Netbackup Virtual infrastructure:Implementation

Platform: Windows Server Systems

Author and Design Engineer : Anup Sreedharan

System Requirements:

- Base OS: Windows -7 and above (64 bit preferred, 32 bit can be used)
- Processor: Quad Core, Intel Core-i3 and above.
- RAM: 8 Gigabytes and above for maximum performance(4 Gigabytes can be used)
- Motherboard: Properietory Boards with Intel chipset(Eg: DELL), Intel Boards, ASUS, ASROCK, Gigabyte (Make sure to have VT enabled in BIOS)
- Virtualization tool kit: VMWARE workstation 6.5 and above / Oracle Virtual BOX (Earlier Sun Virtual BOX)/Hyper-v.

Hardware Used:

- DELL XPS L401-X LAPTOP
- Processor: Intel Core-i5 460M(First Gen)
- Base OS: Windows-7 Home Premium, 64 bit SP1
- MotherBoard: DELL 069C9F With Intel Chipset (Havendale/Clarkdale Host Bridge)
- Firmware (BIOS): DELL A06 (VT enabled)
- RAM:8 Gigabytes
- Virtualization toolkit: VMWARE workstation 10
- Subnet Range used: 192.168.x.x
- VRAM: VPROC:VMDK= 1:2:40
- Guest OS: Windows Server 2008 R2 Enterprise
- Symantec Netbackup 7.0
- Critalink Firestreamer VTL (Virtual Tape Library: 1 Robot, 5 Tape Drives & 200 Storage Slots)
- Starwind ISCSI SAN (Storage with no Robot. This can be used to create/export virtual storage & physical storage which includes harddisks, optical drives & tape drives)

Prerequisite Checklist:

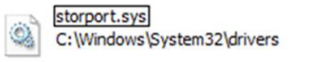
1. Make sure that the DNS is properly configured, if using within a **Domain**/Workgroup space.
2. Also setup static routes between the servers to ensure smooth connectivity.
3. For Windows 2003 Enterprise(both 32 and 64 bit), the following are required:
   a. Microsoft ICSI Initator software needs to be installed so as to bind with the Starwind software.

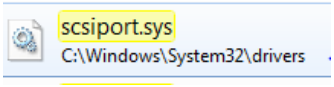
b. Storport MiniDriver(Storport.sys)→ suitable for use with high-performance buses, such as fibre channel buses, and RAID adapters.
c. Microsoft .NET Framework 3.5.

Note: b & c can be installed from Microsoft Support site.

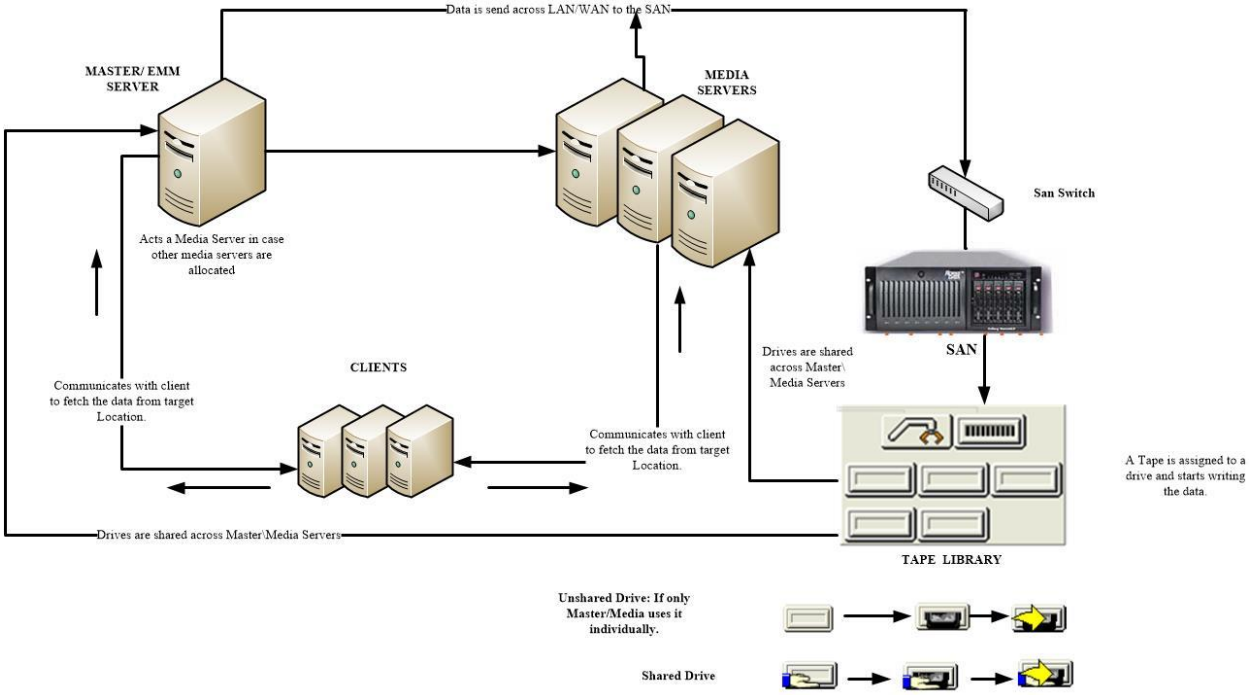
4. For Windows 2008 R2 Enterprise, Microsoft .NET Framework 3.5 should be installed from Server Manager(Under Features), whereas ISCI initator and storport driver comes pre-installed with OS.

- **IMP: Storport is a major prerequisite to bind with Firestreamer and Starwind VTL.**
- **As Starwind uses its SCSI service to binf with MS-ISCSI, scsiport.sys is equally important.**



