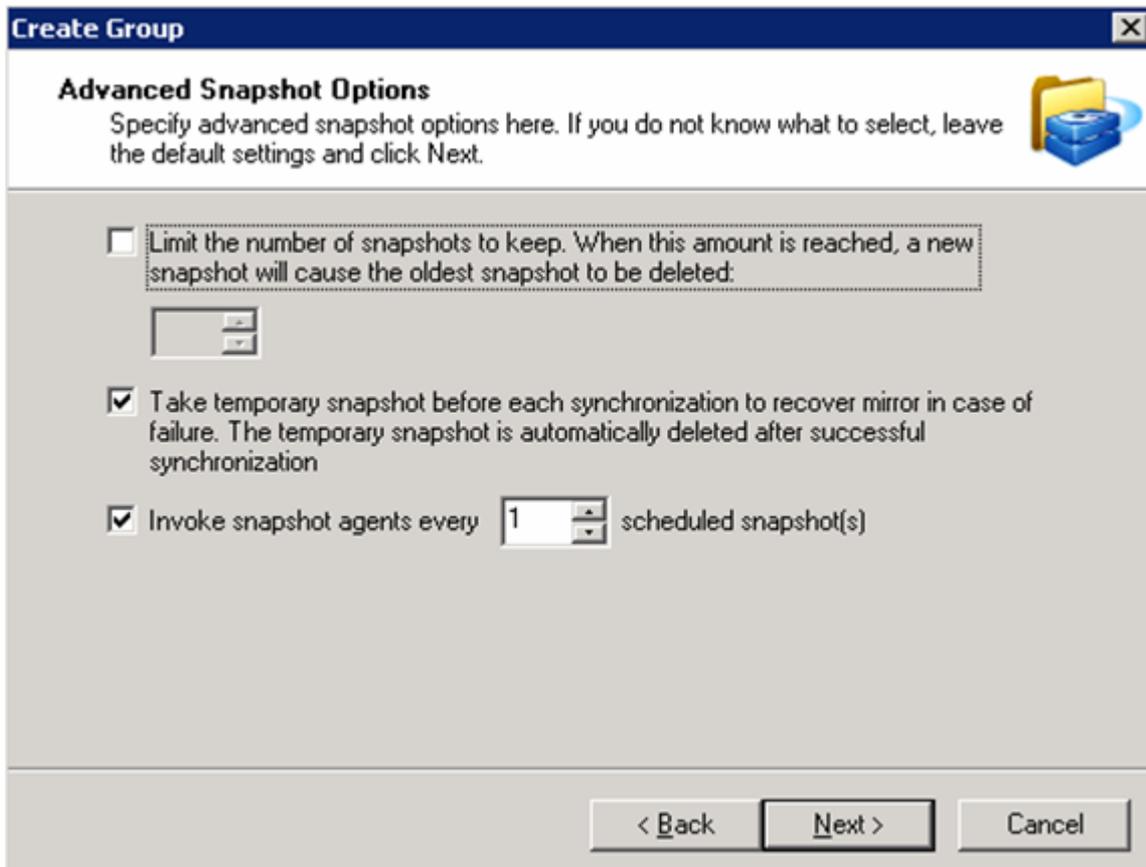
5 Retry option if synchronization fails.



- You can programme a retry period in the event of a synchronization failure.
- Click **Next**.

**6** Configuring the number of Snapshots to keep.

- This screen allows you to limit the number of Snapshots kept on the StoreWay DPA (maximum number: 32).
- Synchronization with the “open base” agent.



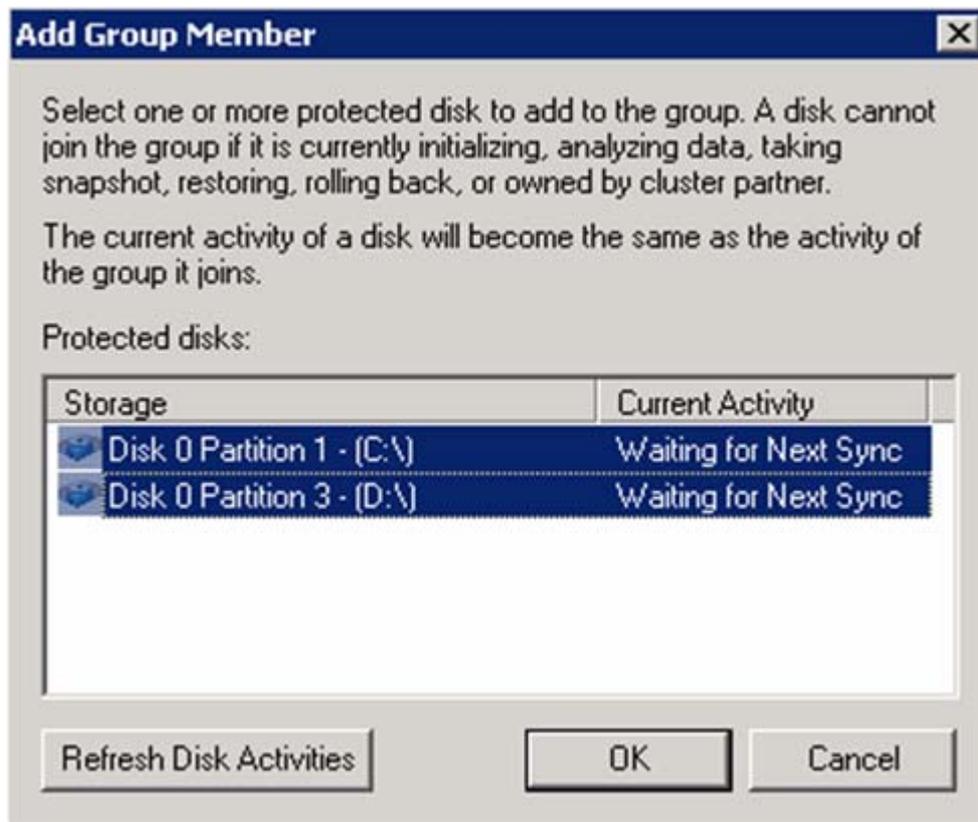
- Click **Next**.

**7** End of wizard summary.

- Click **Finish**.

