

Application Note

Infortrend[®]

Data Protection for Exchange Servers Using Infotrend SANWatch Snapshot and Symantec Backup Exec 11d through Microsoft VSS

Abstract

This document describes how to use Infotrend SANWatch Snapshot and Symantec Backup Exec 11d to do Exchange server backup through the coordination enabled by Microsoft Volume Shadow Copy Service (VSS).

Infotrend[®] Technology, Inc.

Networked Storage Solution Provider

Revision 2.0

June, 2008

Infotrend Technology makes no representations or warranties with respect to the contents hereof and specifically disclaims, any implied warranties of merchantability or fitness for any particular purpose. Infotrend reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation to notify of such changes.

Infotrend, Infotrend logo, and EonStor are registered trademarks of Infotrend Technology, Inc.

Snapshot Technology Streamlines Backup Operations

Downtime and loss of data are two of the most intimidating threats to business operation. Besides inestimable profit loss and restoring efforts, they may even lead to legal issues. To achieve business continuity and data protection, how to do efficient backup and recovery is both a necessary concern and an unavoidable challenge. Before the invention of snapshot technology, traditional backup and recovery operations (full backup/full restore) suffer from some common annoyances, such as the difficulty of backing up running applications, prolonged backup time, lengthy recovery procedures, poor application server performance during backups, and rapidly consumed capacity. Snapshot technology efficiently addresses these problems by enabling the creation of point-in-time copies. These copies keep only data differentials, so they can be created in a few seconds, exert almost no influence on the application server performance, and occupy little disk space. When a snapshot image is taken, host IO is temporarily held; therefore, these copies are also quite reliable. Its impact to the live application is reduced to the few-second suspension of IO. When full backup is necessary, backup server will take over the task of copying data snapshot to backup media, thus allowing application servers to concentrate on its application operations. (To know more about snapshot technology, please refer to “Snapshot Technology Improving Data Availability and Redundancy”

http://www.infortrend.com/main/3_support/brief_snapshot.asp)

(To know more about Infortrend SANWatch snapshot, please refer to “Backup and Recovery by Using SANWatch-Snapshot”

http://www.infortrend.com/main/3_support/brief_snapshot_Usecase.asp; or SANWatch snapshot datasheet

http://www.infortrend.com/doc/datasheet/Snapshot_PRN_PDS_v1.1.pdf)

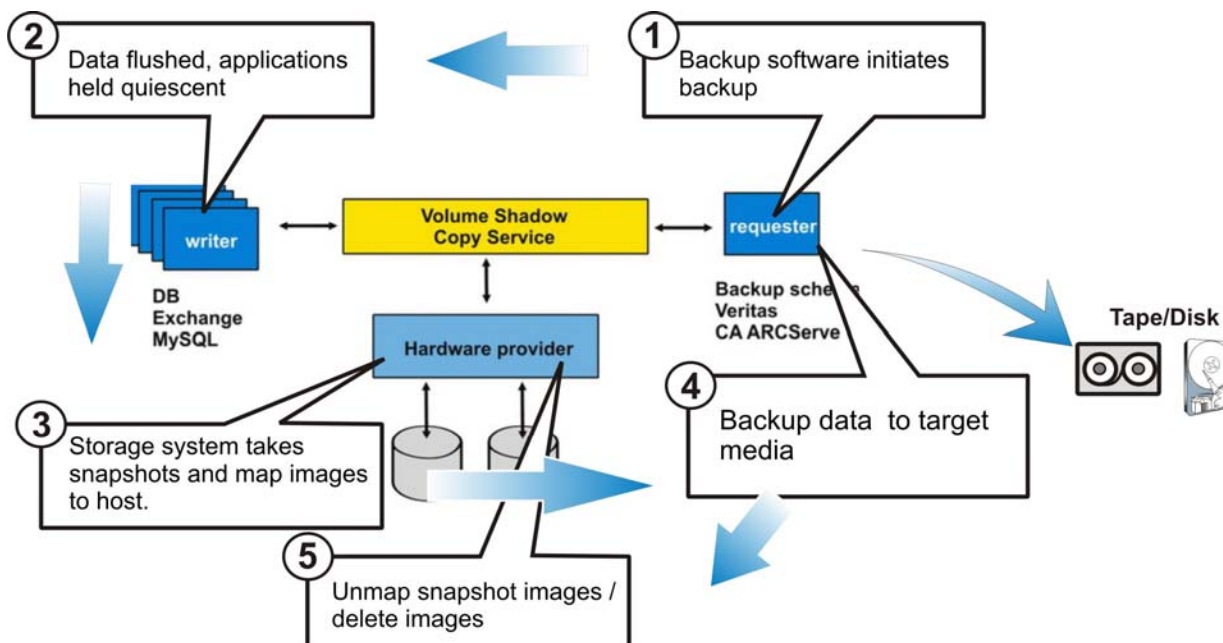
Microsoft VSS Solves Compatibility Issues