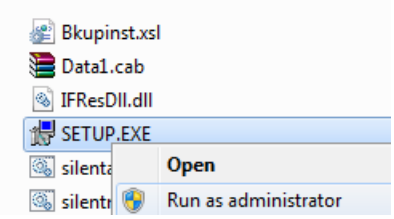


Netbackup Architecture Diagram

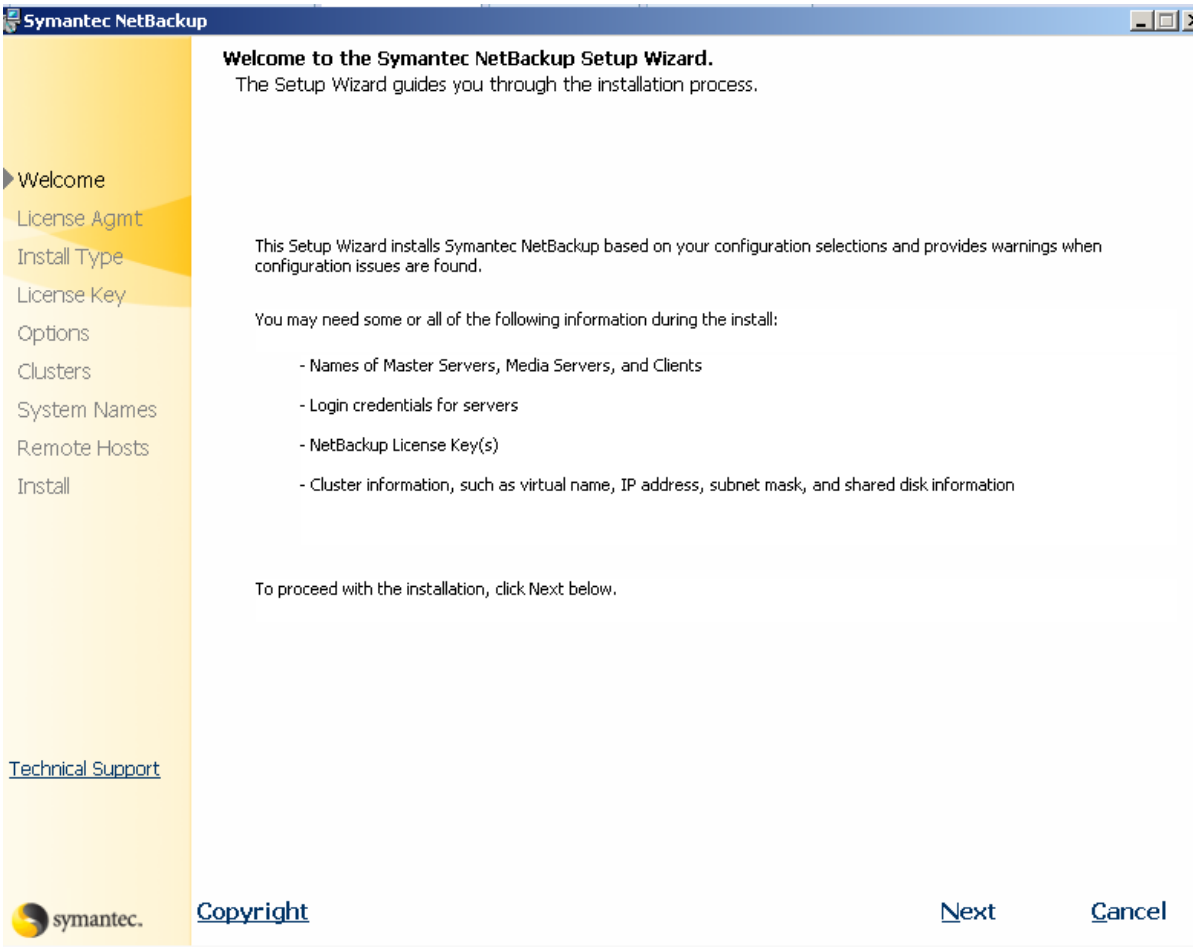


Netbackup Master & Media Server Installation

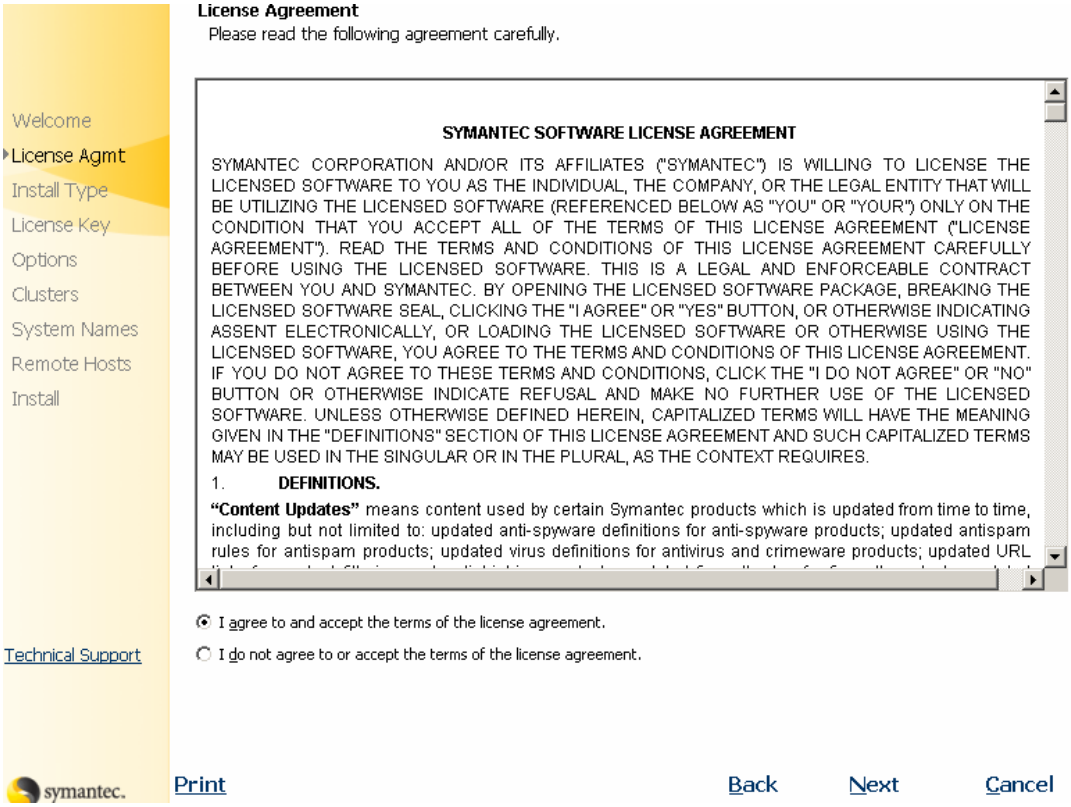
1. Run the set up with admin priveledges.



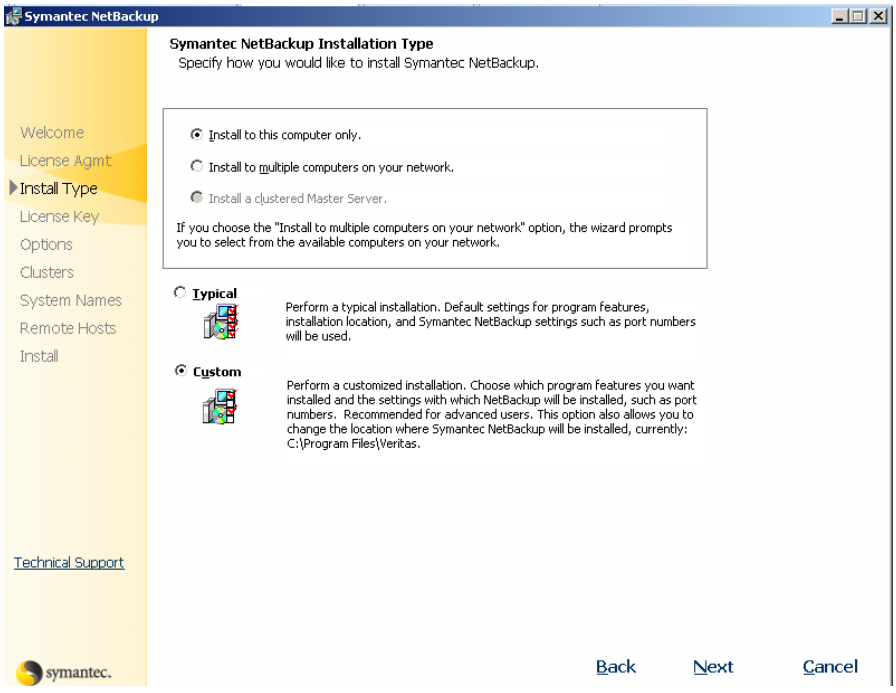
2. Setup Wizard pops up, which is shown below:



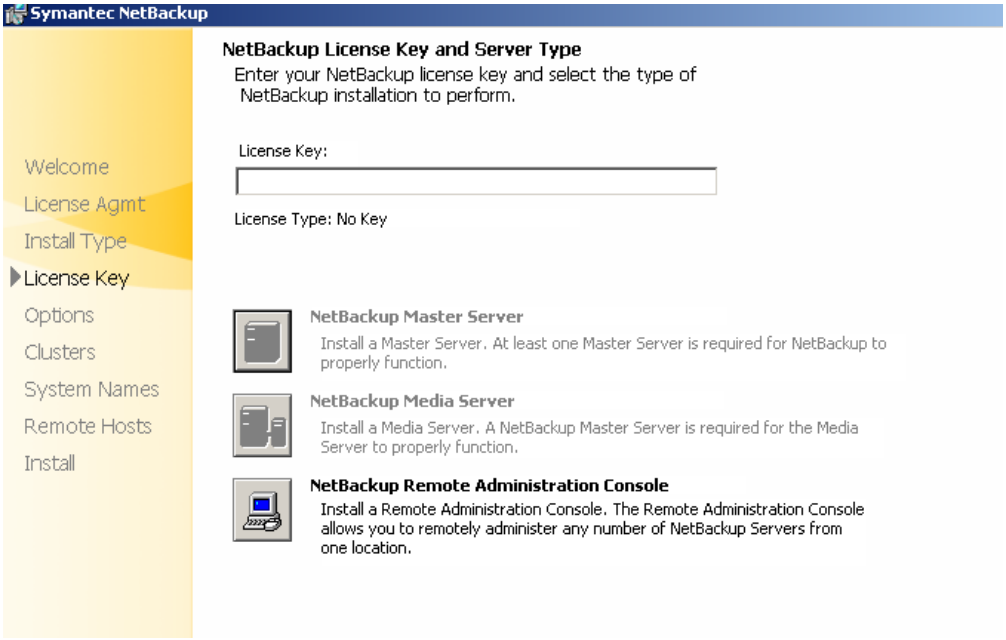
3. Accept the Licensing Terms to proceed.

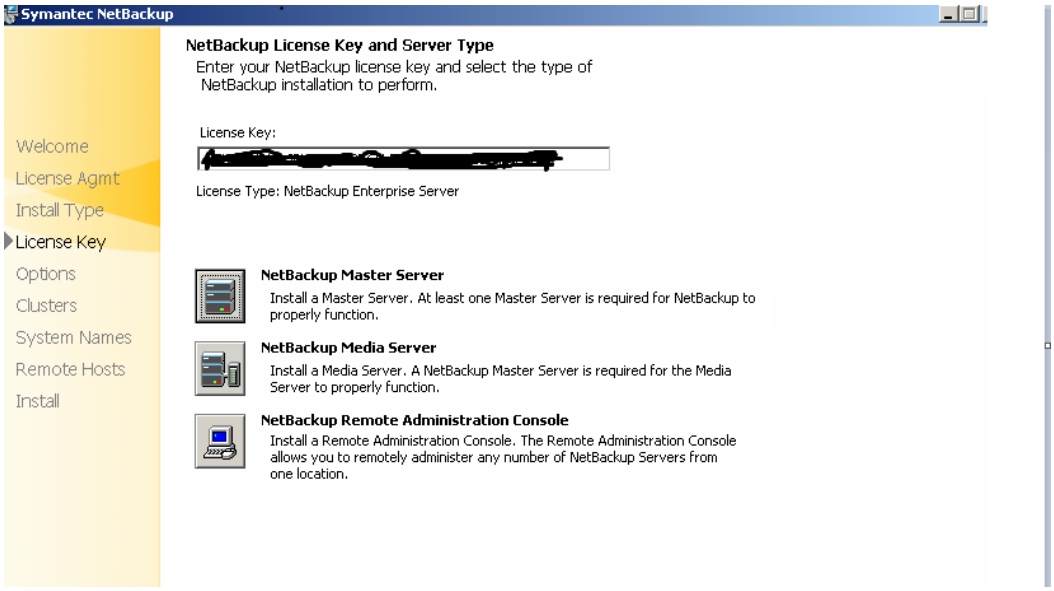


4. Choose: "**install to this computer only**" and set the type to installation to custom.

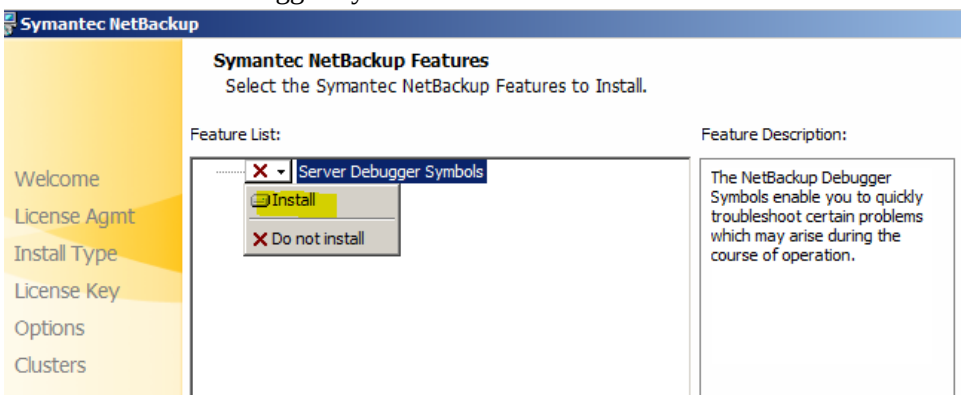


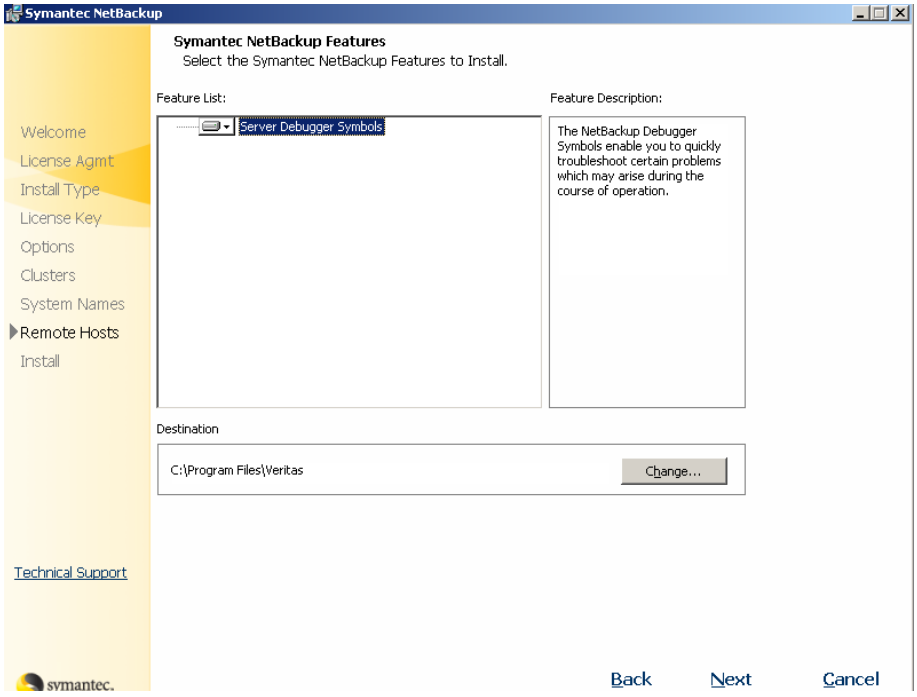
5. Enter the License Key, which pops up the greyed options.