**8** Adding a partition or disk to the newly-created group.

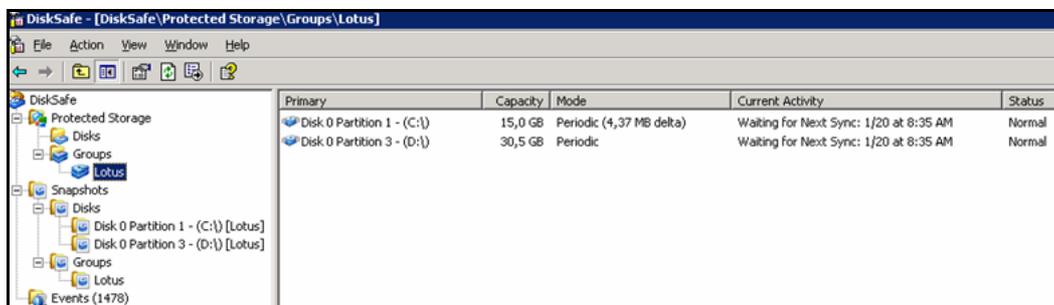
- At the end of the wizard, DiskSafe offers to add members into the new group.
- Click **Yes**.



- Select the disks or partitions to add and click **OK**.

9 Displaying the group in the DiskSafe Group tree structure.

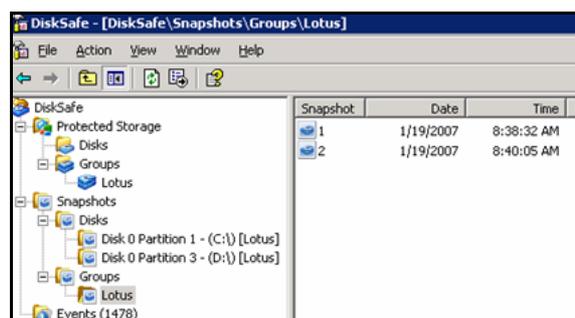
- Group details:



- Take an immediate Snapshot: Select the group, right-click then select **Advanced/Take Snapshot**.

**NOTE:** This request will synchronise all disks or partitions associated with the group at the same time.

10 Displaying the Snapshots performed in the **Snapshot/Group** menu.



**NOTE:** You cannot mount a "Group" Snapshot.

**11** Displaying «mountable» Snapshots in the **Snapshot** menu:

- Click on each disk to display the most recent Snapshots taken of the disk.

**NOTE:** The different group Snapshots are labelled in the **Group** column with the name of the group they belong to. These different Snapshots can be mounted.

**NOTE:** A mounted partition is accessible from the Windows Explorer interface.

---

## Chapter 4. Restoration – Retrieving protected data

See:

["Snapshot: an overview" page 34](#)

["Mounting a Snapshot" page 35](#)

["Using the Disk Manager to mount a Snapshot" page 37](#)

["Retrieving data by copy and paste" page 38](#)

["Restoring a disk or a partition" page 40](#)

["Reactivating disk or partition protection" page 42](#)

## Snapshot: an overview

The Snapshot is a precise image of the mirror. Given that the mounted Snapshot is a standard base disk view of the mirror plus saved modified data in the Snapshot section, no extra disk space is required.

**WARNING:** A mounted Snapshot is not a production disk. Any change to this mounted Snapshot will be immediately lost as soon as the Snapshot is dismounted.

**WARNING:** The partition is temporarily mapped during the restoration phases. Therefore it is not recommended to mount it automatically at server or workstation start up.

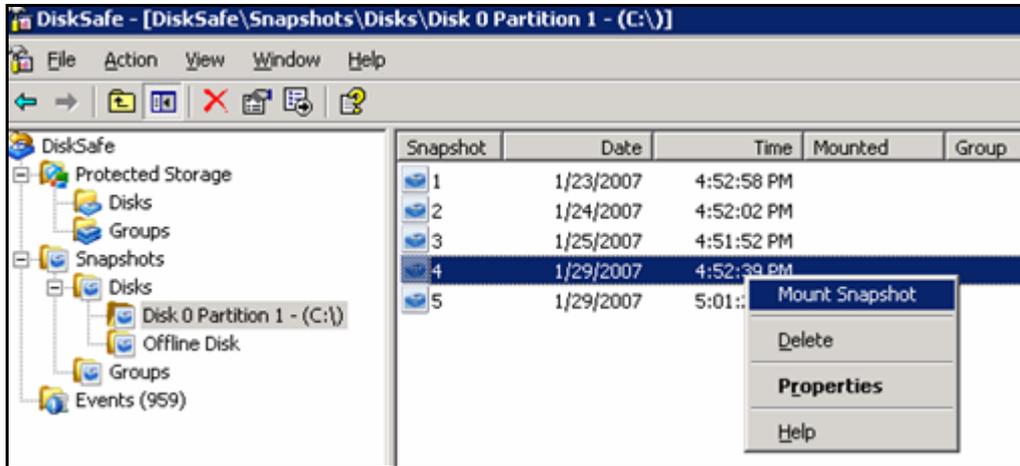
A mounted Snapshot enables missing or damaged data to be restored (directories, files,..) without causing production downtime simply by copying and pasting or drag and drop. Up to 32 Snapshots can be kept on the StoreWay DPA. Once this number is reached, the oldest Snapshot will be overwritten to free space for the latest.

Retention periods therefore depend on how you configure Snapshot frequencies.

# Mounting a Snapshot

## Mount a Snapshot

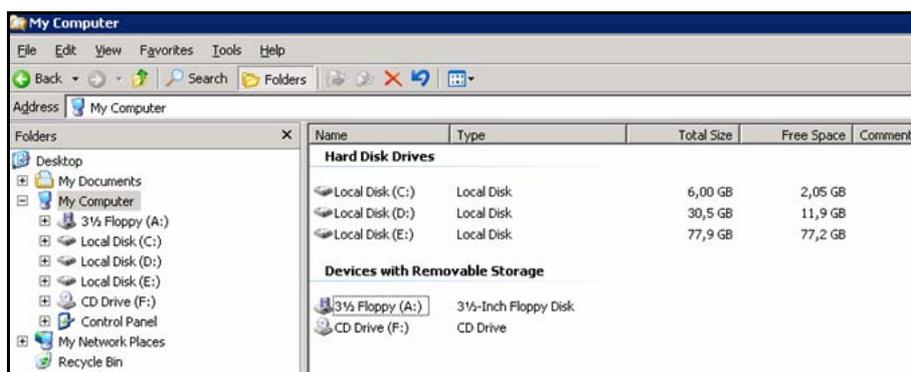
- 1 In DiskSafe, open the **Snapshots/Disks** menu and select the partition to mount. In the right-hand part of the DiskSafe window, select the Snapshot to mount and right-click to select **Mount Snapshot**.