As illustrated above, snapshot proves to be a great help of streamlining backup operations; however, to make use of its capability requires integrating it with the backup software, the applications, and the storage systems to be backed up. Compatibility issue between vendors is the main problem interfering with the integration. In the past, IT managers solve this problem by using scripts to enable the coordination of the three elements. Finding that scripts are difficult to create and maintain for long-term proper operation, Microsoft built a technology in Windows Server 2003 named Volume Shadow Copy Service (VSS). VSS serves as the architecture on which VSS-compliant backup software, applications and storage hardware can work with one another for efficient backup and restore. To make the convenient service available to users, Infortrend has made the snapshot functionality of its proprietary storage management software, SANWatch, VSS-compliant. Below we will further illustrate how SANWatch

snapshot can be used to do the backup and restore of EonStor arrays by working with Symantec Backup Exec 11d through VSS framework.

VSS Basics

VSS is often represented as a triangle-shaped framework whose three vertices are Requester (backup software), Writer (database application) and Provider (storage hardware).



Backup procedure

1. The requester commands the start of the backup job.
2. The writer flushes data and guarantees the consistency of the dataset to be backed-up.
3. The hardware provider creates a snapshot of the data and maps it to the host where the requester is installed.
4. The requester backs up the snapshot image to the target device.
5. The hardware provider unmaps the snapshot image and deletes the snapshot image.

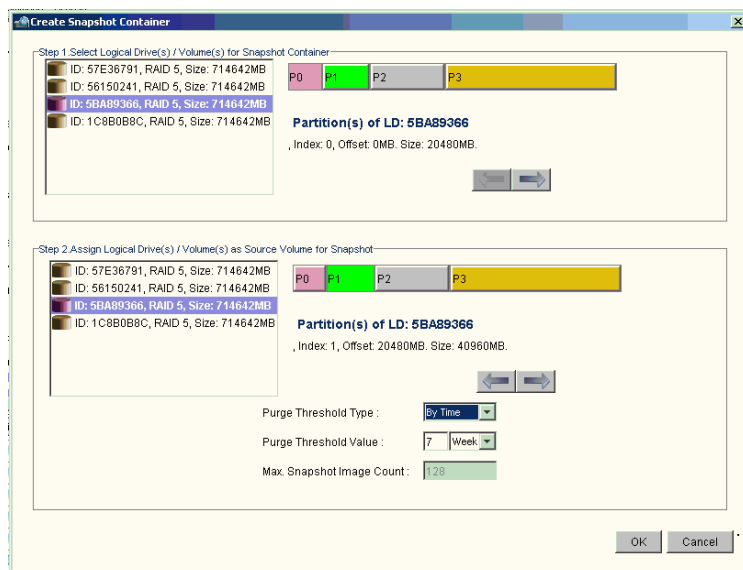
Application Example of Microsoft Exchange Server Backup

Server and Software Requirements

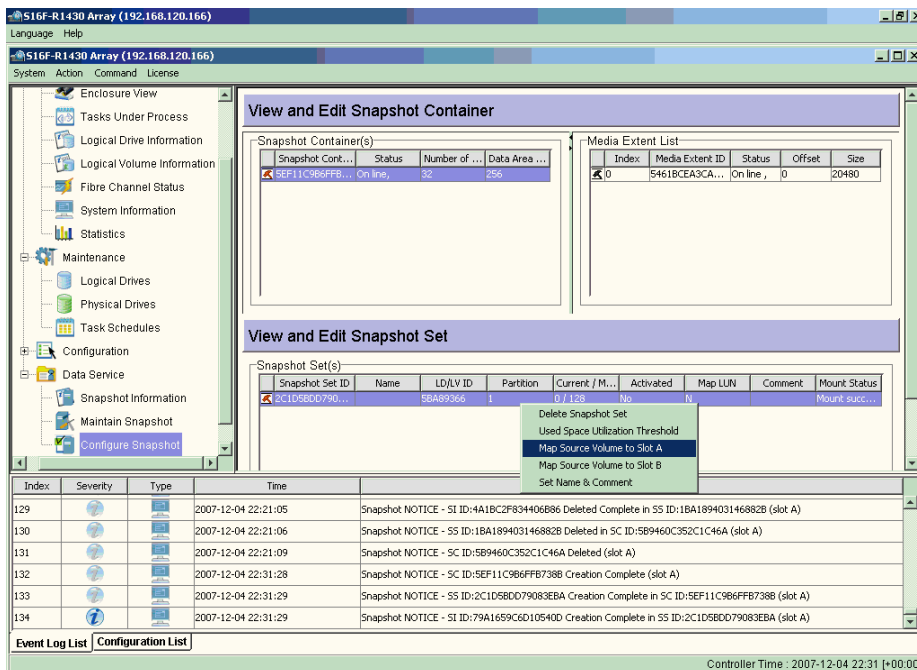
1. Microsoft Windows Server 2003 (service pack 2)
2. Microsoft Windows Server 2003 R2 Editions
3. Microsoft Exchange Server 2003 (best with service pack 1)
4. Symantec Backup Exec 11d