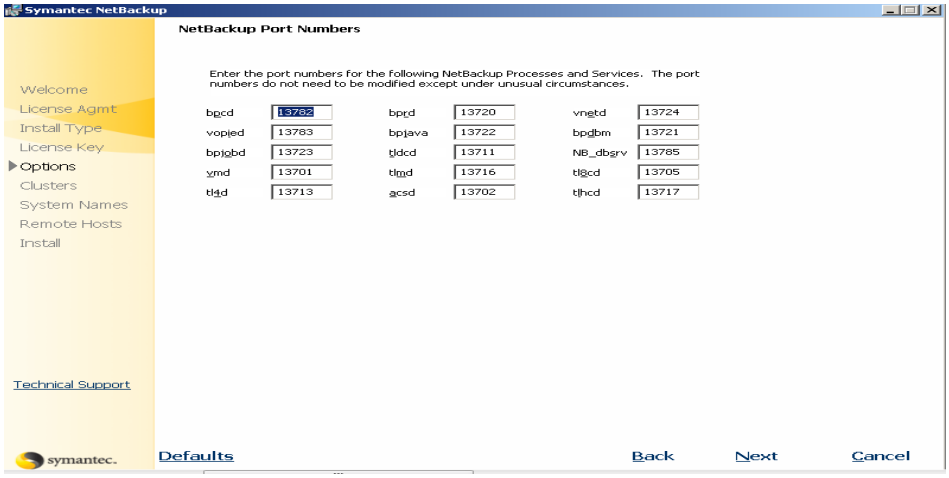


6. Install the Server Debugger Symbols.

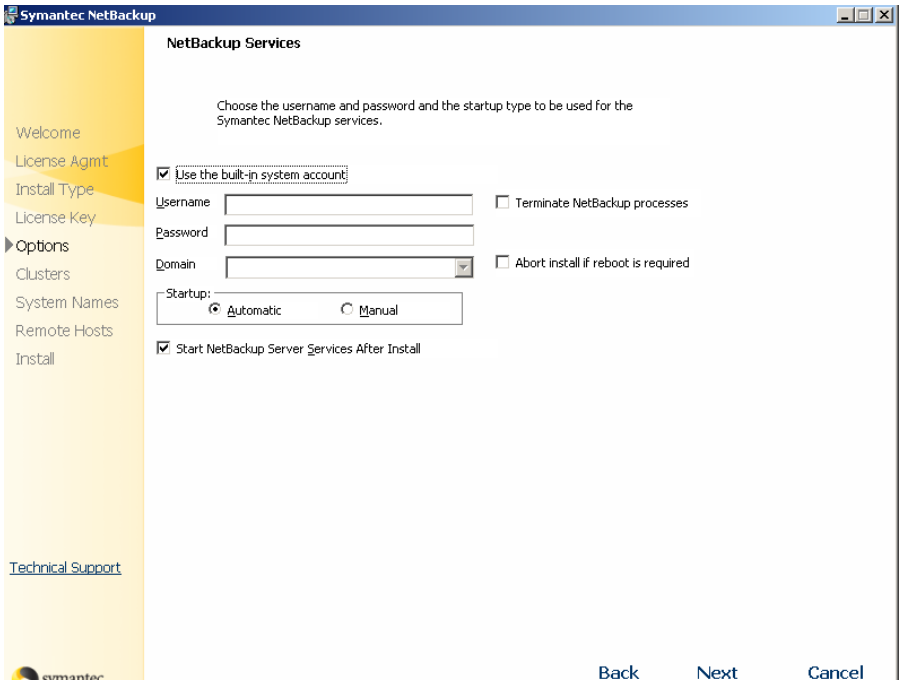




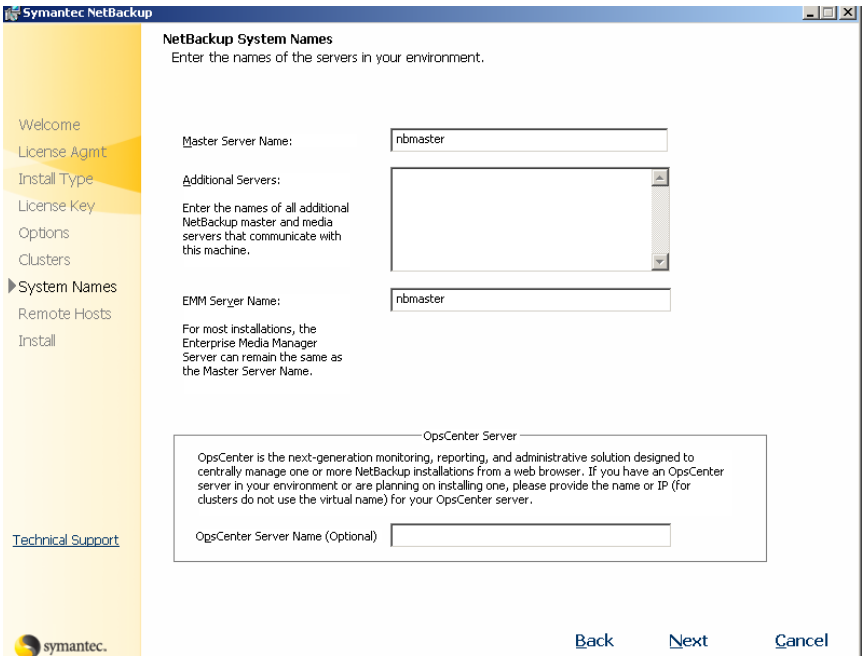
7. Netbackup ports info:



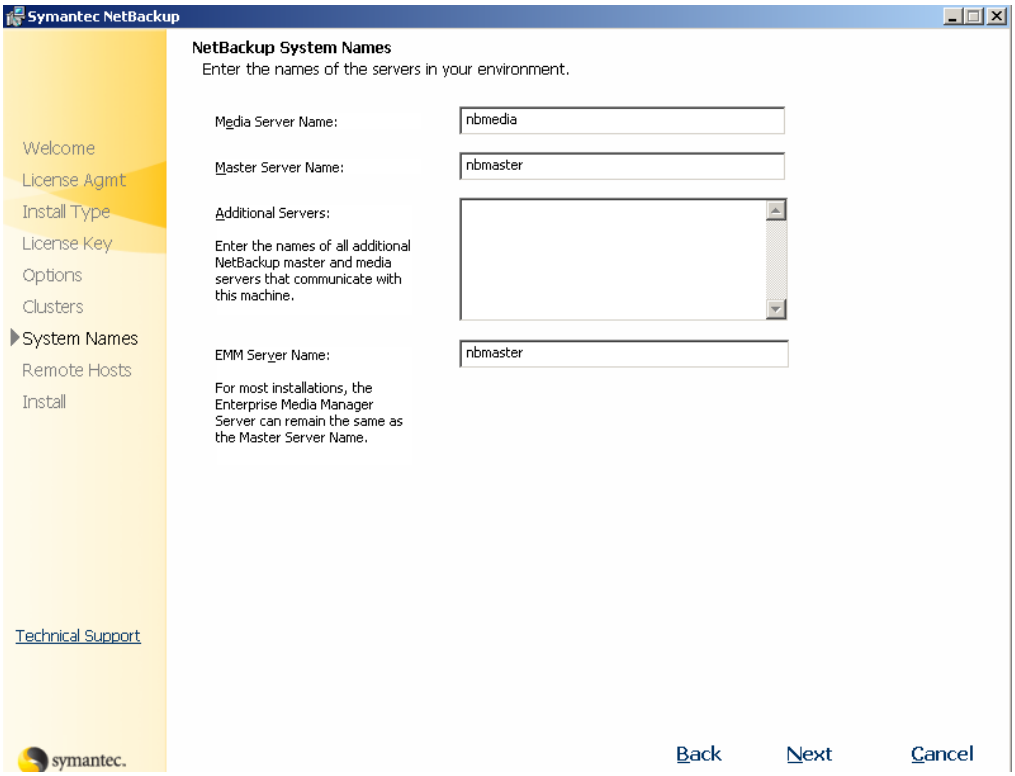
8. Netbackup Services Page



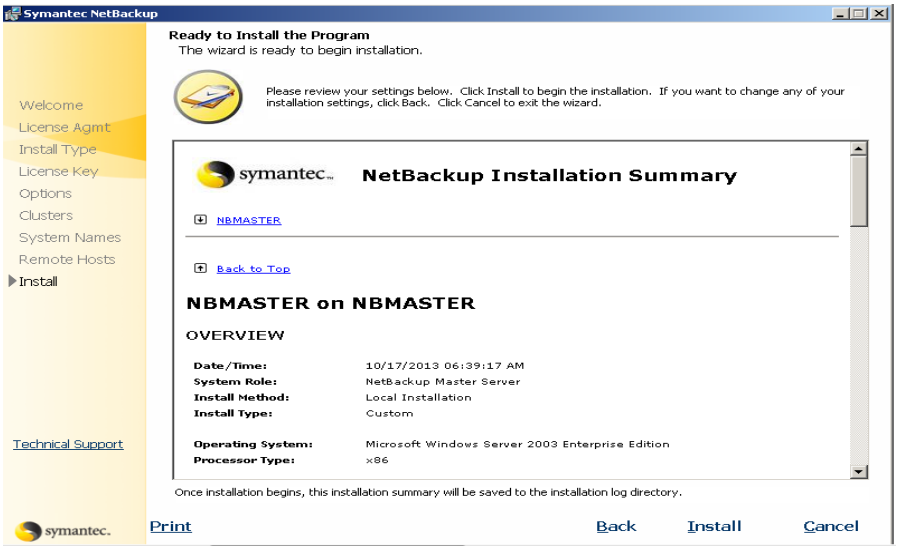
9. Enter the Master server details:

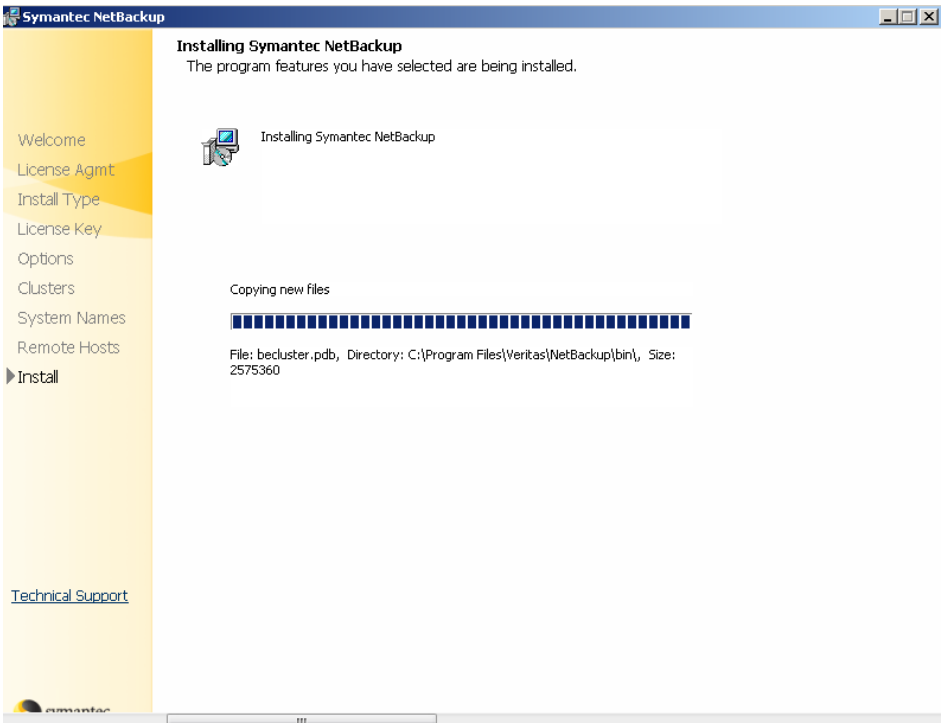


10. **Media Server must be installed only after master installation is complete**.

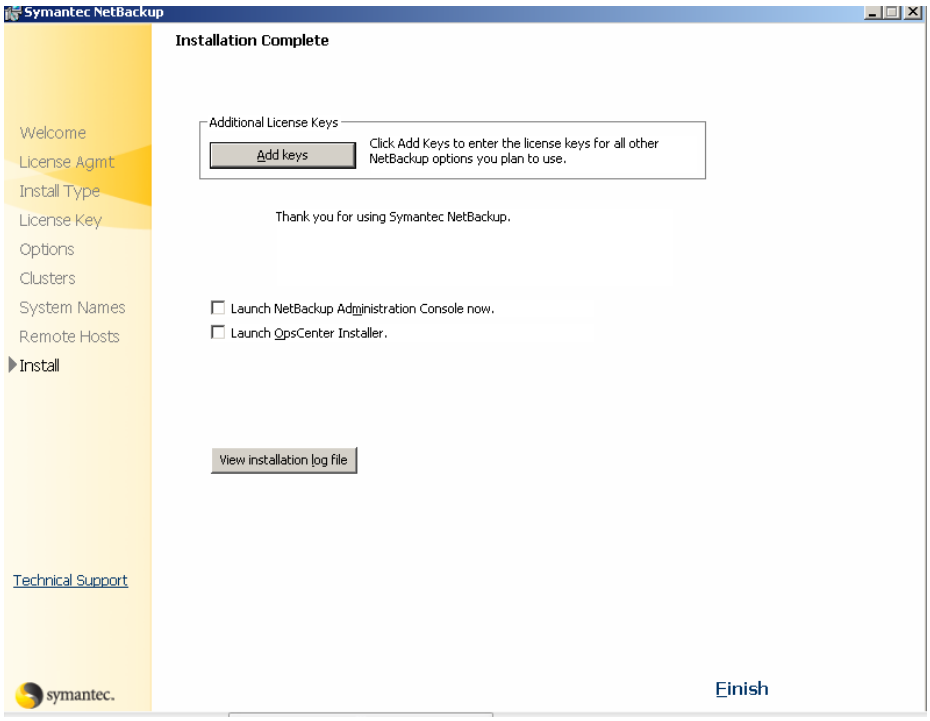


11. Install Summary Precheck.



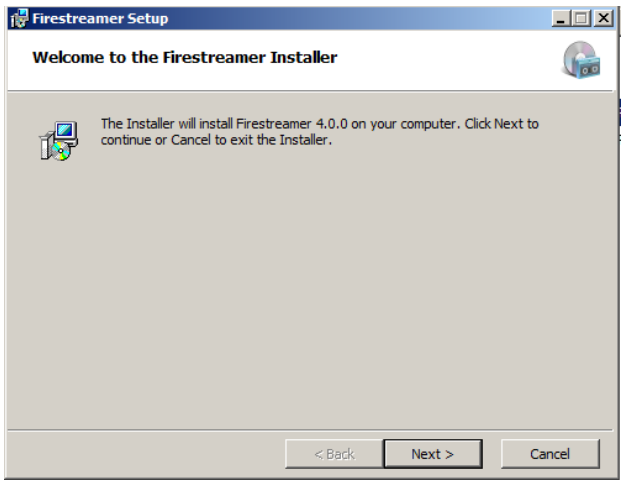


12. Install complete Window.



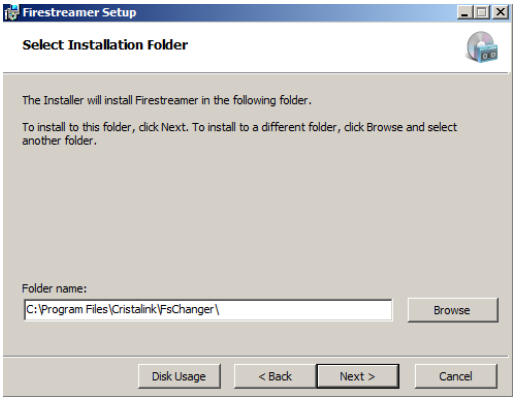
Library Configuration:

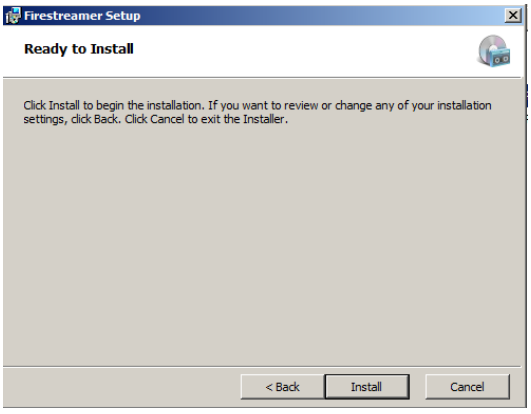
1. Kick start the Fire streamer installer.

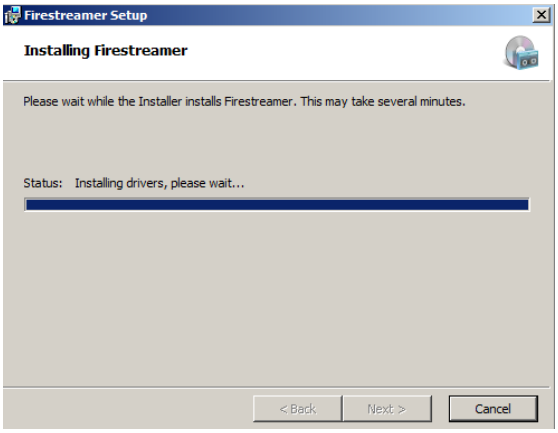


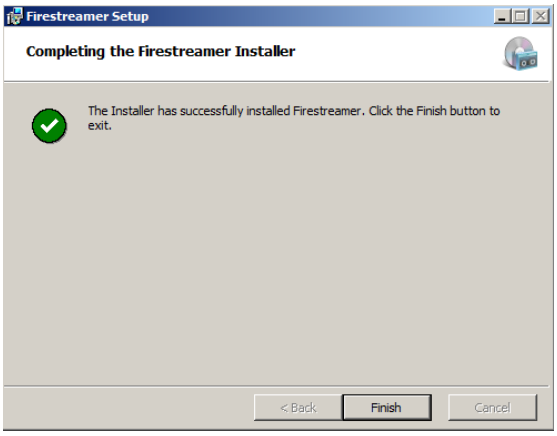
2. Accept the licensing.

3. Proceed with the defaults until completion.

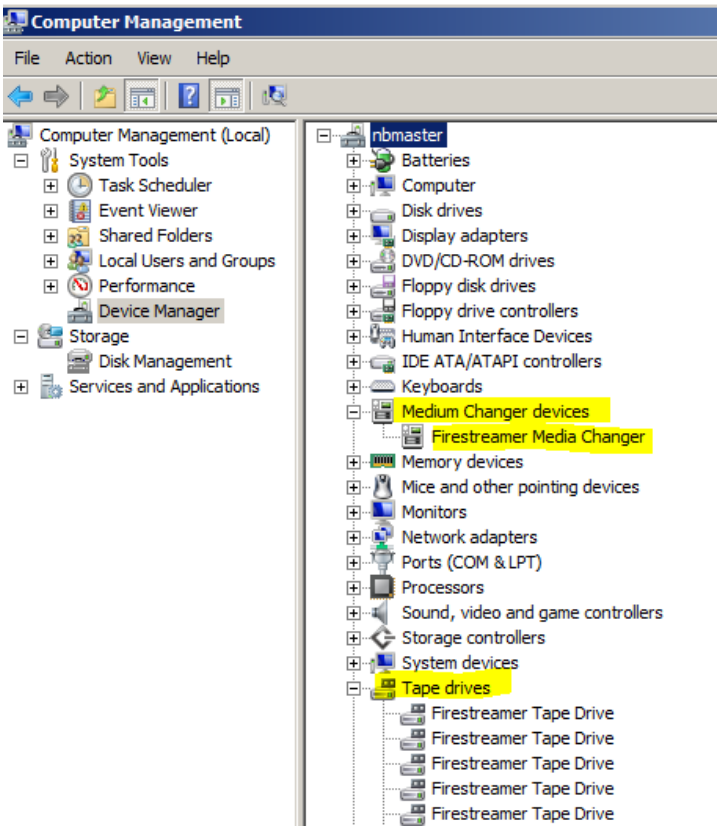






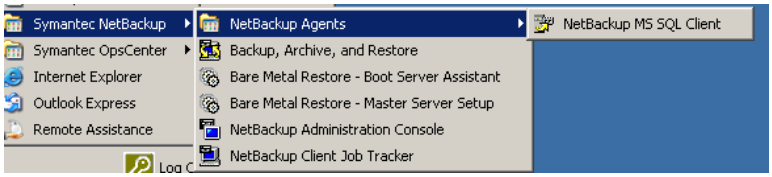


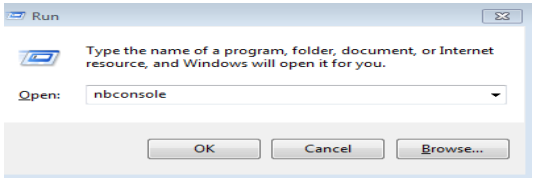
4. Navigate to computer management to notice the installed Robotic Library along with Tape Drives.