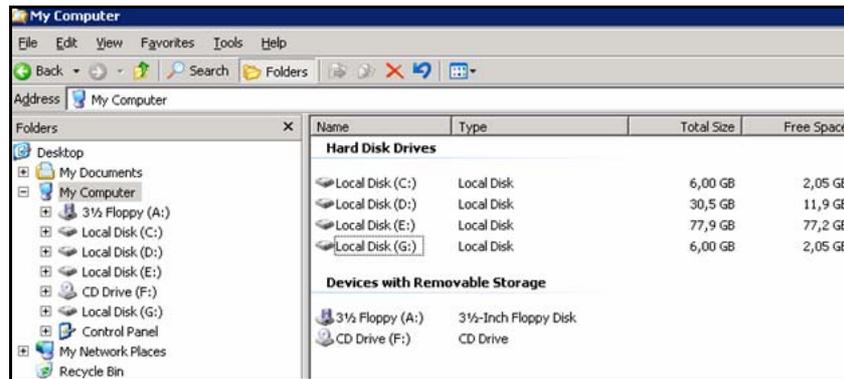
If you see **Yes** in the **Mounted** column, it means that a Snapshot is mounted and operational using a Windows Explorer.

Snapshot	Date	Time	Mounted	Group
1	1/23/2007	4:52:58 PM		
2	1/24/2007	4:52:02 PM		
3	1/25/2007	4:51:52 PM		
4	1/29/2007	4:52:39 PM	Yes	
5	1/29/2007	5:01:25 PM		

- 2 In a Windows Explorer, display the mounted snapshot as follows:  
Before mounting, three disks are visible.



After mounting, a fourth disk is available.



- The C:\ disk mirror is mounted and this disk's data is accessible.

**NOTE:** If the partition is not mounted in the Explorer or via the Windows workstation:

If the first available connection letter after the local disks is mapped to a shared network partition you will need to open the system's Disk Manager and modify the letter associated with the mounted Snapshot for it to become accessible (see below).

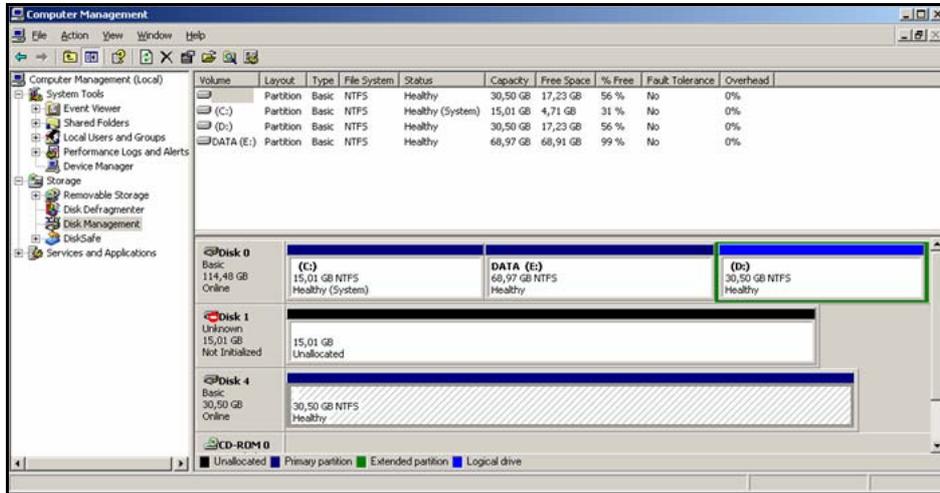
**EXAMPLE:** If the system is mapped to C:\, the CD-ROM to D:\ and a shared network partition to E:\ and you mount a Snapshot, the letter E:\ will always be attached to the shared network partition and cannot see the Snapshot. It is also internally mounted on the E:\ partition because this is the first available letter after the local partitions.

You need to open the Disk Manager to modify the letter associated with the mounted Snapshot E: to F: for example. This means the Snapshot will be accessible via the Windows Explorer on F:\.

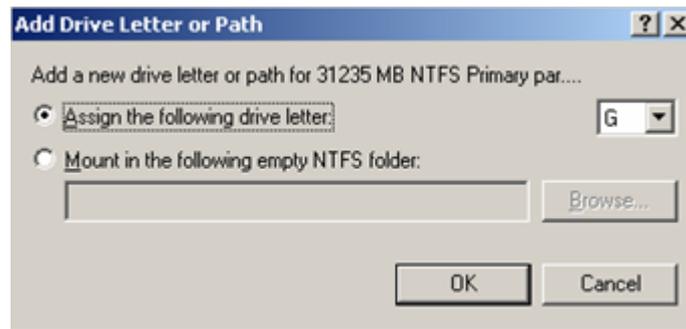
**WARNING:** If the oldest Snapshot is mounted and a new Snapshot is planned or requested, the second Snapshot cannot be performed until the previous snapshot has been dismounted.