EonStor Array Configuration

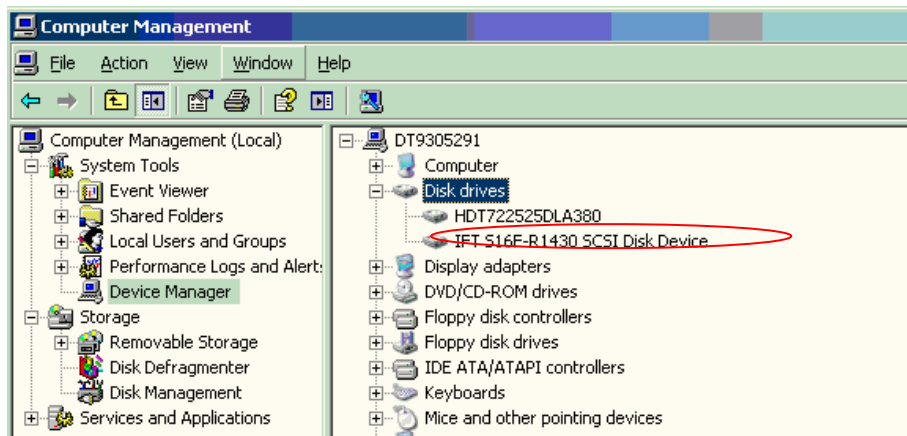
1. Choose two of the created logical drives to create a **Snapshot Container** and a **Source Volume** using SANWatch GUI.



2. Create LUN mapping for the **Source Volume**.



3. Scan all the available disks under Windows 2003 **Device Manager**. A new "iFT SCSI Disk Device" should be displayed in the component list window.



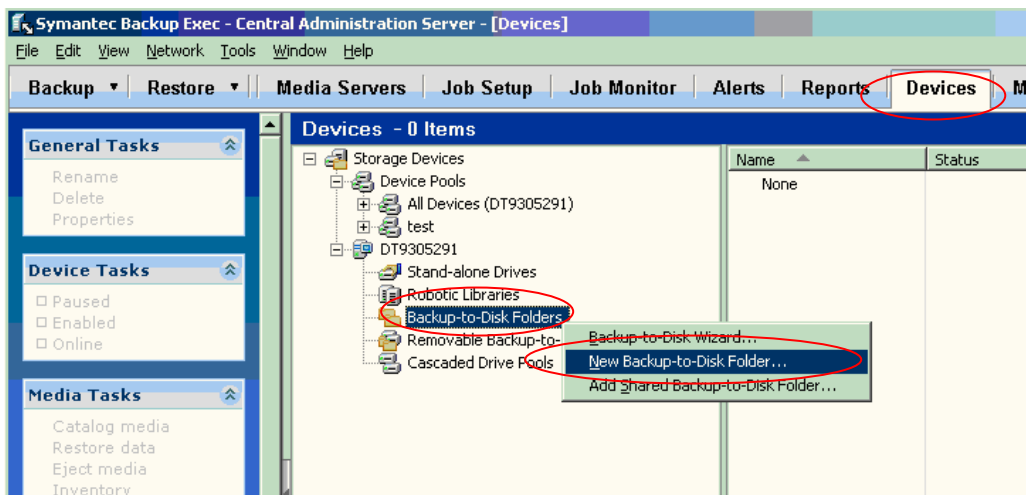
4. Initialize this new IFT SCSI device and assign a drive letter (For example, 'G') to the disk in the **Disk Management** window. Note that the disk should be formatted using the Basic-MBR mode.
5. Install the Exchange database in the initialized disk.

Note: If you have already installed the Exchange database in a logical drive, to make it protected by snapshot, you should first choose another logical drive, use it as the **Snapshot Container** and then create a new **Snapshot Set**, selecting the logical drive where the Exchange database is installed as the source volume. For detailed procedures, please consult our **SANWatch User's Manual**.