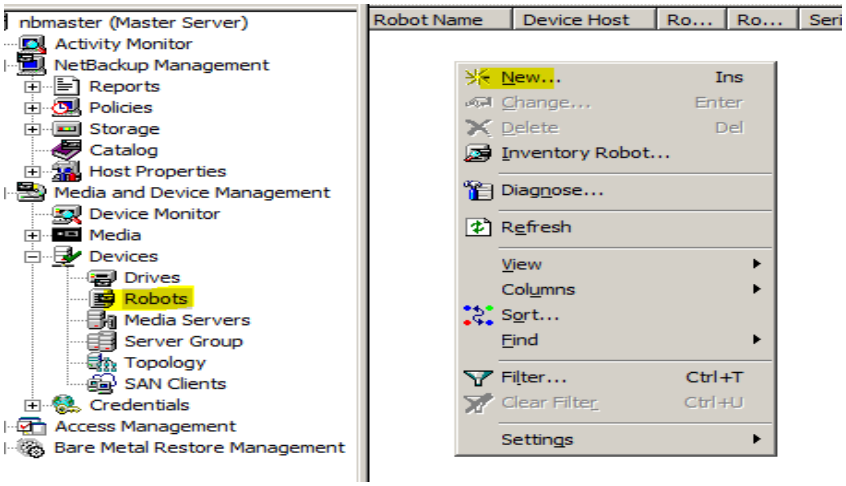
Robot & Drive Configuration:

1. Launch the netbackup admin console. You can also type the command “nbconsole” from run prompt. Make sure to configure the paths under Environment variables (Man path configuration) for the commands to work.

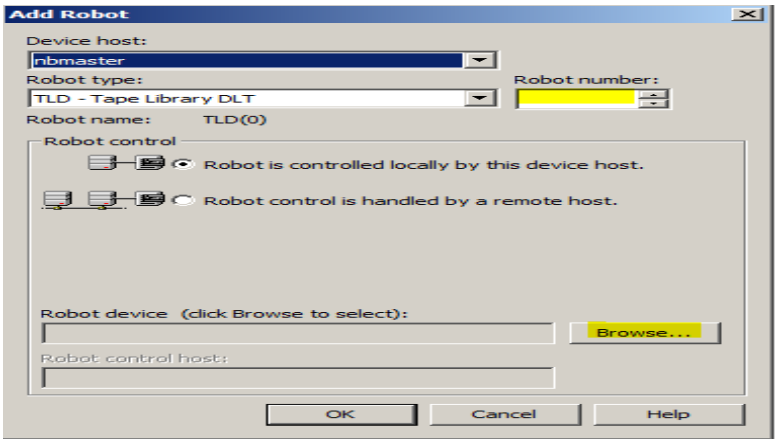


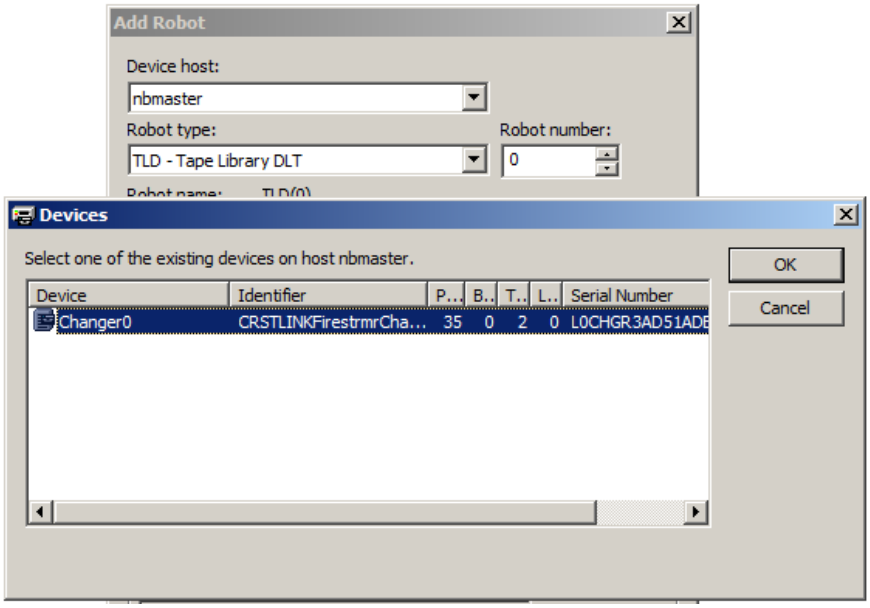


2. On Nbconsole, navigate to Robots under Devices.

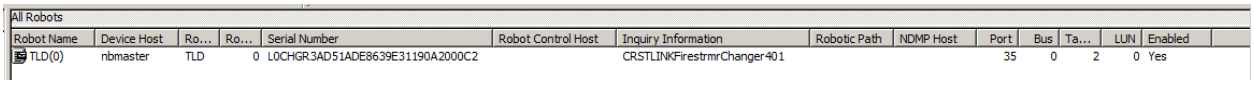


3. Choose the device host and provide a robot number (Default: Starts from Numeric value 0)

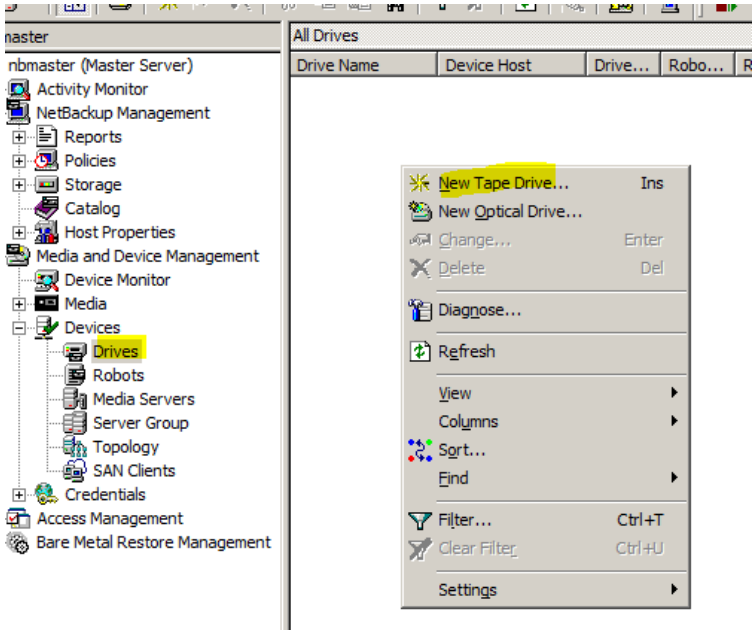




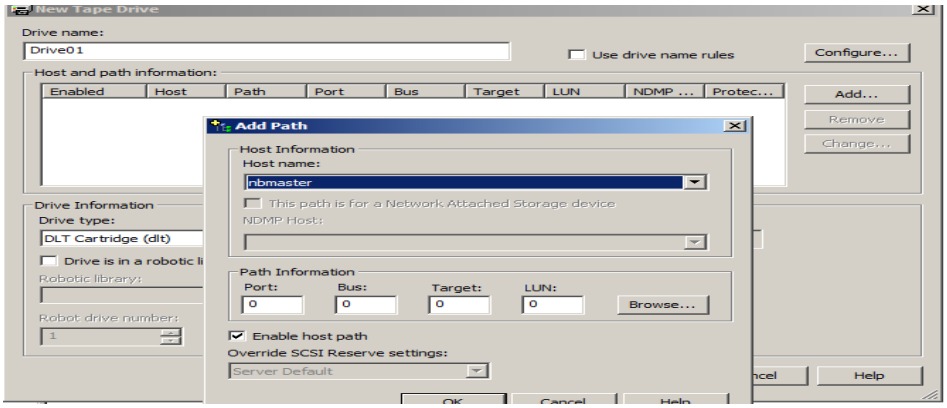
4. Robot is configured. The same appears on the right pane.