## Using the Disk Manager to mount a Snapshot

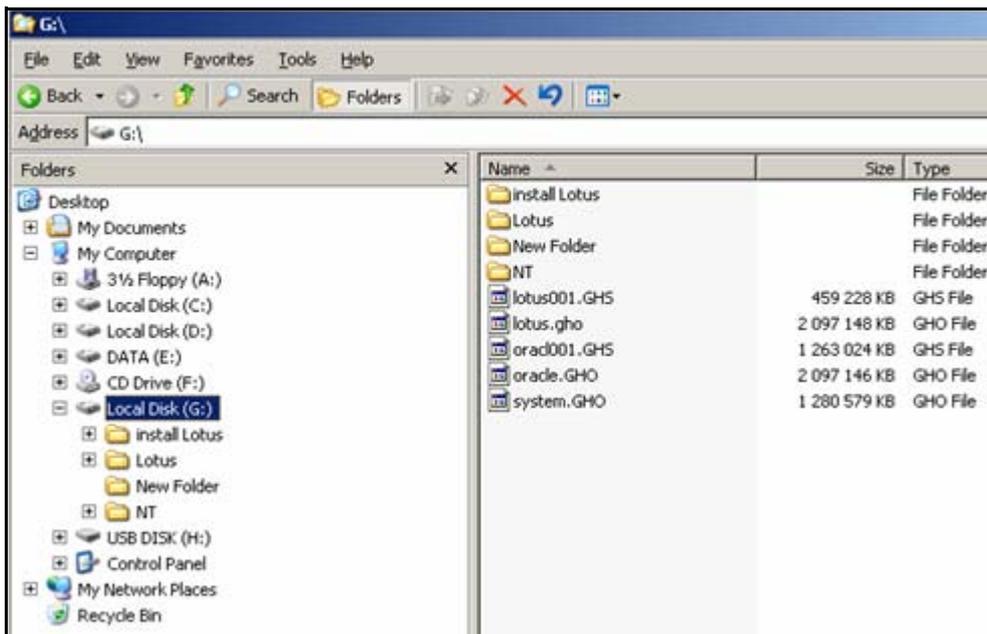
The mirror partition must be mounted and mapped automatically on the first available letter and be considered as a local disk. In the case where the partition is not automatically mapped, you need to use the **Disk Manager**.



Select the partition and assign a partition letter.



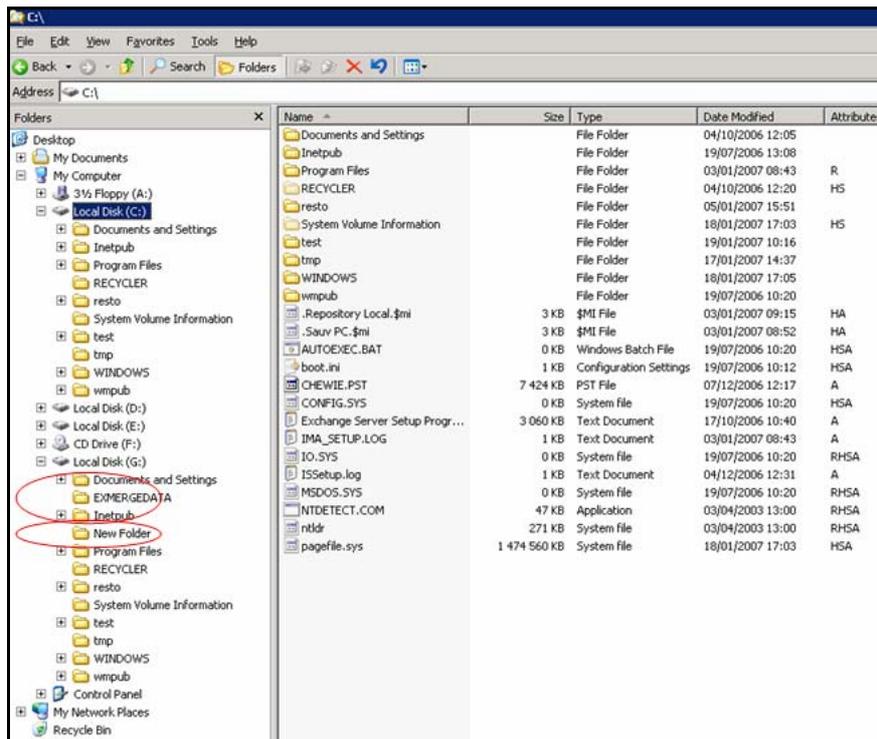
Local mounting the mirror partition.



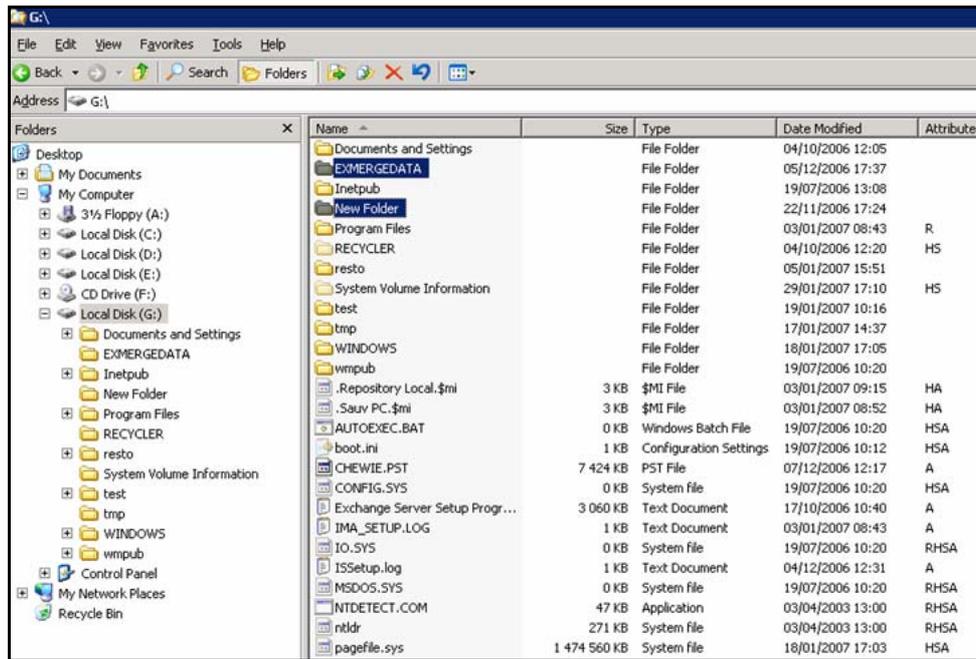
## Retrieving data by copy and paste

**EXAMPLE:** Loss of two folders on the C: partition (**EXMERGEDATA** and **New Folder**).

- 1 Mount the Snapshot. (See the previous chapter.)
- 2 Retrieving data.
  - On C:\ (Local Disk): These two folders are not visible (they have been lost).
  - On G (Local Disk mirror): Snapshot mounted from the StoreWay DPA. These two folders are visible.



