

# Using Symantec Backup Exec 2012 v1.2

*to backup and restore via*

## **CIFS and NDMP**



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## **What is NDMP?**

NDMP (Network Data Management Protocol) is a backup and recovery protocol used to control communications between NAS (Network Attached Storage) systems, servers or tape libraries in a heterogeneous network environment.

### **NDMP and FlashNAS**

NDMP solves the incompatibility issues between backup applications and FlashNAS. Since FlashNAS own operating and file system is most likely NOT supported by backup applications such as backup agents and client software, the most commonly seen workaround is to install those backup agents on another networked server which then mounts FlashNAS volumes via file sharing protocols (such as CIFS or NFS), allowing the agents to utilize FlashNAS space for backup purposes. This method, though plausible, consumes considerable amount of network traffic and decreases the overall performance. With NDMP, FlashNAS can communicate with the backup agents to back up data to various targets directly in a much more efficient fashion.

In the next section, we are going to introduce how to use Symantec Backup Exec with your FlashNAS to backup & restore via CIFS & NDMP.

## **Before You Start**

Before you start configuring the backup & restore jobs, make sure you have done the following preparation work.

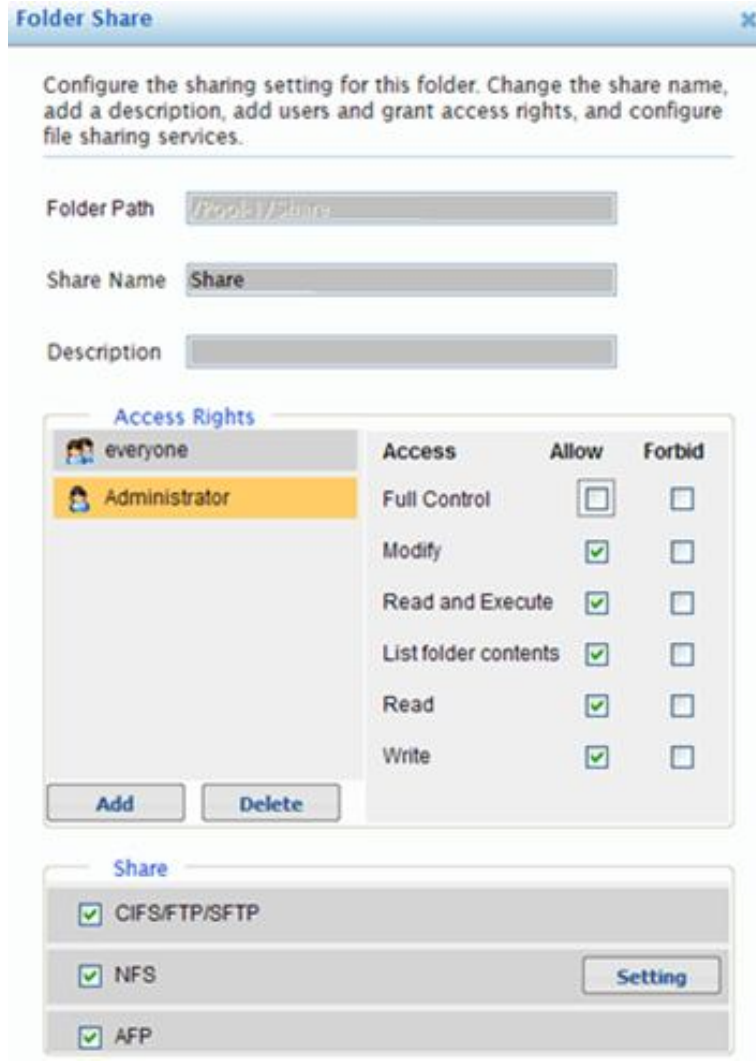
### **Installing Symantec BackupExec**

- Before installing the application, make sure your computer and network configuration meet the system requirement stated on Symantec website.
- Available versions from Symantec website might differ from the one we covered in this application note, yet the procedures are basically the same.

# Backing up Data from Client Computer to FlashNAS via CIFS

## Configuring Backup Destination

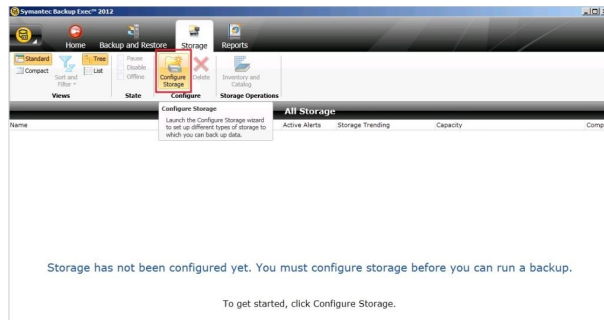
Before you start configuring the backup tasks, make sure you have an administrative account ("admin" or any user with superuser privileges) which owns proper access right to a shared folder dedicated to the backup tasks. Recommended privilege settings are shown in the following GUI screenshot. Note that Full Control should NOT be selected.



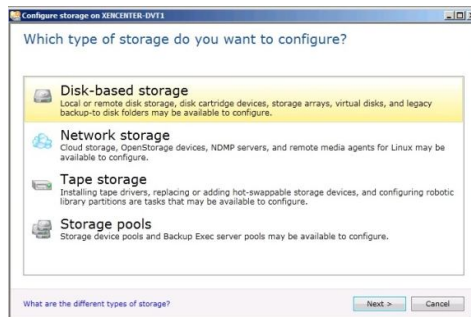
## Backup Procedures

1. Launch Symantec BackupExec to configure an FlashNAS shared folder as the backup storage.

- A. Click the *Storage* tab along the top of Symantec BackupExec, and from the tools panel below the tabs, click *Configure Storage*.