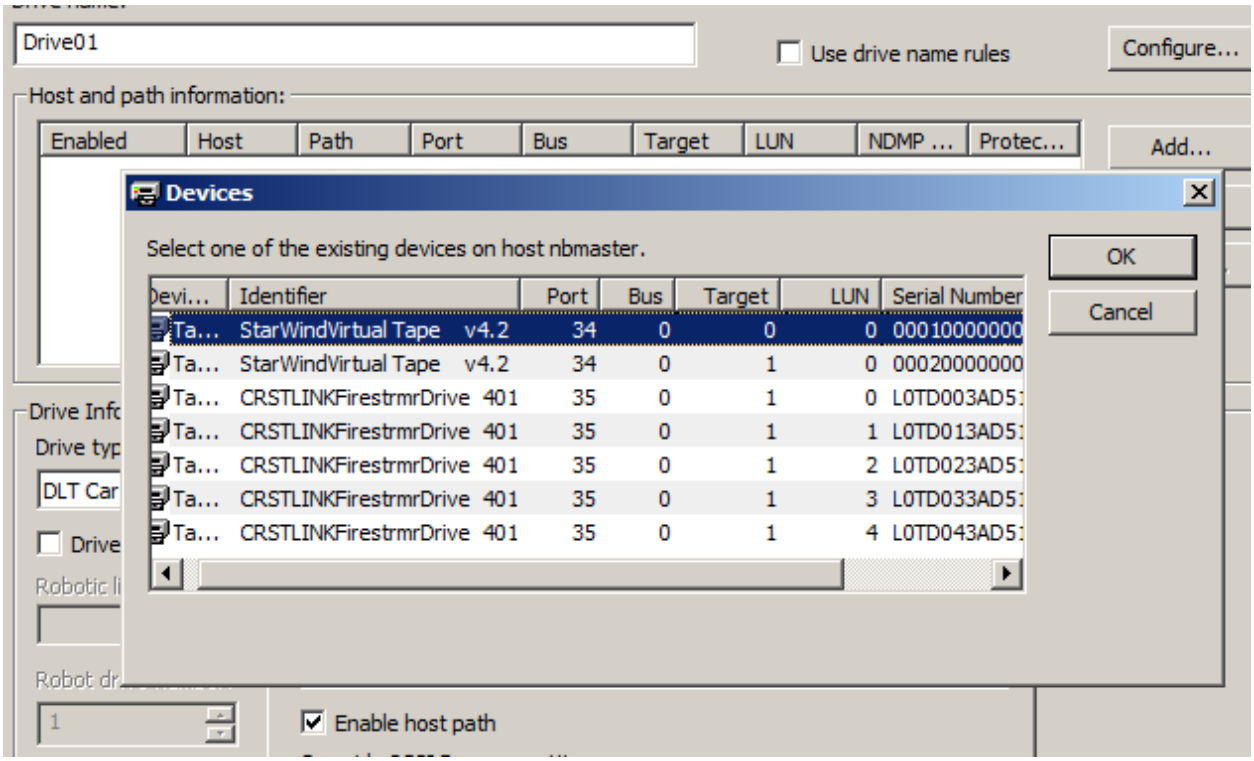


5. Now swing to the top and pull up Drives.

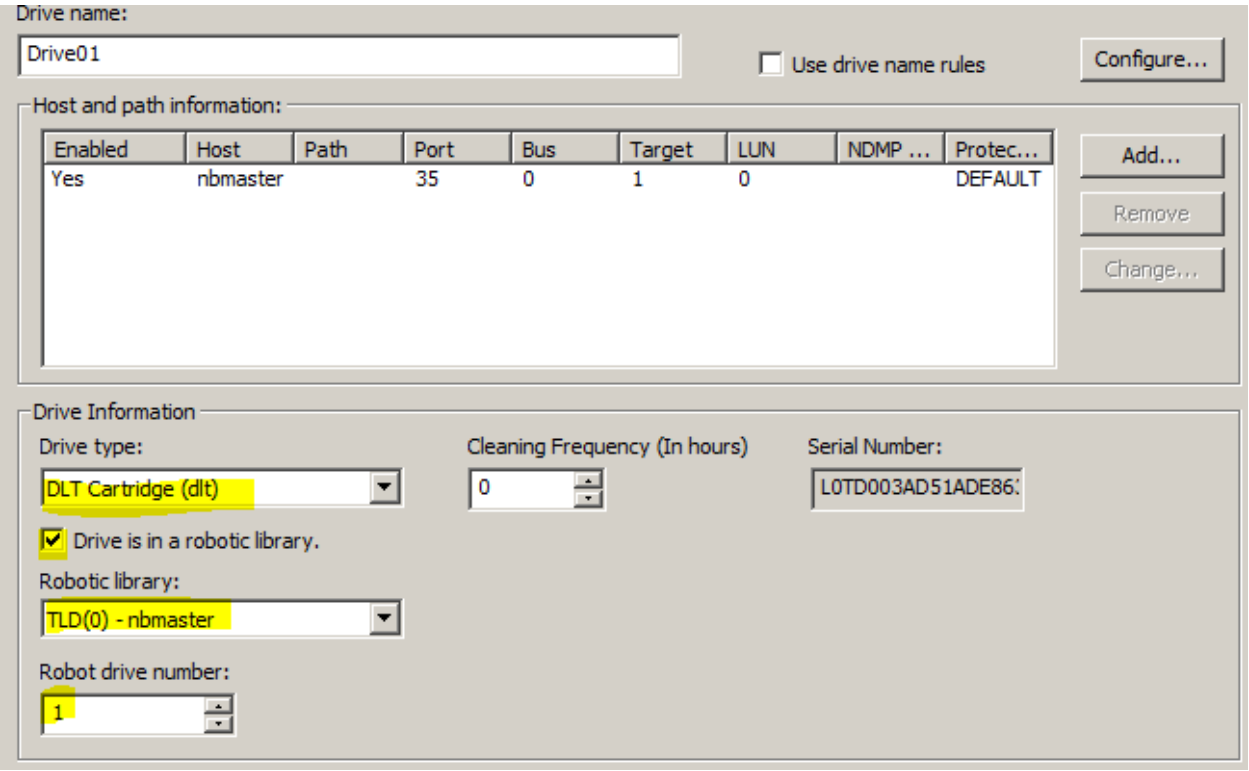


6. Provide a Drive name. Click Add on Right, select the dropdown under hostname to choose the server. Make sure Enable host path is checked.

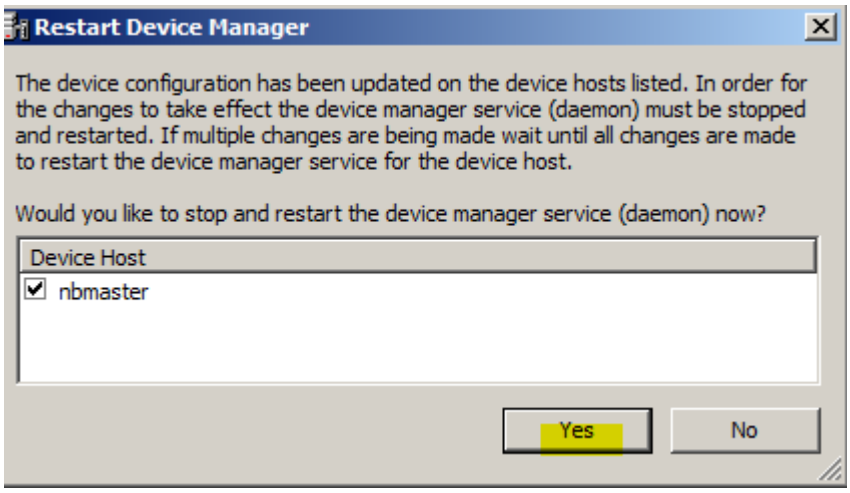




7. Change the media to DLT Cartridge, check the box “Drive is in robotic Library, choose a robot drive number (Default, Starts from 1) and click OK.



8. This would prompt to restart Netbackup Device Manager Service to accept the drive and update in EMM (Enterprise Media Managar) Database. The same works for the Robot configuration when getting updated.

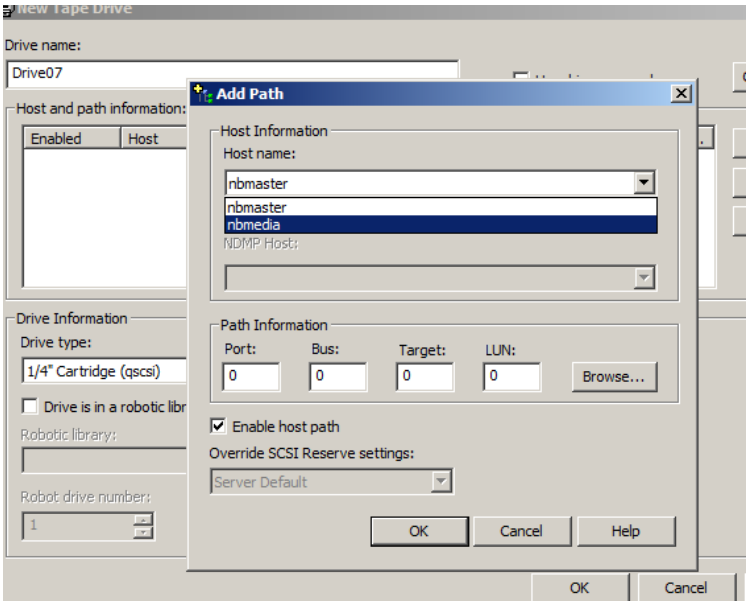


8a. Configure the rest of the drives in a similar fashion.

All Drives

Drive Name	Device Host	Drive...	Robo...	Robo...	Robo...	Enabled	Drive Path	Port	Bus	Target
Drive01	nbmaster	DLT	TLD	0	1	Yes		35	0	1
Drive02	nbmaster	DLT	TLD	0	2	Yes		35	0	1
Drive03	nbmaster	DLT	TLD	0	3	Yes		35	0	1
Drive04	nbmaster	DLT	TLD	0	4	Yes		35	0	1
Drive05	nbmaster	DLT	TLD	0	5	Yes		35	0	1

b. For robot and drive configuration on **media server**, change the host name as shown below:



Note:

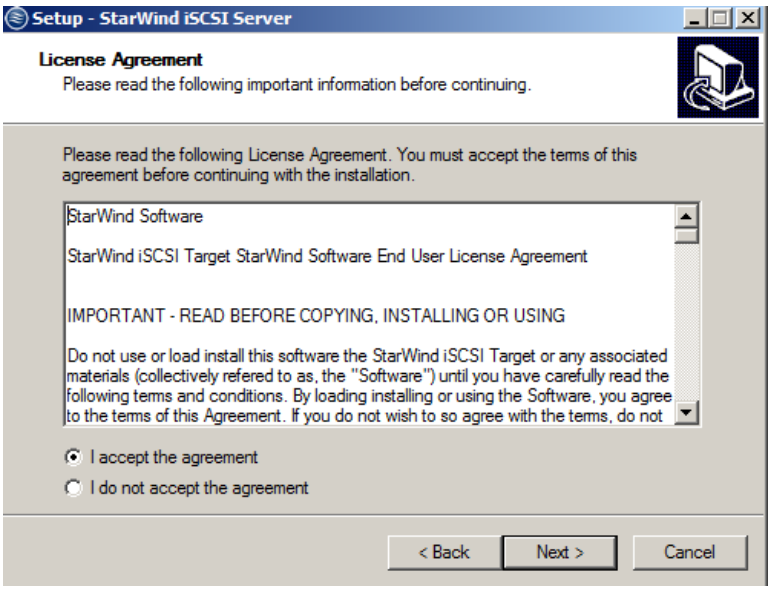
Since the library is not a shared system , the Robot and Drive must be configured on Media Server itself.

c. On installing Starwind software, you can configure the drives the same way as performed for Firestreamer.