- Select the data to restore on G: (mirror disk on the StoreWay DPA), **EXMERGEDATA** and **New Folder** in our example, then copy and paste them from G:\ to C:\ or any other place where you might want to exploit this data.



- Once this data is copied from G:\ to C:\ in our example, the data is immediately available on the C:\ partition:

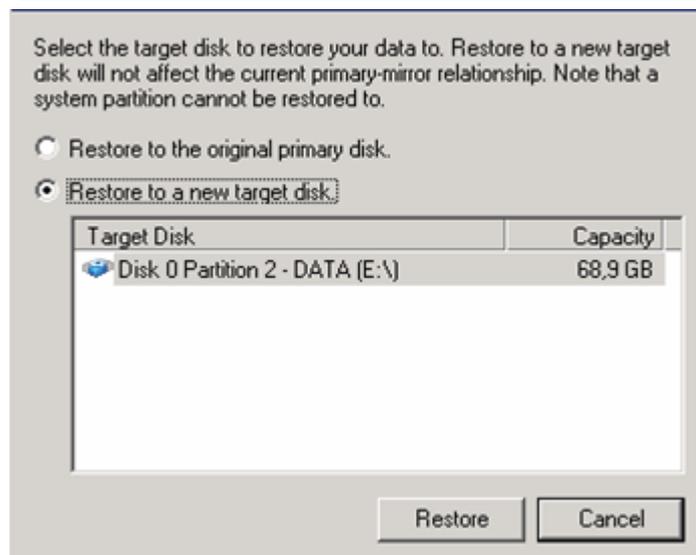
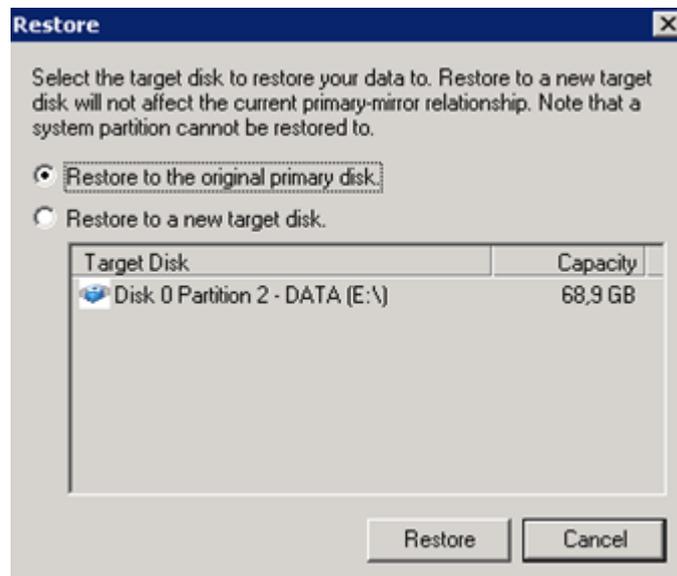
## Restoring a disk or a partition

Using the DiskSafe application, you can restore a remote mirror (StoreWay DPA) of a protected disk to the primary disk or to a different disk. You can also restore a system disk to another disk.

The only data restoration limits are when the system does not function correctly (when the disk or operating system are down). In this event, you will not be able to restore a system disk system to the original primary disk or restore Snapshots. In addition, you cannot restore a disk or partition as long as no other DiskSafe operation is in progress (synchronization, data analysis, Snapshot, ...).

### Restore a disk or partition

- 1 Select the disk to restore.
  - In DiskSafe, select **Protected Storage** then **Disks** or **Groups** (if the disk or partition you want to restore is part of a group).
- 2 Start the restoration.
- 3 Right-click the disk or partition you want to restore and click **Restore**.
- 4 Select and restore the data.

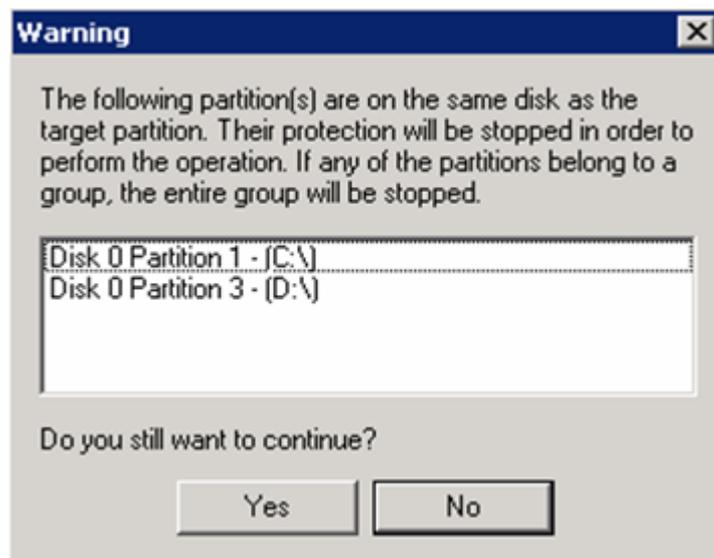


- Restore data according to these instructions:

Restoration target	Instructions
The primary disk	Click <b>Restore</b> , option <b>Restore to the original primary disk</b> . <b>Note:</b> You can choose this option only if the selected disk or partition is not the system disk.
A new disk	Click <b>Restore</b> , option <b>Restore a new target disk</b> . <b>Note:</b> You can choose this option only if the size of the target disk or partition is equal/greater than a StoreWay DPA mirror partition. Note that only inactive partitions can be chosen as targets. If you restore a system disk, the system you are restoring data to must be identical to the original system. For example, if the original system had a specific type of network connector, the system you want to restore on must have exactly the same type of connector. If not, restored files will not function correctly.

- Click **Restore**: all StoreWay DPA mirror data is restored to the chosen place.

**NOTE:** If the partitions are on the same disk as the partition you are restoring, the protection is stopped (and must be restarted at a later date). If partitions belong to a group, the protection for all the group will be stopped.



**NOTE:** You can stop the restoration at any point. If you do so, the target disk or partition remains incoherent and unusable. You must repeat the restoration.