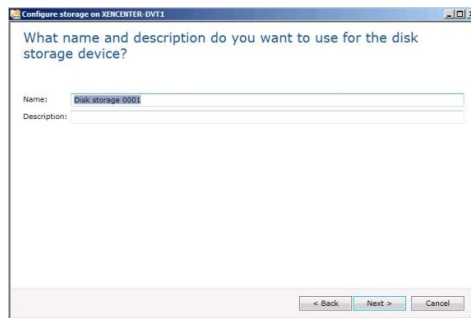
- B. In the wizard that appears, keep clicking *Next* while selecting or configuring the following options:  
Select *Disk-based storage*.



- Select *Disk storage*.



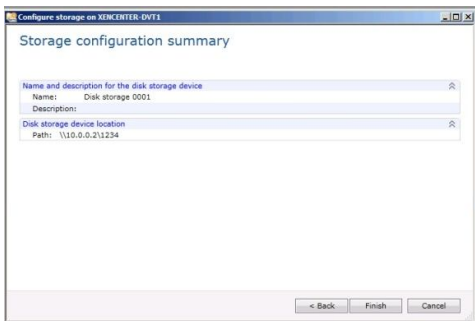
- Enter the name and description of the disk storage device.



Select *Network share*, and then enter FlashNAS IP and shared folder name, preceded by two back slashes and separated by a back slash. For example, `\\10.0.0.2\1234`

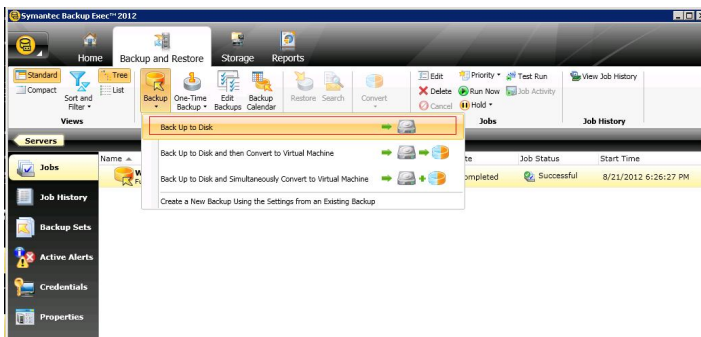


On the summary page, check the information and click *Finish* to exit the wizard.



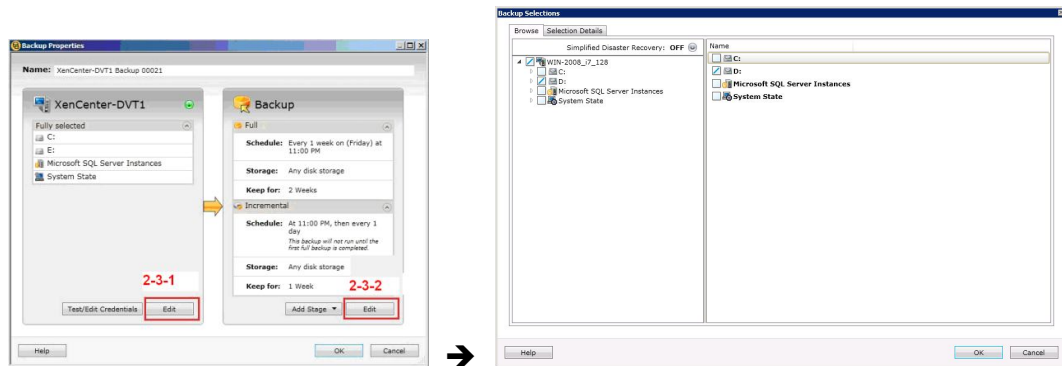
2. Configure and start the backup job.

- A. Click the *Backup and Restore* tab along the top of Symantec BackupExec, and from the tools panel below the tabs, select *Backup > Backup to Disk*.

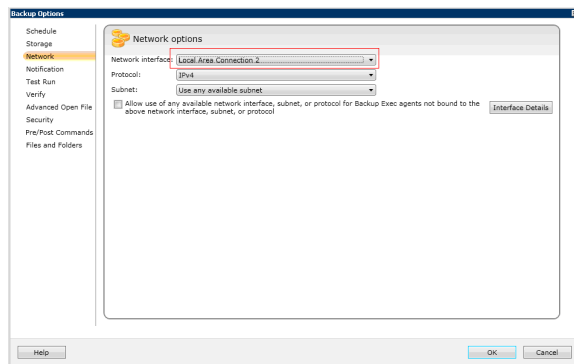




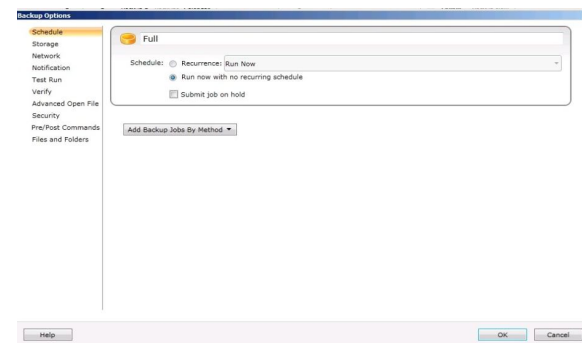
- B. In the *Backup Properties* window that appears, click *Edit* in the left section and specify the contents you want to backup. Click *OK* to finish.



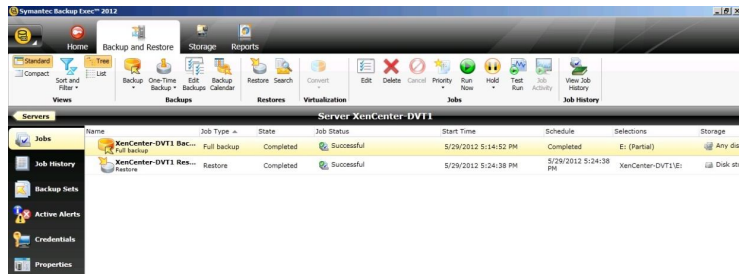
- C. Click the *Edit* button in the right section to configure backup options: Click *Network* on the left panel, and choose the correct network interface from the *Network Interface* drop-down menu.