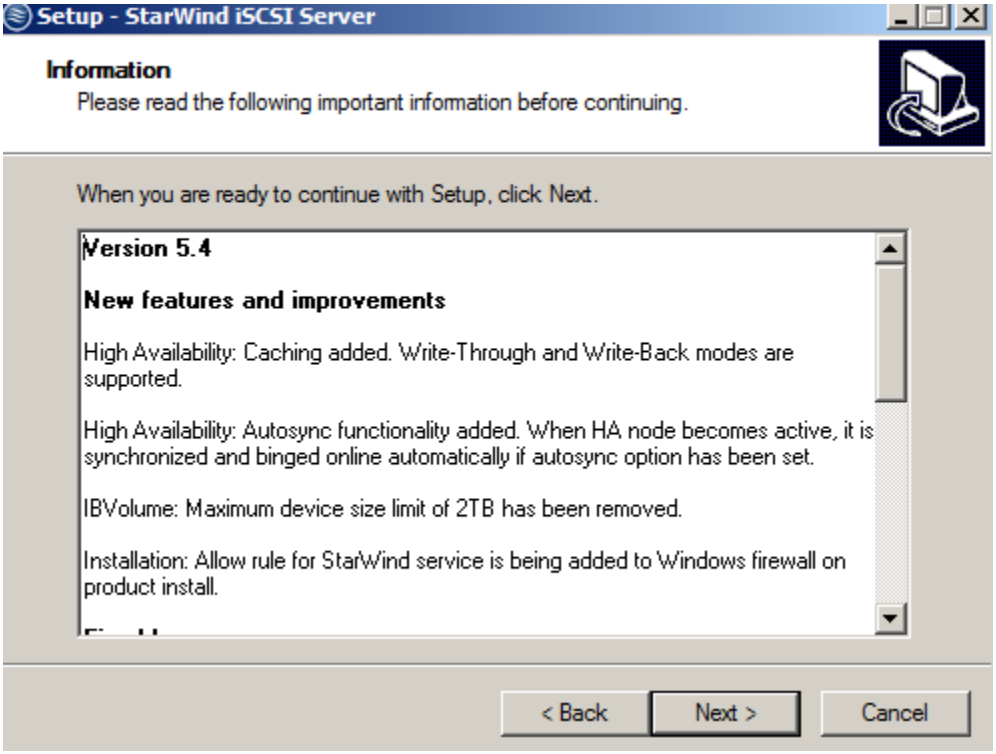
Starwind ISCSI SAN SERVER

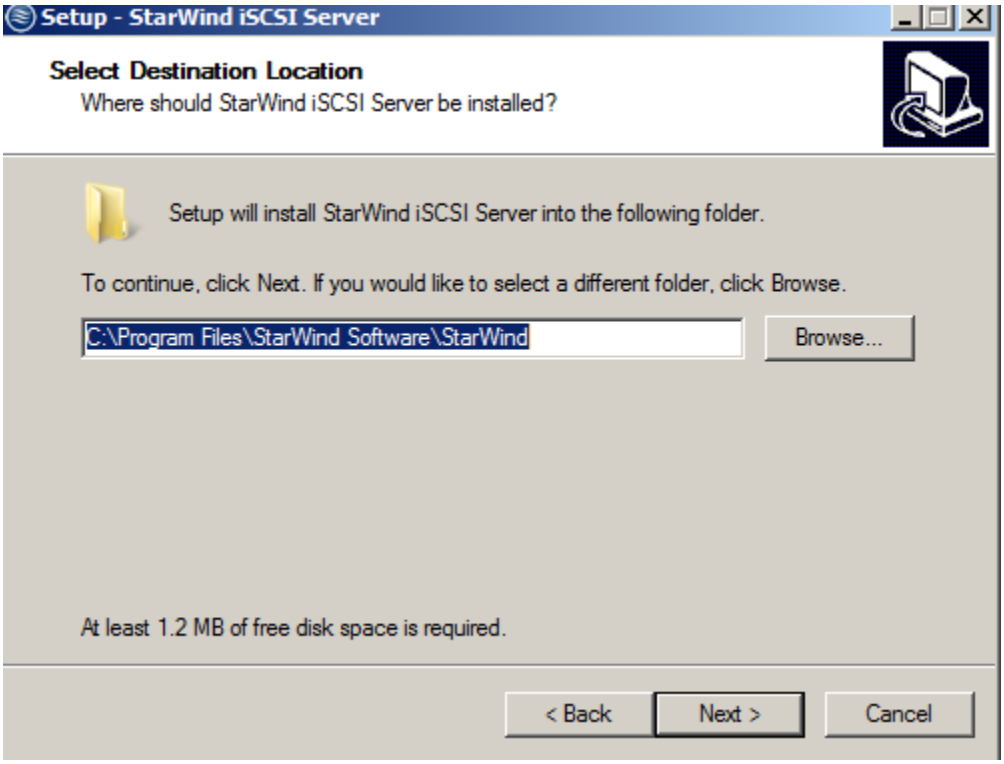
1. Startup the wizard.

2. Accept the licensing terms.

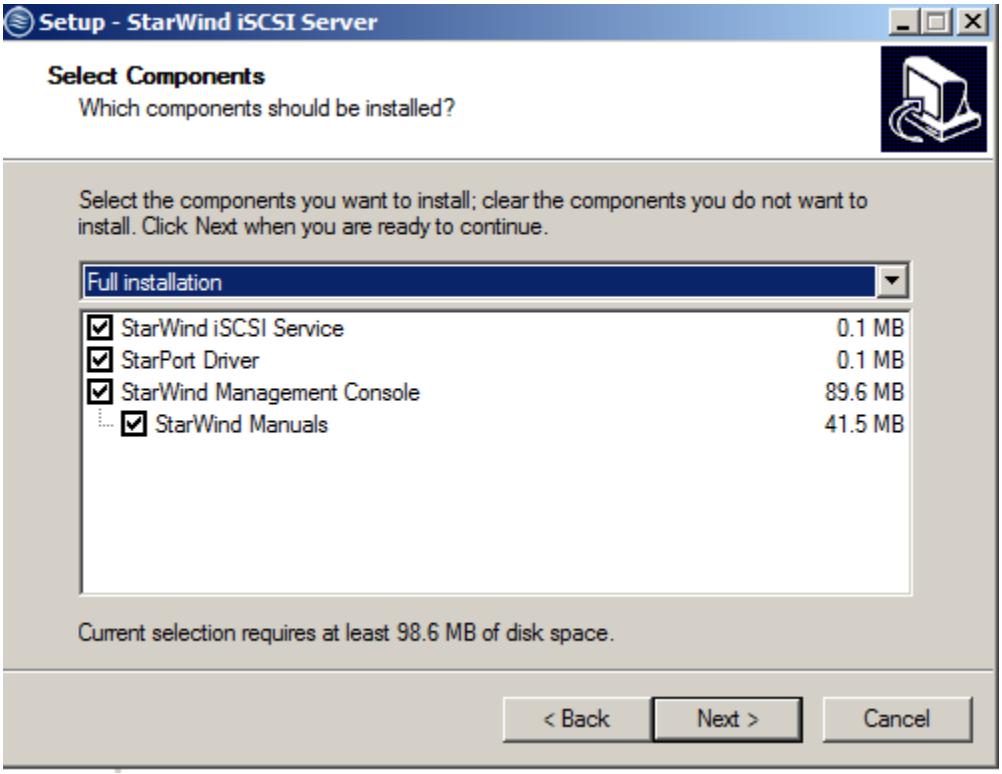


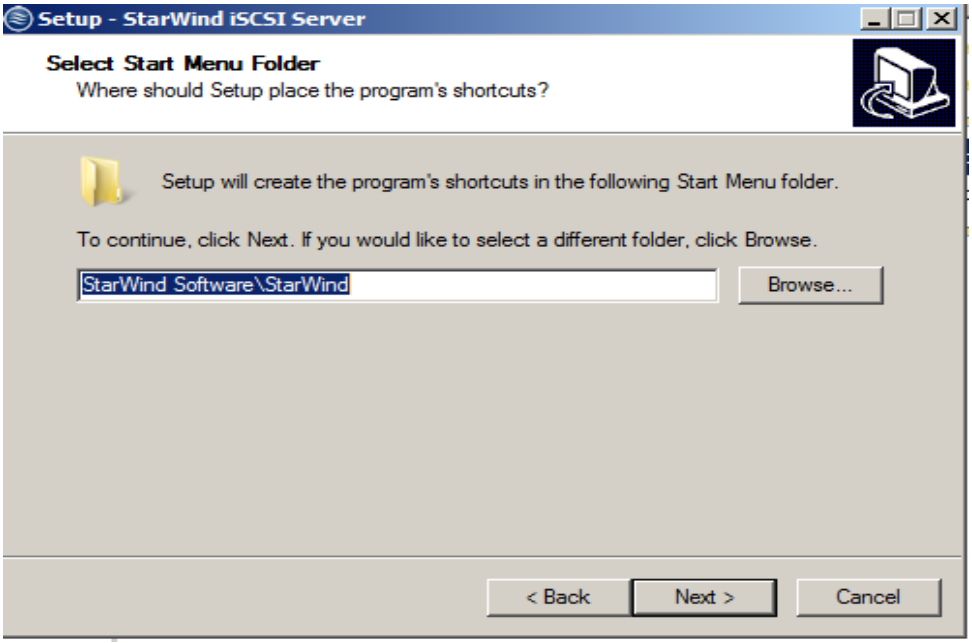
3. Accept the defaults and proceed.