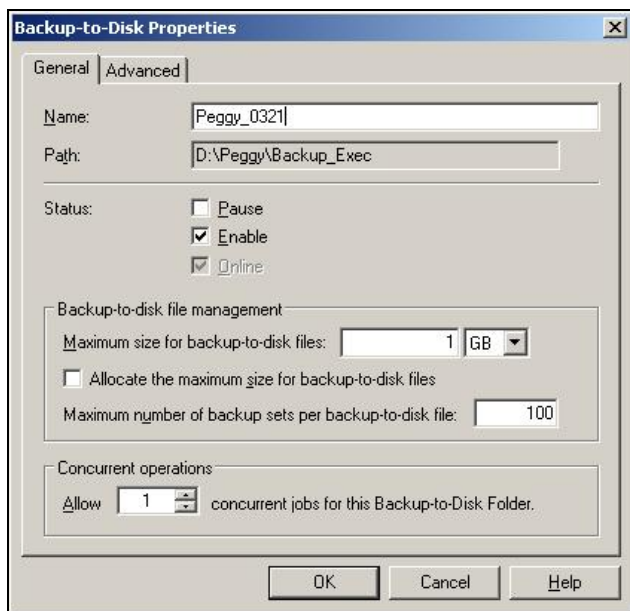
Indicate the Backup Device

1. Launch the Backup Exec software.
2. Create a backup device to which the backup data can be saved.

Click **Devices** tab. Expand the **Devices** tree in the lower pane and right-click on **Backup-to-Disk Folders**. Select **New Backup-to-Disk Folder**.

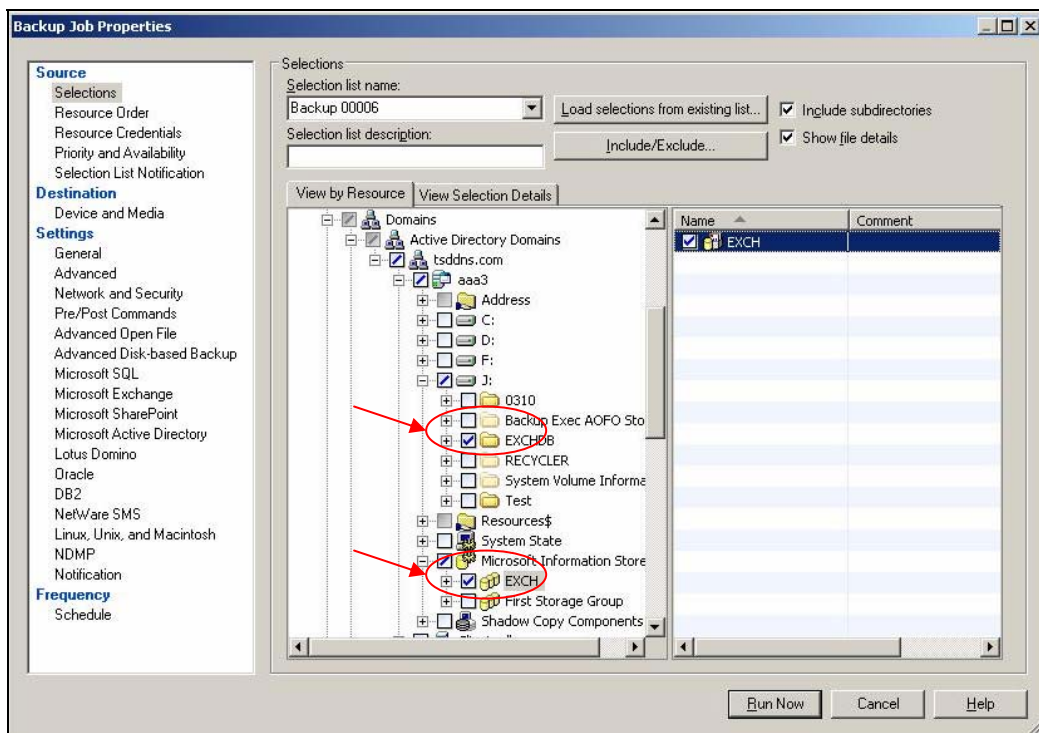


3. In the pop-up window, indicate the path of the backup device, and then click **OK**.
Now the backup device is ready.



Exchange Server Backup Procedure

1. Open a **New Backup Job** in Backup Exec.
2. From the left-side tree, click **Selections** under **Source**, and then select the source you want to backup in the right-side pane by ticking the checkbox.
Note: Select the **disk folder** where your mail box is located (for example, folder "EXCHDB" in disk **J**: as shown below), and also the "EXCH" database in Microsoft Information Storage.