- D. Click *Schedule* on the left panel and select *Run now with no recurring schedule* to run the backup job immediately and for once only, or select *Recurrence* and choose a schedule from the drop-down menu nearby. Click *OK* twice consecutively to close the *Backup Options* and *Backup Properties* window.

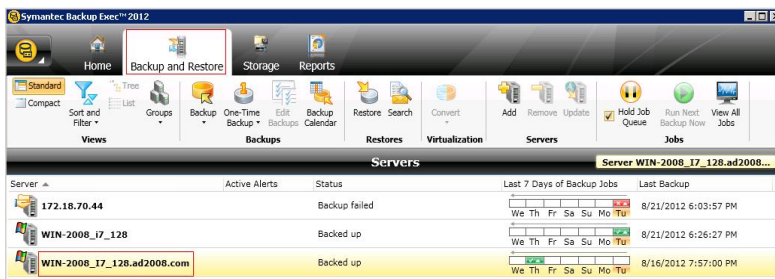


- E. Back to the main window of BackupExec, you can see the status of the backup job you just created.

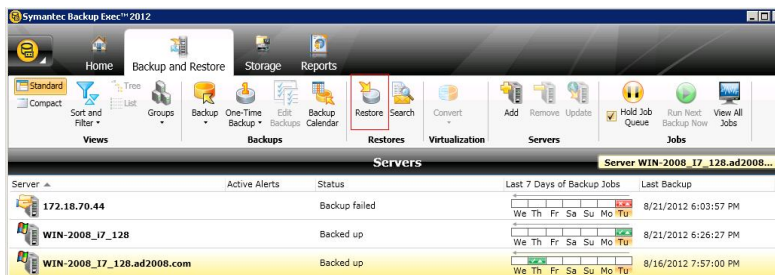


## Restore Procedures

1. Click the *Backup and Restore* tab along the top of BackupExec, and select the server you want to restore.

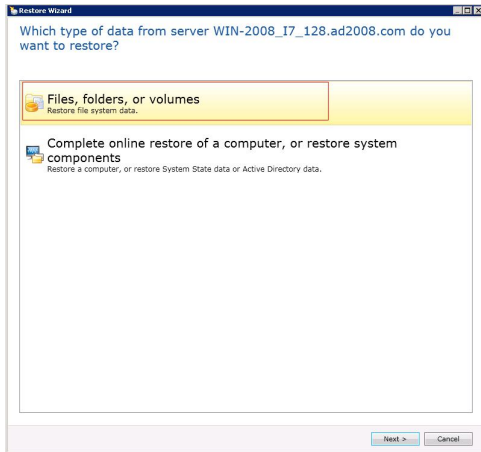


2. Click *Restore* on the tools panel. (This button is only available after a backup job is created.)

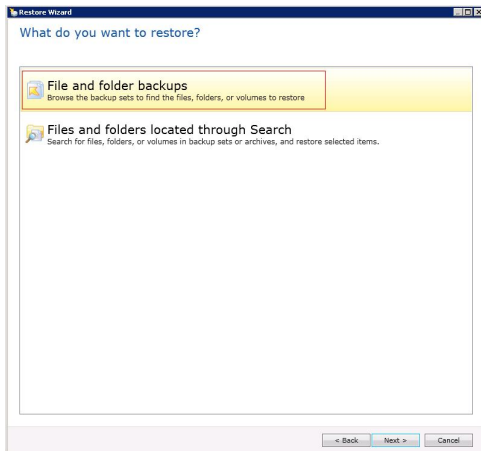


3. In the wizard that appears, keep clicking *Next* while selecting or configuring the following options:

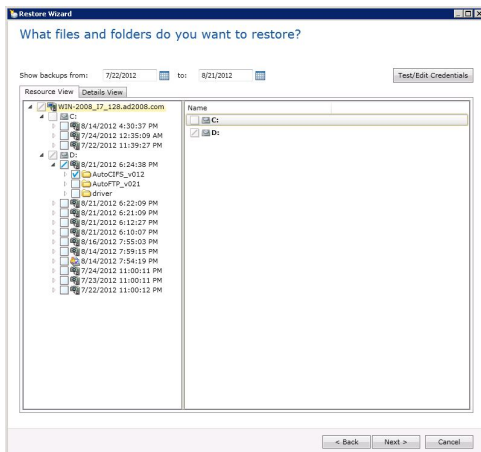
Select *Files, folders or volume*.



Select *File and folder backups*.



Select the checkboxes to specify the contents which were backed up at the moments you want to restore.



Select the location to restore the contents. (Under normal circumstances, it should be the original location where the contents were backed up.)

The screenshot shows the 'Restore Wizard' dialog box with the title 'Where do you want to restore the data?'. It has two main sections: 'To the original location' (selected) and 'To a different location'. Under 'To the original location', there are fields for 'Drive' and 'Path', with 'Example: \\server\drive' and 'Example: \path' respectively. There is also a 'Browse' button. Under 'To a different location', there is a 'Server logon account' dropdown menu with 'System Logon Account' selected and an 'Add/Edit' button. Below this is a section for 'Microsoft Virtual Hard Disk (Windows Server 2008 R2 or later)' with three radio button options: 'Create a Virtual Hard Disk for redirected data', 'Create a different Microsoft Virtual Hard Disk for each backup set that is restored', and 'Create a single Microsoft Virtual Hard Disk that contains the merged files and folders from all redirected backup sets'. There is also a text field for 'VHD file name:'. At the bottom, there is a question 'What happens if I restore to a Virtual Hard Disk?' and navigation buttons: '< Back', 'Next >', and 'Cancel'.