#### 5 Completing the restoration.

- When the DiskSafe information window appears indicating that the restoration is complete, close this window.
- Restart the system.

**NOTE:** You cannot access a disk or partition before the system reboot.

**WARNING:** Dynamic partitions configured on several disks are not supported for restoration. Only Disaster Recovery is possible from the Recovery CD.

**NOTE:** If Windows does not automatically allocate a letter to your restored disk or partition, use the Disk Manager to allocate one. If you restore a dynamic disk, use the Disk Manager to activate each disk.

- Run DiskSafe to reactivate component protection for each disk or partition you have just restored.

## Reactivating disk or partition protection

### Reactivate disk or partition protection

- 1 Select the disk to restore on DiskSafe. Select **Protected Storage** then **Disks** or **Groups** (if the disk or partition you want to restore is part of a group).
- 2 In the right-hand pane, right-click on the disk, partition or group for which you want to reactivate the protection. Click **Resume**.

If the disk or partition uses continuous mode, the synchronization will occur immediately. If the **Periodic Mode** is programmed, the synchronization will occur at the next programmed synchronization.

---

## Chapter 5. Logs and reports

["DiskSafe Events" page 44](#)

["Personalizing events" page 45](#)

["Viewing event details" page 46](#)

["Taking an X-ray file" page 47](#)

## DiskSafe Events

These events are visible in the program **DiskSafe/Events**.

Logs contain all the information collected by DiskSafe, such as the logs produced by the system, when the protection was performed for a disk or a partition, when synchronisation analysis takes place etc.

This information comes from the Windows system and application logs Event Viewer.

**NOTE:** If the Windows log files are full, recent DiskSafe events will not be consultable. Use the procedure adapted to your Windows operating system to purge the logs.

You can define a range to view events for a specific period or target an event severity to consult. For example, you can limit event viewing to specific dates or types of events.

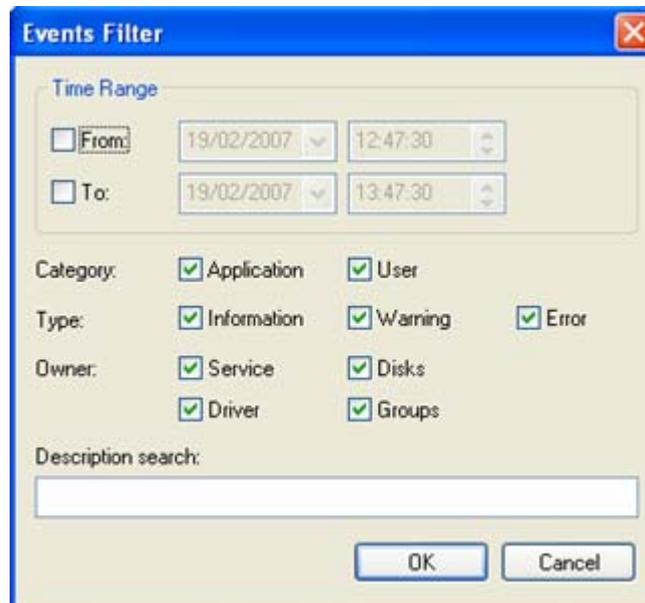
You can also run searches on words or phrases which are specific to a field description.

If a problem arises during the synchronization or any other DiskSafe operation, these events explain the problems encountered.

# Personalizing events

## Personalize the list of events

- 1 In DiskSafe, select **Events**, then right-click **Events**, and select **Set Filter**.



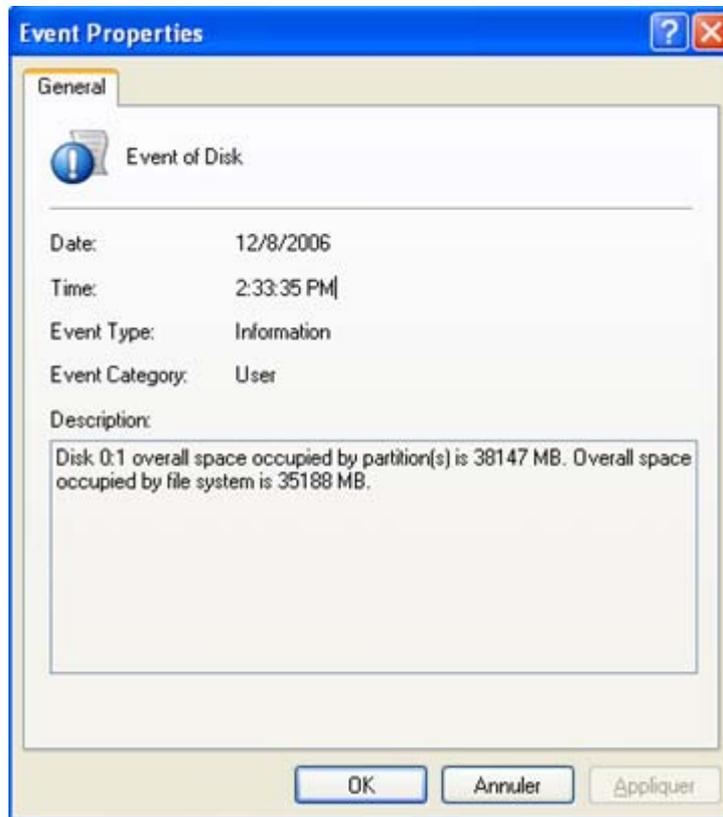
- 2 Specify a date range:
  - From
  - To
  - From and To
  - You can filter to only view one "Category", "Type" or "Owner".
  - You can specify a word or phrase in the **Description search** field.

Options	Description
<b>Application</b>	> Events started by DiskSafe such as programmed Snapshots.
<b>User</b>	> Events started manually by the user such as data analysis.
<b>Information</b>	> Events resulting from a successful operation such as a successful synchronization.
<b>Warning</b>	> Events which are not necessarily significant but which may indicate problems such as a programmed synchronization which did not occur because the StoreWay DPA (mirror) was unavailable.
<b>Error</b>	> Events which show major problems, such as the synchronization failure due to an unexpected problem.
<b>Service</b>	> Events associated with the DiskSafe service such as a service starting or stopping.
<b>Driver</b>	> Events generated by the DiskSafe "kernel drive" such as a driver change or disk detection.
<b>Disks</b>	> Events linked to protected disks activities such as the protection or synchronisation set up.