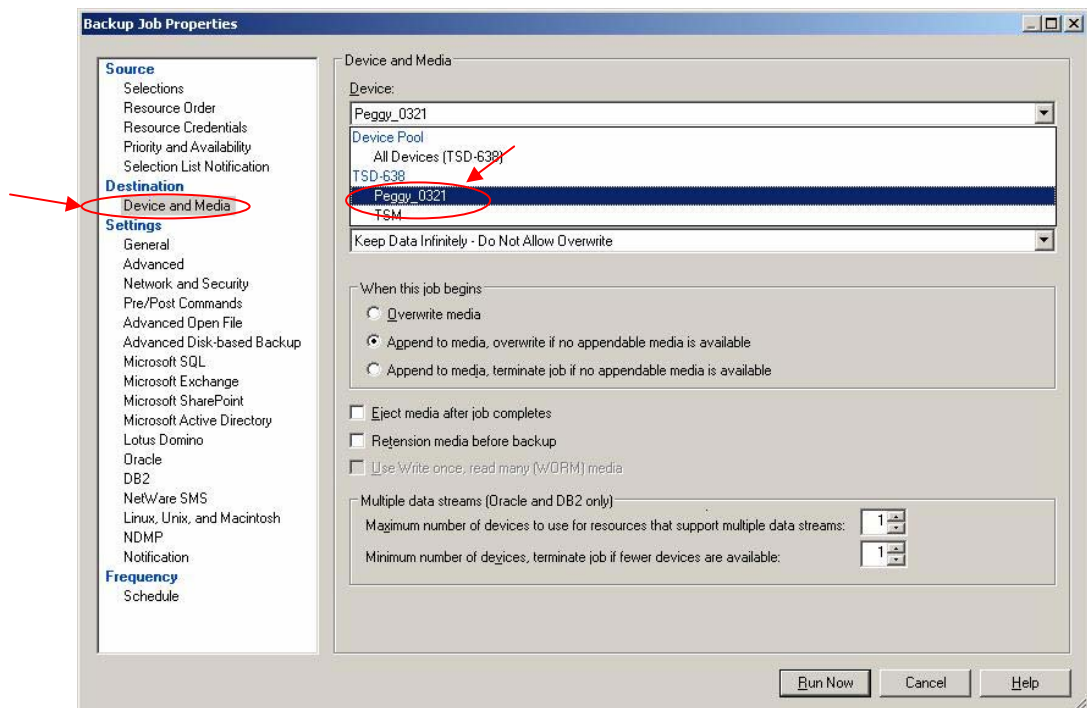


Note: Please make sure the backup server has the right to access the Exchange server. To do this, add an account from **Resource Credentials** under **Source**.



3. Select the backup device.

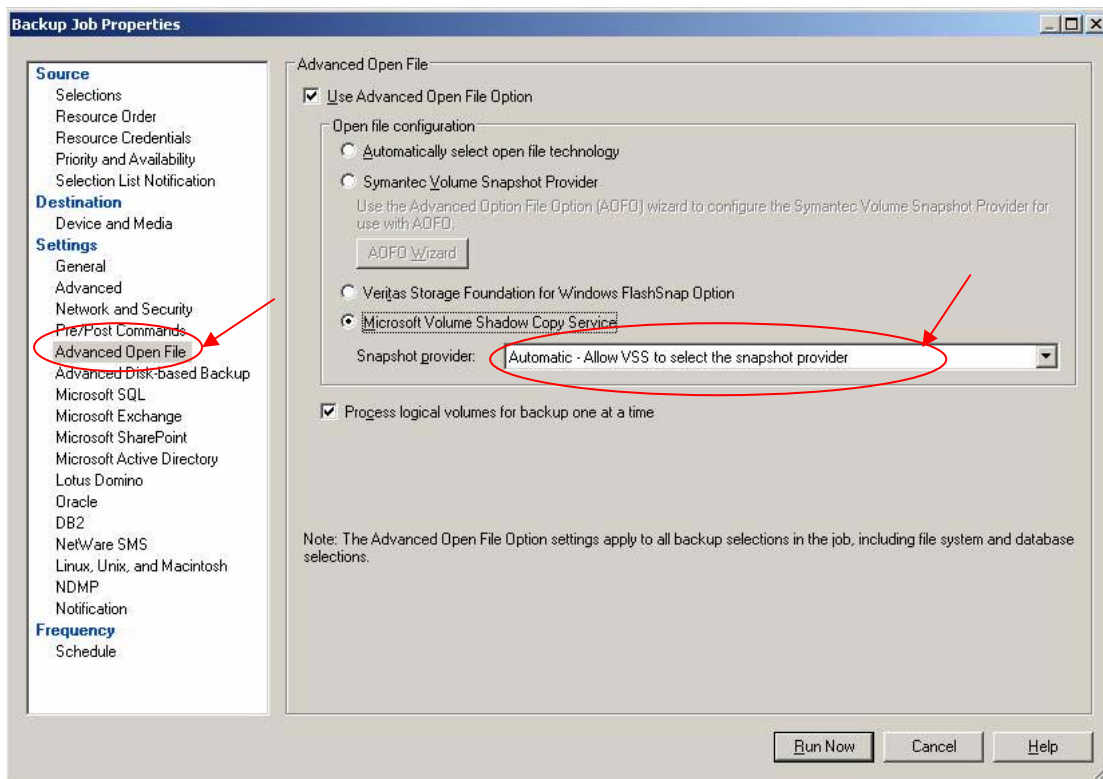
Go to **Device and Media** under **Destination**; select a backup device as the destination from the pull-down list in the right-side pane. The backup data will be stored in the chosen device. (See the previous section for how to create a backup device.)