Select miscellaneous restore options. Using the default settings should be fine.

The screenshot shows the 'Restore Wizard' dialog box with the title 'How do you want to maintain file integrity, hierarchy, and security for restored data?'. It has several sections: 'Restore files that were corrupt or incomplete in the backup. Some data may be retrievable from them.' with a checked 'Recreate the directory structure from the backup when the data is restored; otherwise, all data is restored without any directory structure.' checkbox. 'Restore existing files' with three radio button options: 'Restore over existing files', 'Skip if the file exists', and 'Overwrites the file on disk only if it is older'. 'Restore file list and item level permissions' with three radio button options: 'Restore files with their NTFS permissions', 'Restore files without their NTFS permissions. The NTFS permissions for the restored files are determined by the permissions at the destination location', and 'Restore only the NTFS permissions for files that exist at the destination; do not restore the file content'. At the bottom, there are navigation buttons: '< Back', 'Next >', and 'Cancel'.

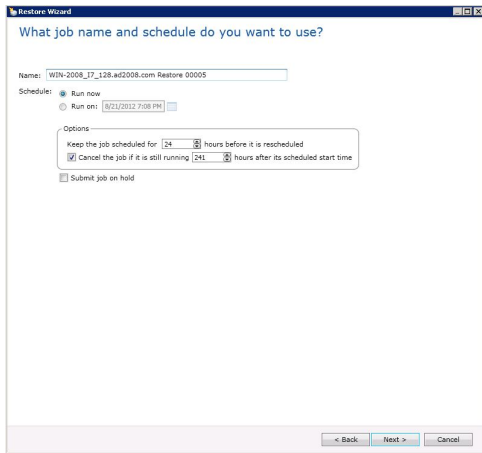


Decide whether you want to run customized tasks or commands before or after a restore job is performed.

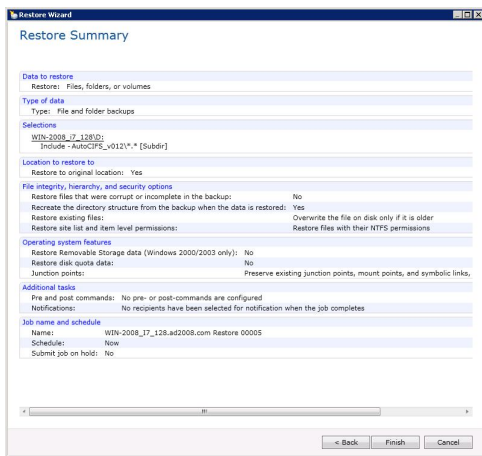
The screenshot shows the 'Restore Wizard' dialog box with the title 'What additional tasks do you want to perform before and/or after a restore?'. It has several sections: 'Run a command before and/or after the restore' with two text input fields for 'Type a command to run before the restore runs:' and 'Type a command to run after the restore runs:'. Below these are checkboxes for 'Let Backup Exec check the exit codes of the commands to determine if the commands completed successfully', 'Run job only if pre-command is successful', 'Run post-command only if pre-command is successful', and 'Run post-command even if job fails'. There is also a 'Cancel command if not complete within' field set to '30' minutes. 'Run these commands:' with radio button options: 'On this Backup Exec server' and 'On each server restored to'. 'Notification' section with a table for 'Select each recipient to notify when the job completes.' with columns for 'Recipient name' and 'Recipient type', and a 'Manage recipients' button. There is also a 'Properties' button. At the bottom, there is a checkbox 'Include the job log in email notifications' and navigation buttons: '< Back', 'Next >', and 'Cancel'.



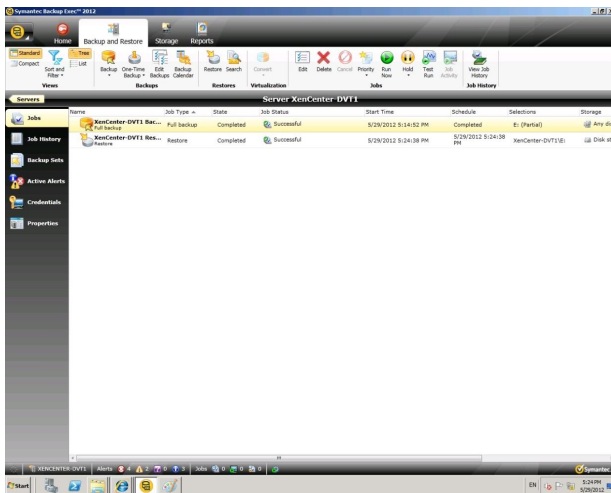
Enter the name and schedule for the restore job.



On the summary page, check the information and click *Finish* to exit the wizard.



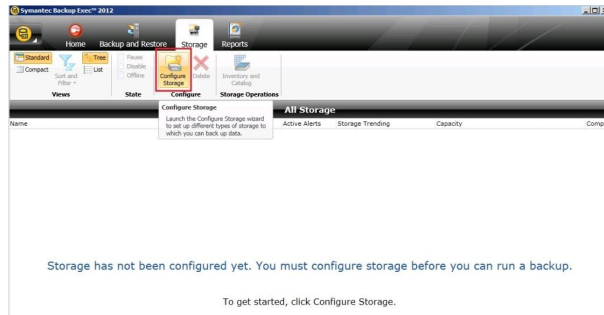
4. Under the Backup and Restore tab of BackupExec, you can check whether the restore job succeeds or not.