## Viewing event details

### View details of a specific event:

- 1 Select **DiskSafe/Events**.
  - In the right-hand part of the window, select an event, right-click on this event and select **Properties**.



- 2 Click **OK** to close the dialog box

## Taking an X-ray file

In some case, you may need technical assistance from our hotline for the DiskSafe agent. To provide us with the all the necessary information and to help you solve any issues as quickly as possible, the hotline team will ask you to generate an agent log file (X-ray = troubleshooting file).

### Create an X-ray file

- 1 Right-click **DiskSafe** and run **Take X-Ray**
- 2 Save the file to disk to be able to send it to the hotline team.

---

## Chapter 6. Managing DiskSafe licenses

See:

["Entering product keys" page 49](#)

["Retrieve the activation file" page 51](#)

## Entering product keys

If the Windows server does not manage to connect to the ASM license activation server, follow this procedure.

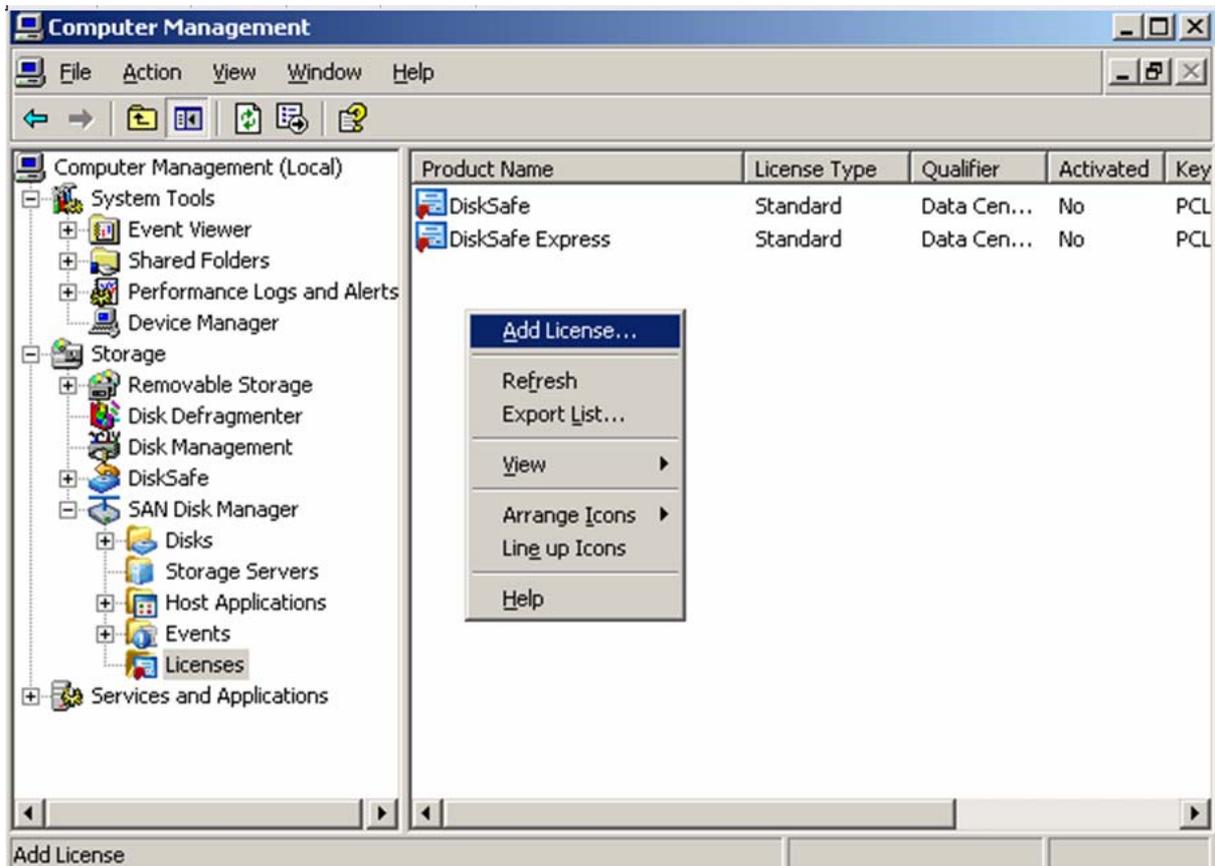
### Enter the product keys

You have received your Product Keys. The keys concern ASM modules and need to be registered in the SAN Disk Manager on your Windows server.