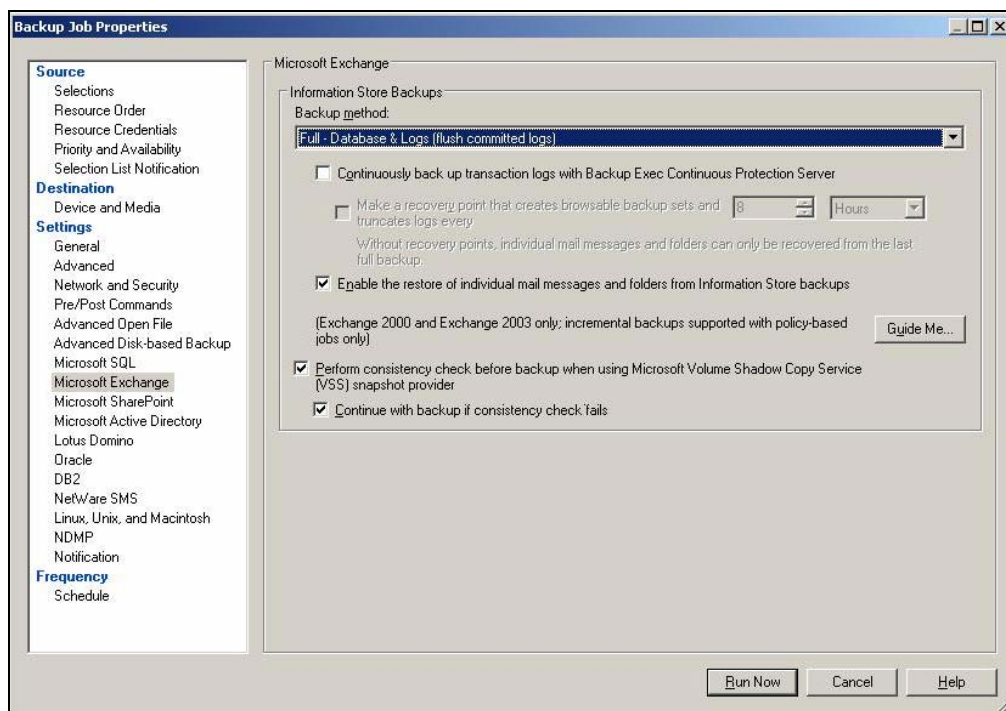
4. Enable **VSS Snapshot Support**.

Go to **Advanced Open File** under **Settings**. Click **Microsoft Volume Shadow**

Copy and make sure to select **Automatic-Allow VSS to select the snapshot provider** from the **Snapshot provider** pull-down list. When finished, click **Run Now**.



5. Configure the backup procedure for an Exchange server. Go to **Microsoft Exchange** under **Settings**, and select the preferred option for your backup task.



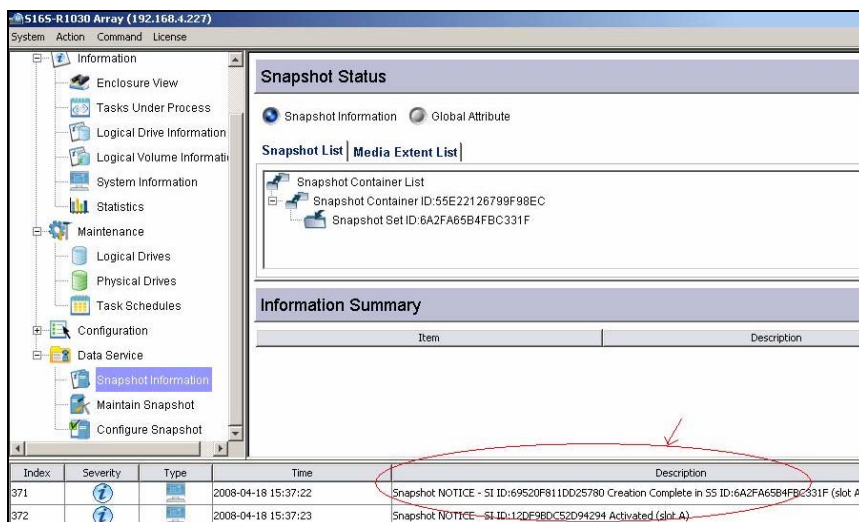
- Verify the settings in the job summary and click **OK**. A backup job should now be started.