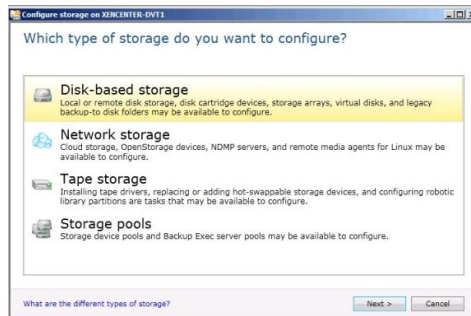
# Backing up Data from FlashNAS to Client Computer via CIFS

## Configuring Storage Device and Server

1. Launch Symantec BackupExec to configure a disk partition on your computer as the backup storage.
  - A. Click the *Storage* tab along the top of Symantec BackupExec, and from the tools panel below the tabs, click *Configure Storage*.



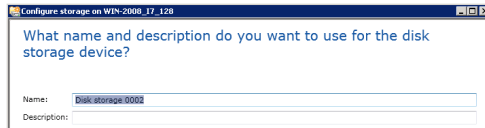
- B. In the wizard that appears, keep clicking Next while selecting or configuring the following options:  
*Select Disk-based storage.*



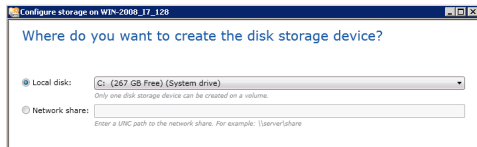
*Select Disk Storage.*



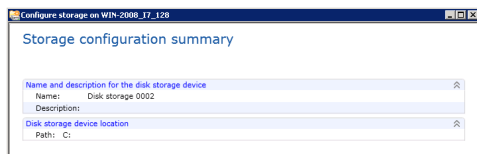
Enter the name and description of the disk storage device.



Select *Local Disk*, and then select a disk partition that will be used as the storage device.

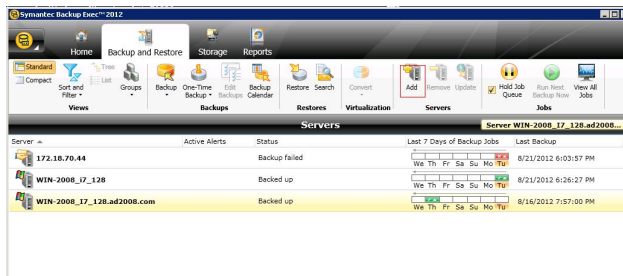


On the summary page, check the information and click *Finish* to exit the wizard.



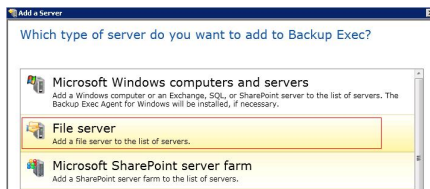
## 2. Add FlashNAS to the server list of BackupExec.

- A. Click the *Backup and Restore* tab along the top of Symantec BackupExec, and from the tools panel below the tabs, click *Add*.

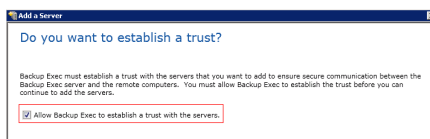


- B. In the wizard that appears, keep clicking *Next* while selecting or configuring the following options:

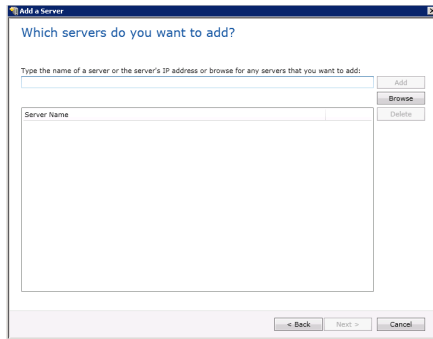
Select *File server*.



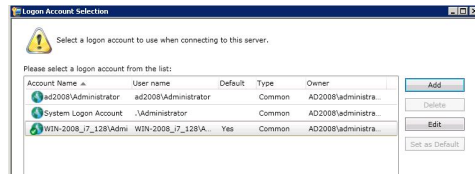
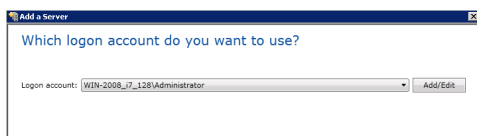
Select *Allow*.



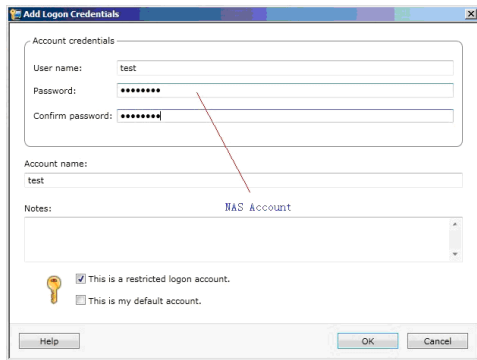
Enter FlashNAS IP, and click *Add* to add it to the server list.



Click *Add/Edit* and then click *Add* to create a logon account that will be used by BackupExec to access your FlashNAS.



Enter the login credentials of an FlashNAS user account, and then click OK.



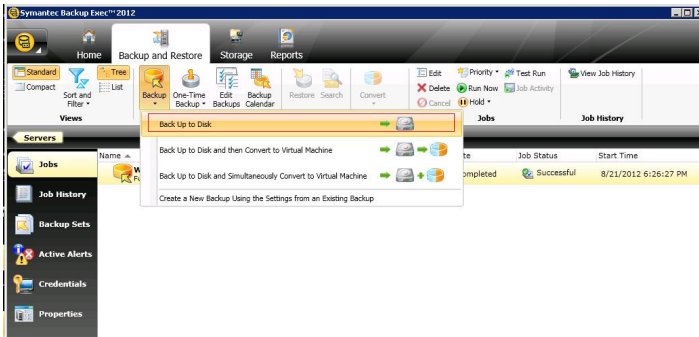
The server and its login credentials are now accessible to BackupExec. Click *Finish* to exit the wizard.