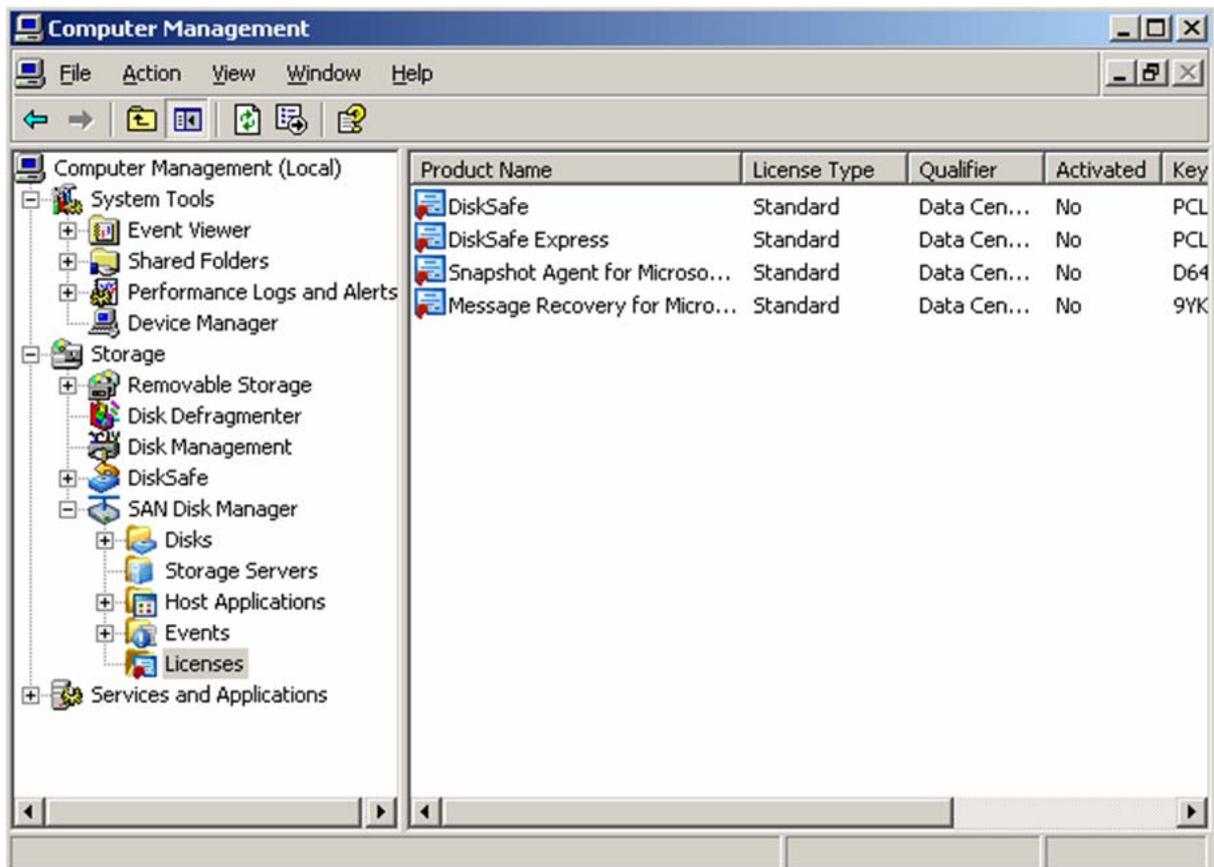
- > To access the SAN Disk Manager, you can:
  - Select **start/Programs/SAN Disk Manager**.

In the SAN Disk Manager, click on **Licences** : the licences which are already activated are listed on the right and **No** is displayed in the **Activated** column.

- Right click in the right-hand zone and select **Add license**.



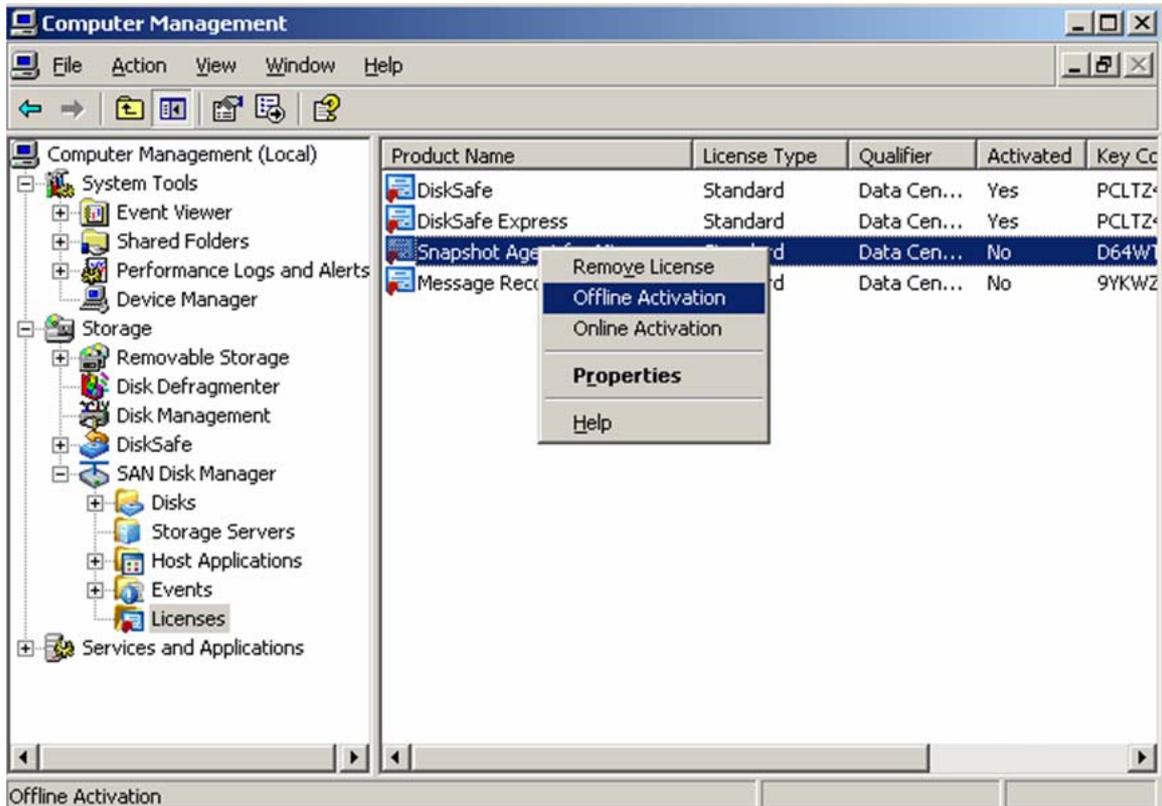
- > Enter the key for the product you wish to add.
- > Repeat this operation for each product to add.
- > At the end of the operation, if you have purchased DiskSafe, Exchange Snapshot and Message Recovery for Exchange modules, you will have a list similar to this:



## Retrieve the activation file

For each product key you need to retrieve the activation file.

- 1 In the SAN Disk Manager, open the list of licences.
- 2 Click on one of the products and select **Offline activation**.



- 3 In the next window, click on the **Export license file** button, save the activation file to your disk. Select a new name for each activation file you export.



- 4 Send all your activation files to <http://support.bull.com/ols/online/keys>

#### Receiving licence files from Bull

- > The Bull Support team will send you your licence files.
- > Receive these files and save them to your Windows server disk.

#### Import your licence files in the SAN Disk Manager.

- 1 In the SAN Disk Manager, open the list of licences.
- 2 Click on one of the products and select **Offline activation**.
- 3 In the next window, click on the **Import license file** button, save the activation file to your disk. Select the licence file for each corresponding product on your disk.

Your licence has been imported and you product is now activated.



- 4 Check the state of your product activation in the SAN Disk Manager in the **Activated** column.

---

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