Check Whether the Snapshot Has Been Started

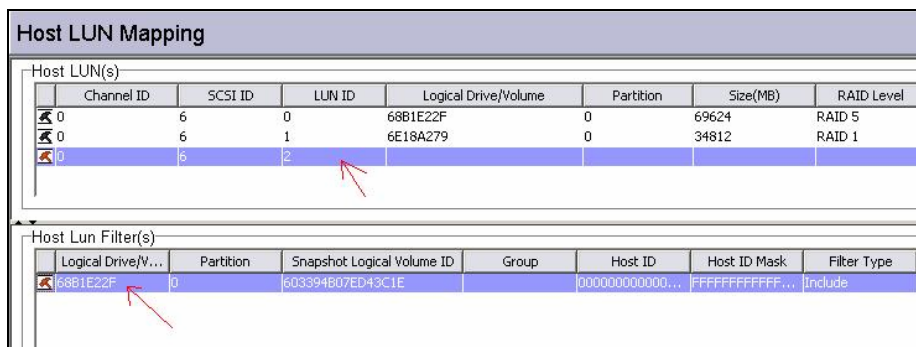
Open a terminal console for the Infortrend RAID system to be backed up or use the SANWatch GUI. The following screenshots all indicate the situation when SANWatch GUI is used.

After running the backup job using the Backup Exec software, check for the following events in the console:

- A snapshot image should have been taken.
A notification event (Snapshot NOTICE – SI ID:xxxxxx Creation Complete in SS ID:xxxx) will prompt you, indicating that a **Snapshot Image (SI)** has been taken. Meanwhile, a snapshot image will be activated with another notice event (Snapshot NOTICE –SI ID:xxxx).



- The snapshot image will then be mapped to an available host LUN, and data will be copied to the device location you previously set on the backup server running Backup Exec.



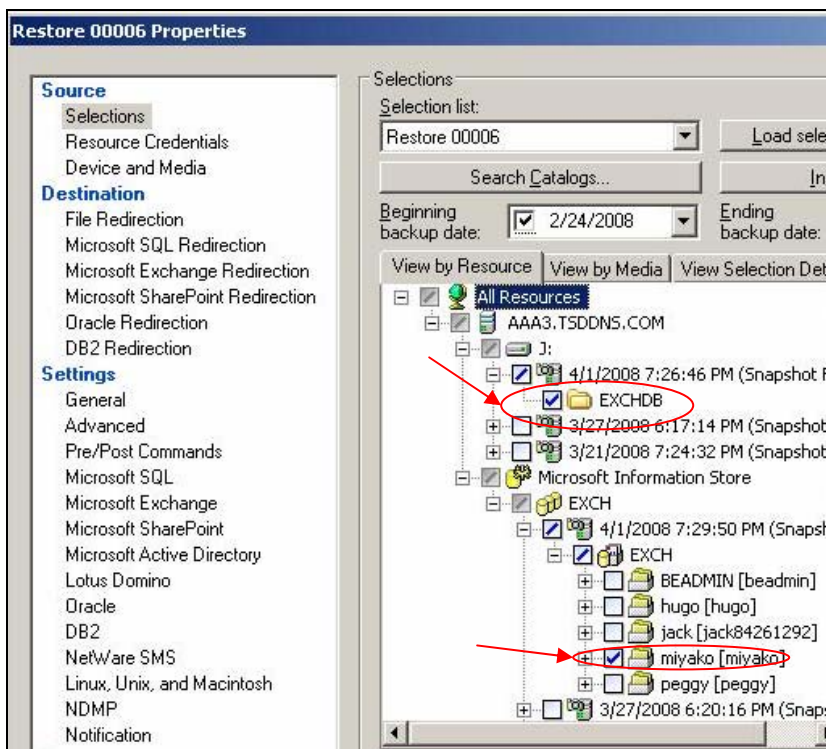
- After the backup job is done, the snapshot Image will be deleted automatically. The backup job is now completed.

dex	Severity	Type	Time	Description
			2008-04-18 15:37:22	Snapshot NOTICE - SI ID:69520F811DD25780 Creation Complete in SS ID:6A2FA65B4FBC331F (slot A)
			2008-04-18 15:37:23	Snapshot NOTICE - SI ID:12DF9BDC52D94294 Activated (slot A)
			2008-04-18 15:39:03	Snapshot NOTICE - SI ID:12DF9BDC52D94294 Deleted Complete in SS ID:6A2FA65B4FBC331F (slot A)