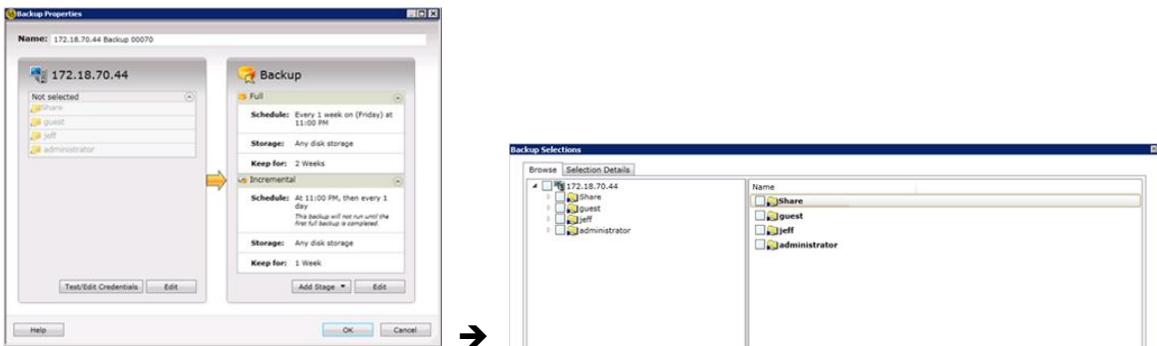


## Backup Procedures

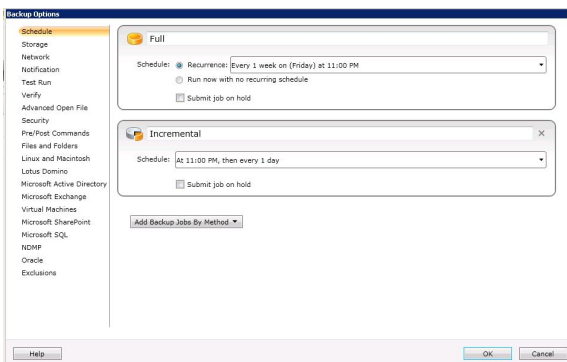
1. Click the *Backup and Restore* tab along the top of Symantec BackupExec, and from the tools panel below the tabs, select *Backup > Backup to Disk*.



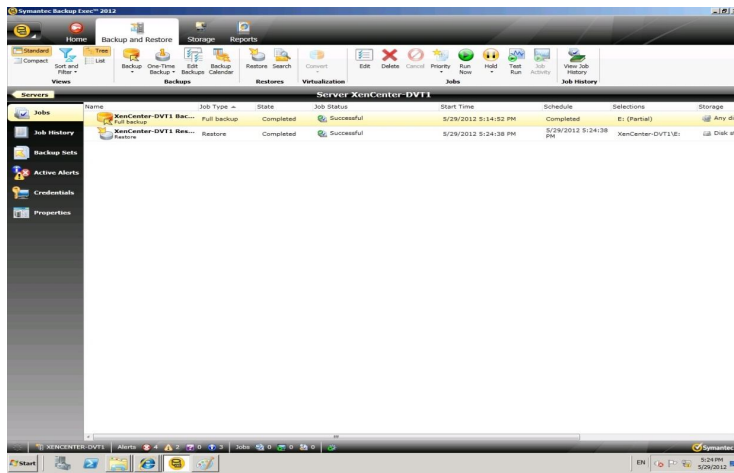
2. In the *Backup Properties* window that appears, click *Edit* in the left section and specify the contents you want to backup. Click *OK* to finish.



3. Click the *Edit* button in the right section to configure backup options: Click *Schedule* on the left panel and select *Run now with no recurring schedule* to run the backup job immediately and for once only, or select *Recurrence* and choose a schedule from the drop-down menu nearby. Click *OK* twice consecutively to close the *Backup Options* and *Backup Properties* window.

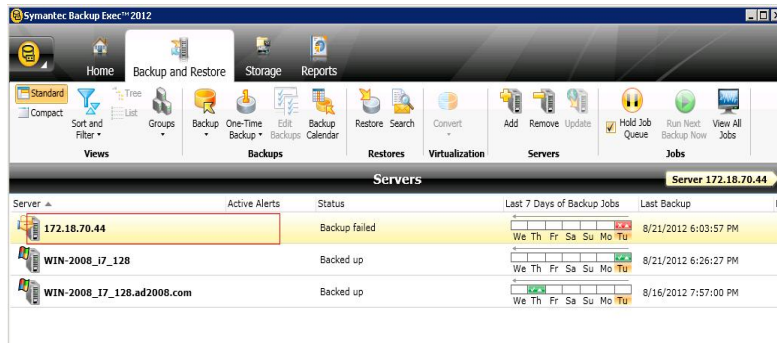


- Back to the main window of BackupExec, you can see the status of the backup job you just created.



## Restore Procedures

- Click the *Backup and Restore* tab along the top of BackupExec, and select the server you want to restore.

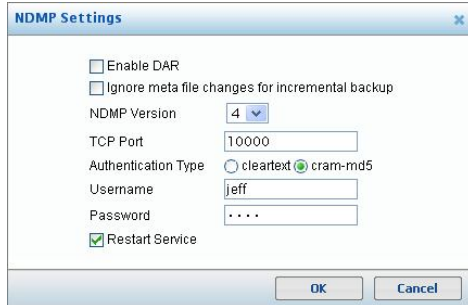


- Repeat the steps mentioned in "Restore Procedures" on Page 10 to complete the restore job.

# Backing up Data from FlashNAS to Client Computer via NDMP

## Configuring NDMP Service

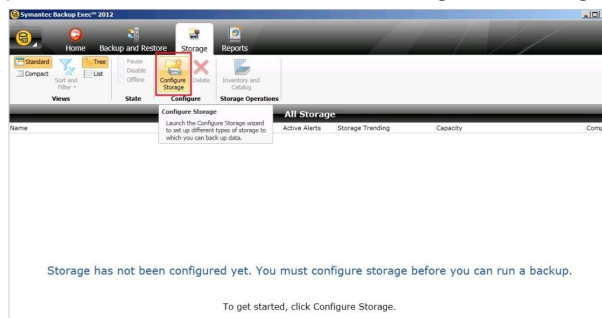
Log in to the web interface of FlashNAS. Go to *Configuration > Miscellaneous* to enable the NDMP service and set up a user account with *Authentication Type* set as *cram-md5*.



## Configuring Storage Device and Server

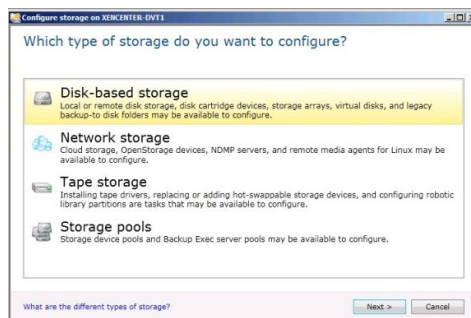
1. Launch Symantec BackupExec to configure a disk partition on your computer as the backup storage.

- A. Click the *Storage* tab along the top of Symantec BackupExec, and from the tools panel below the tabs, click *Configure Storage*.



- B. In the wizard that appears, keep clicking *Next* while selecting or configuring the following options:

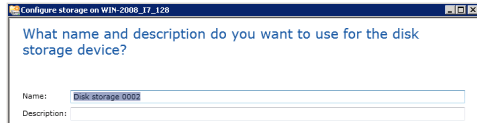
Select *Disk-based storage*.



Select *Disk storage*.



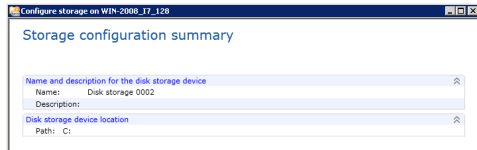
Enter the name and description of the disk storage device.



Select *Local Disk*, and then select a disk partition that will be used as the storage device.

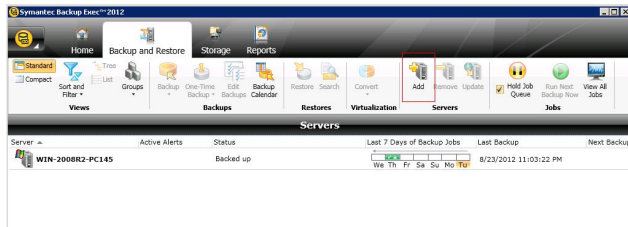


On the summary page, check the information and click *Finish* to exit the wizard.

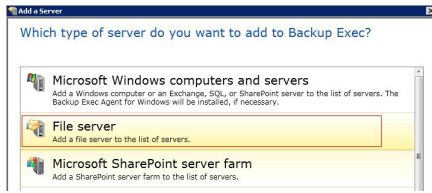


2. Add FlashNAS to the server list of BackupExec.

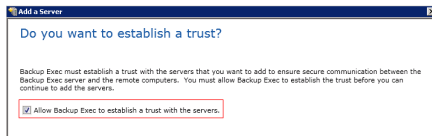
A. Click the *Backup and Restore* tab along the top of Symantec BackupExec, and from the tools panel below the tabs, click *Add*.



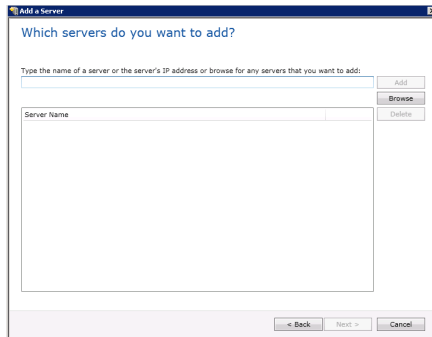
- B. In the wizard that appears, keep clicking *Next* while selecting or configuring the following options:  
 Select *File server*.



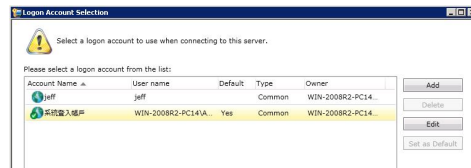
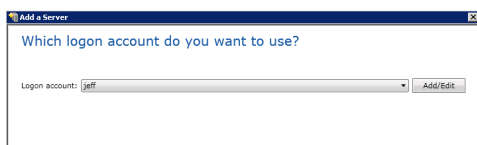
Select *Allow*.



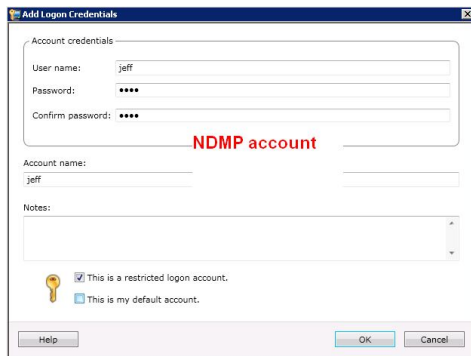
Enter FlashNAS IP, and click *Add* to add it to the server list.



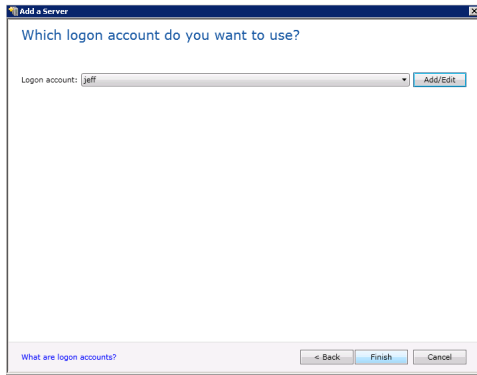
Click *Add/Edit* and then click *Add* to add an NDMP account that will be used by BackupExec to access your FlashNAS.