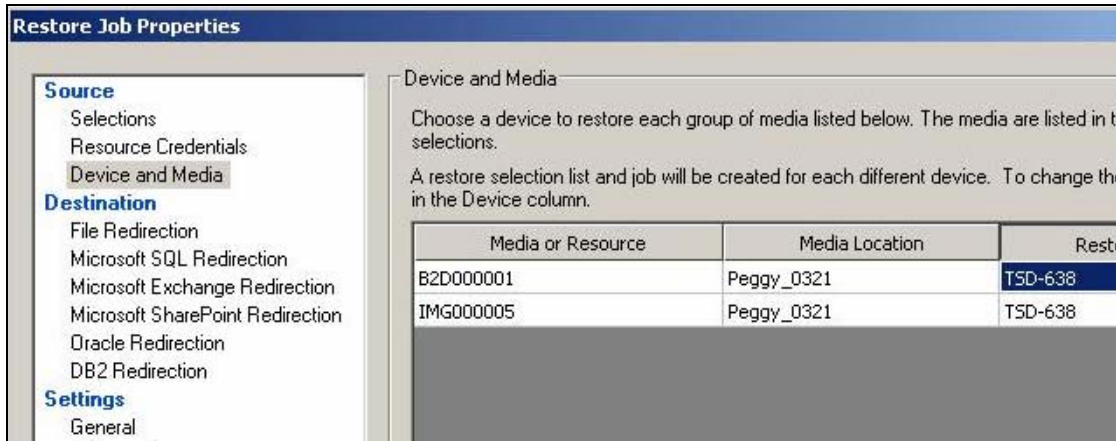
Restore Exchange Data from Backup Target

Follow the procedures below to restore an accidentally crashed mailbox or the entire mailbox.

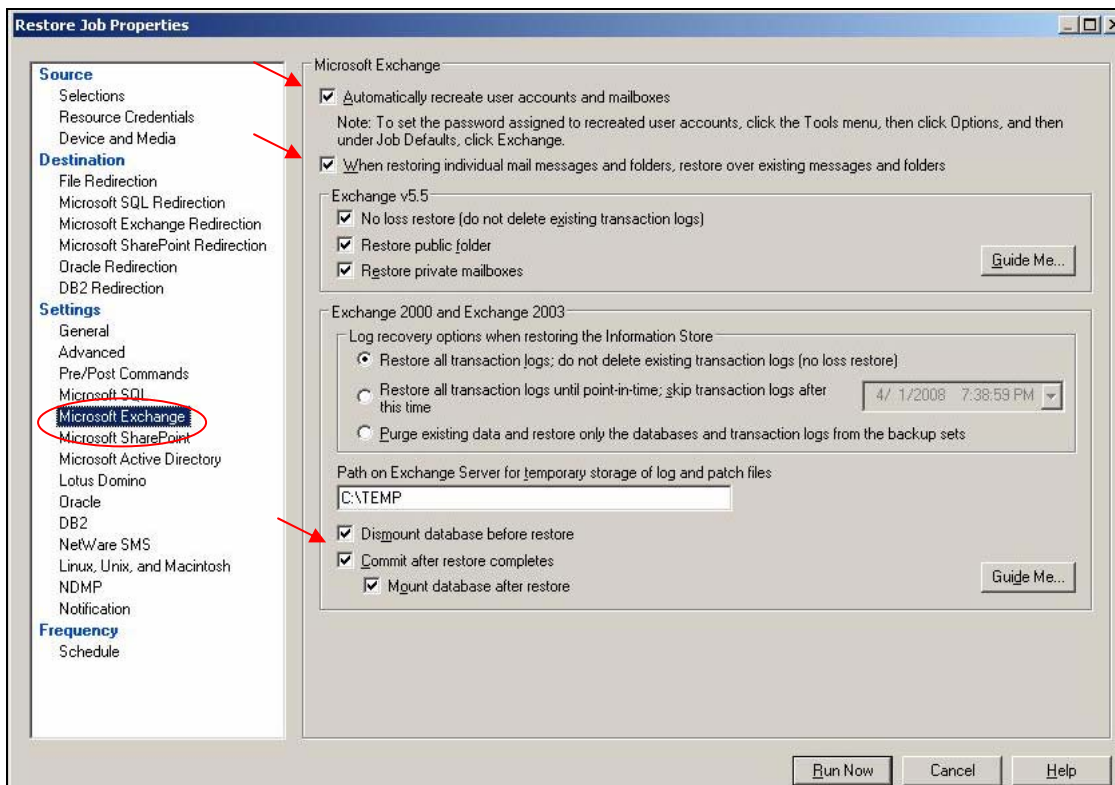
1. Open a **New Restore Job** in Backup Exec.
2. From **Selections** under **Source**, select the source you want to restore in the right-side pane. The screenshot below exemplifies the case when you want to restore the mailbox named **miyako**.



3. In **Device and Media** under **Source**, select the backup data of the source you want to restore.



4. Make sure the following items are selected in **Microsoft Exchange** under **Setting**.
 - Automatically recreate user accounts and mailboxes.
 - When restoring individual mail messages and folders, restore over existing messages and folders.
 - Dismount database before restore.



5. Verify the settings in the job summary and click **Run Now**. The mailbox will then be successfully restored.