Enter the access credential of FlashNAS' NDMP service.

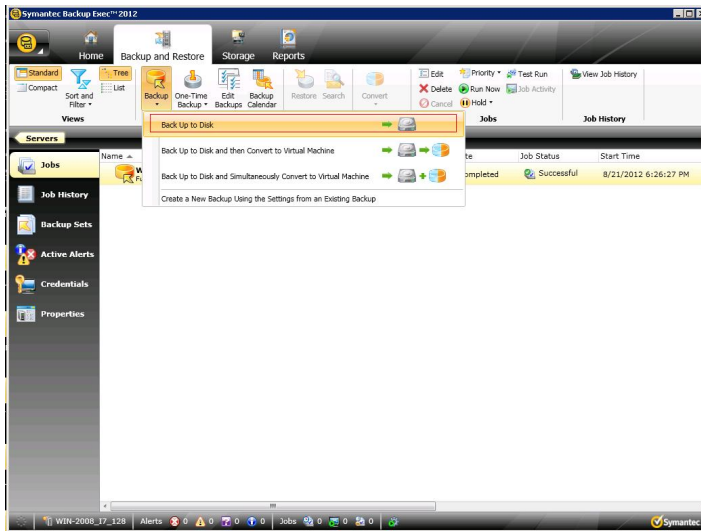


The server and its NDMP credentials are now added to BackupExec. Click *Finish* to exit the wizard.

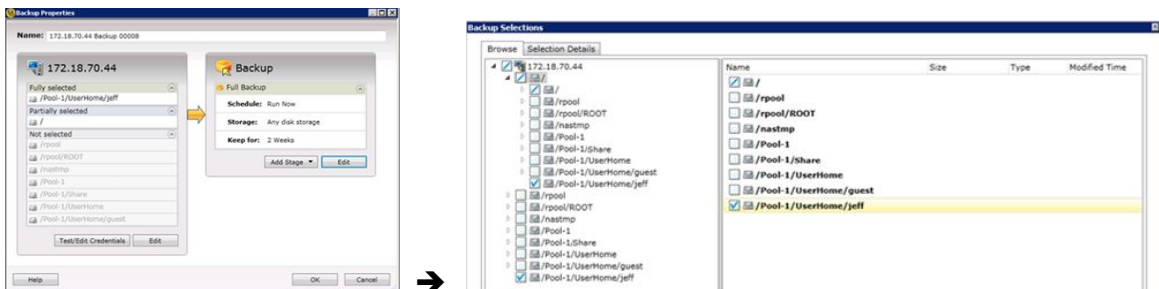


## Backup Procedures

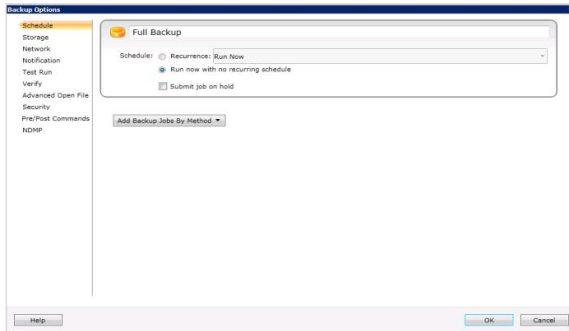
1. Click the *Backup and Restore* tab along the top of Symantec BackupExec, and from the tools panel below the tabs, select *Backup > Backup to Disk*.



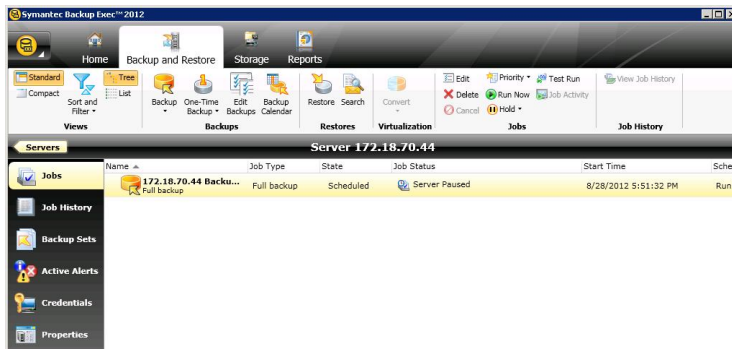
2. In the *Backup Properties* window that appears, click *Edit* in the left section and specify the contents you want to backup. Click *OK* to finish.



- Click the *Edit* button in the right section to configure backup options: Click *Schedule* on the left panel and select *Run now with no recurring schedule* to run the backup job immediately and for once only, or select *Recurrence* and choose a schedule from the drop-down menu nearby. Click *OK* twice consecutively to close the *Backup Options* and *Backup Properties* window.

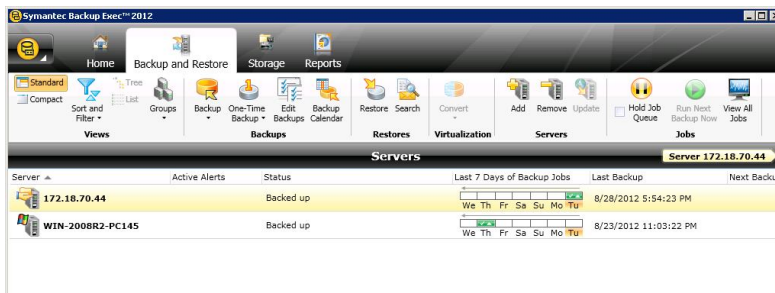


- Back to the main window of BackupExec, you can see the status of the backup job you just created.



## Restore Procedures

- Click the *Backup and Restore* tab along the top of BackupExec, and select the server you want to restore.



- Repeat the steps mentioned in "Restore Procedures" on Page 10 to complete the restore job.

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