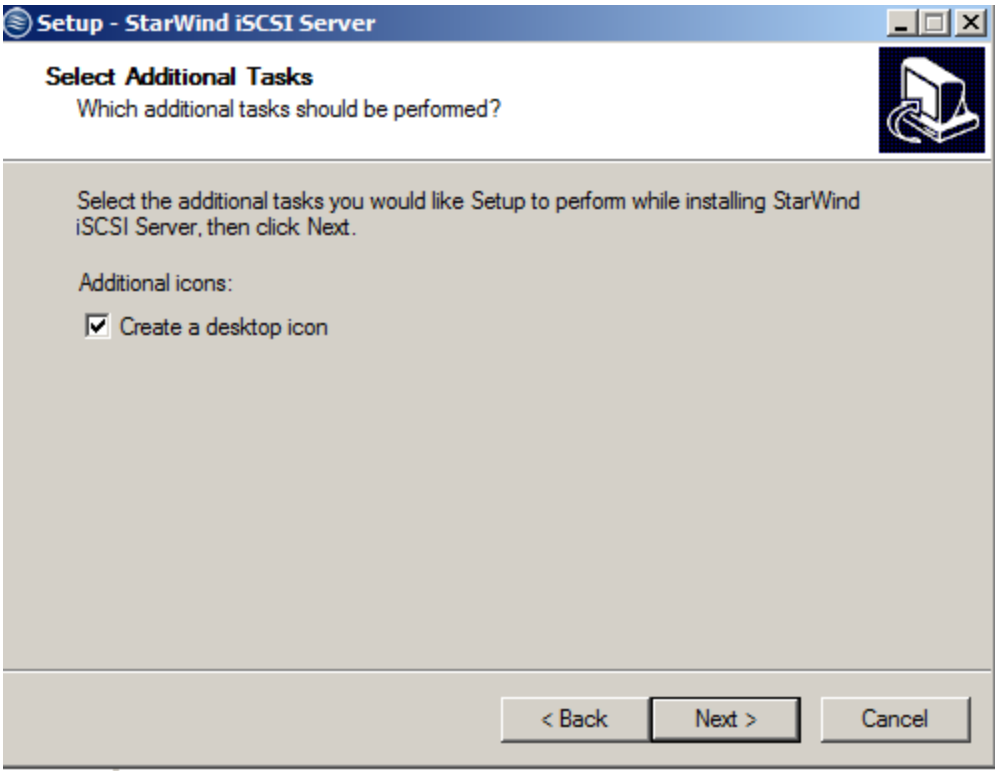


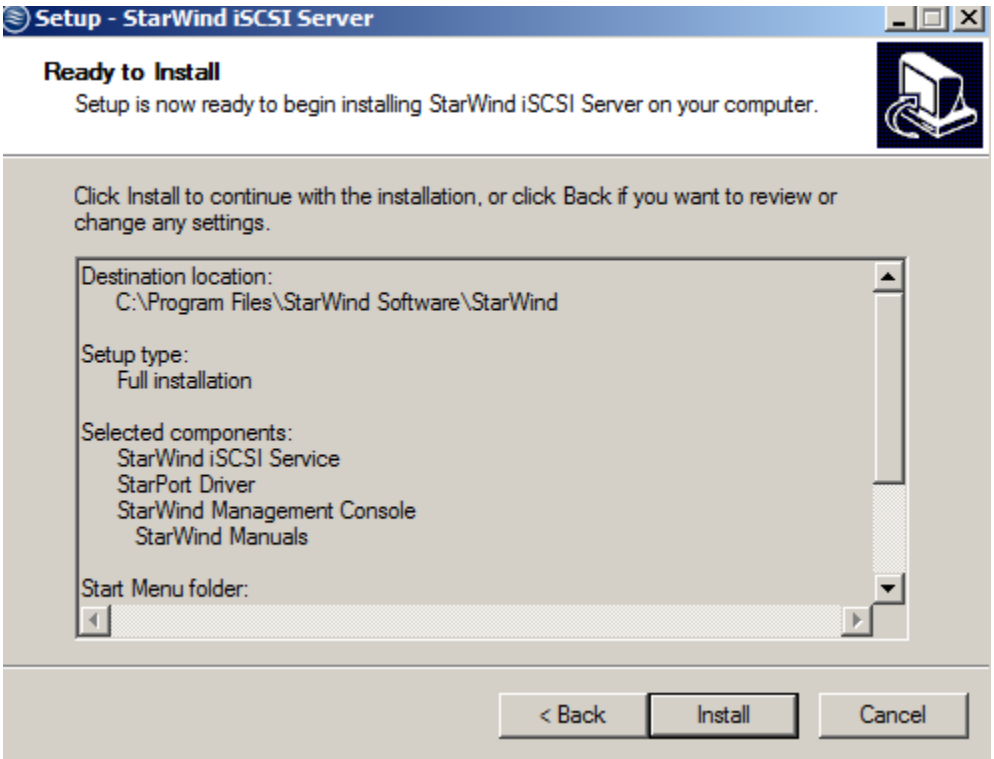


4. Important Services Required

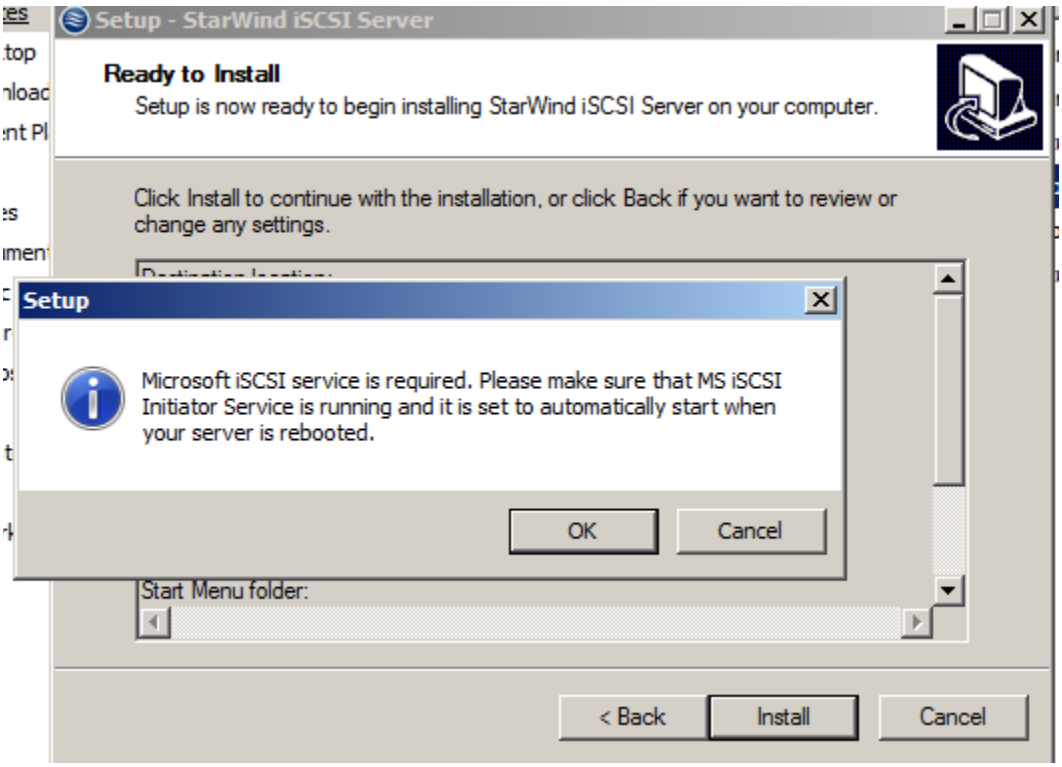




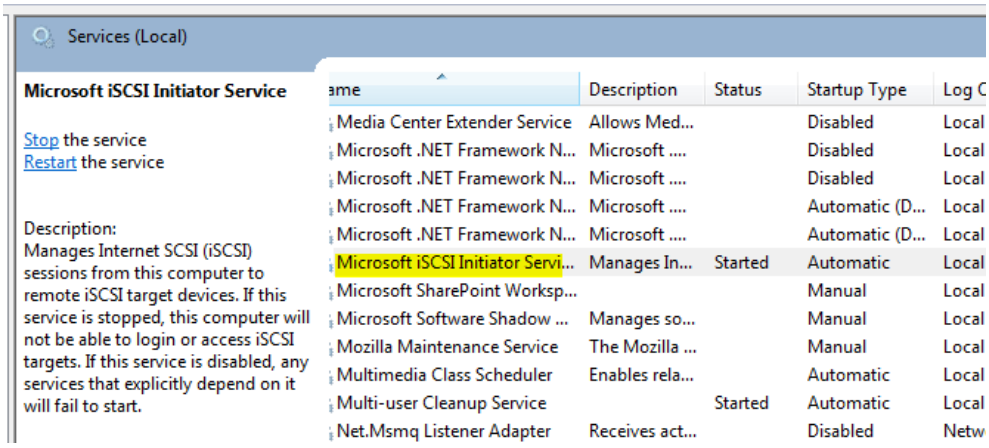




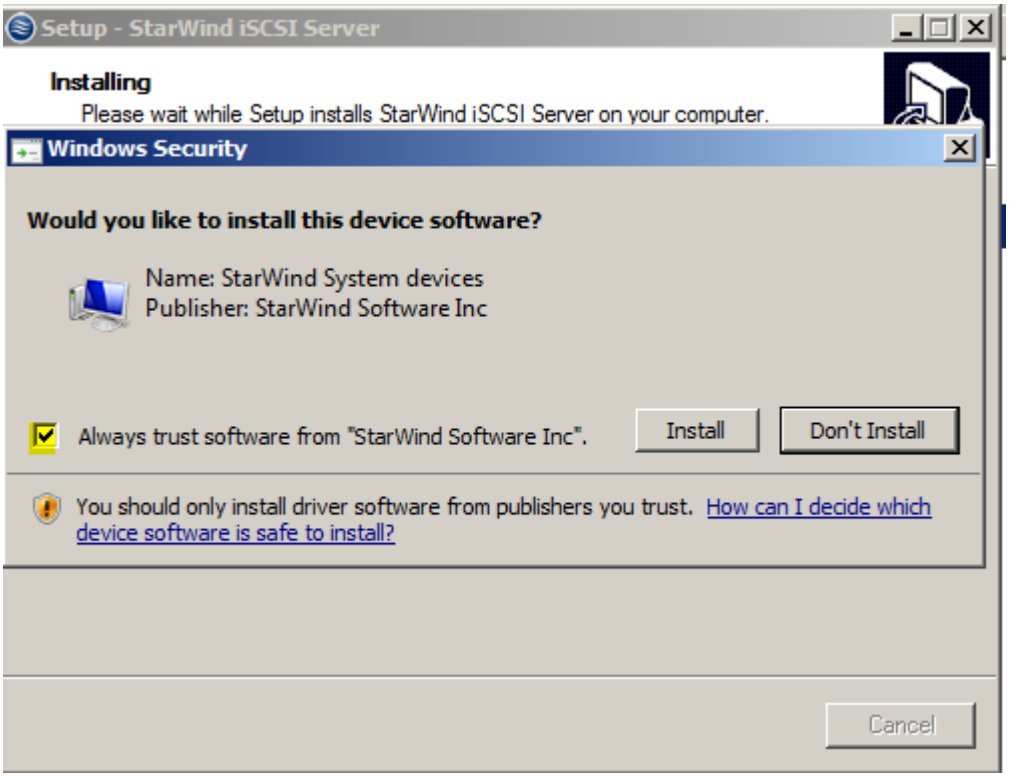
5. Microsoft ISCI service should be running/ is mandatory before install; else the ISCSI binding would fail.



6. M-ISCSI, by default is set to disabled. Choose start type as “automatic” and enable the service.

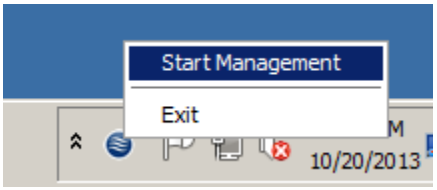


7. Accept Trust and install the software.

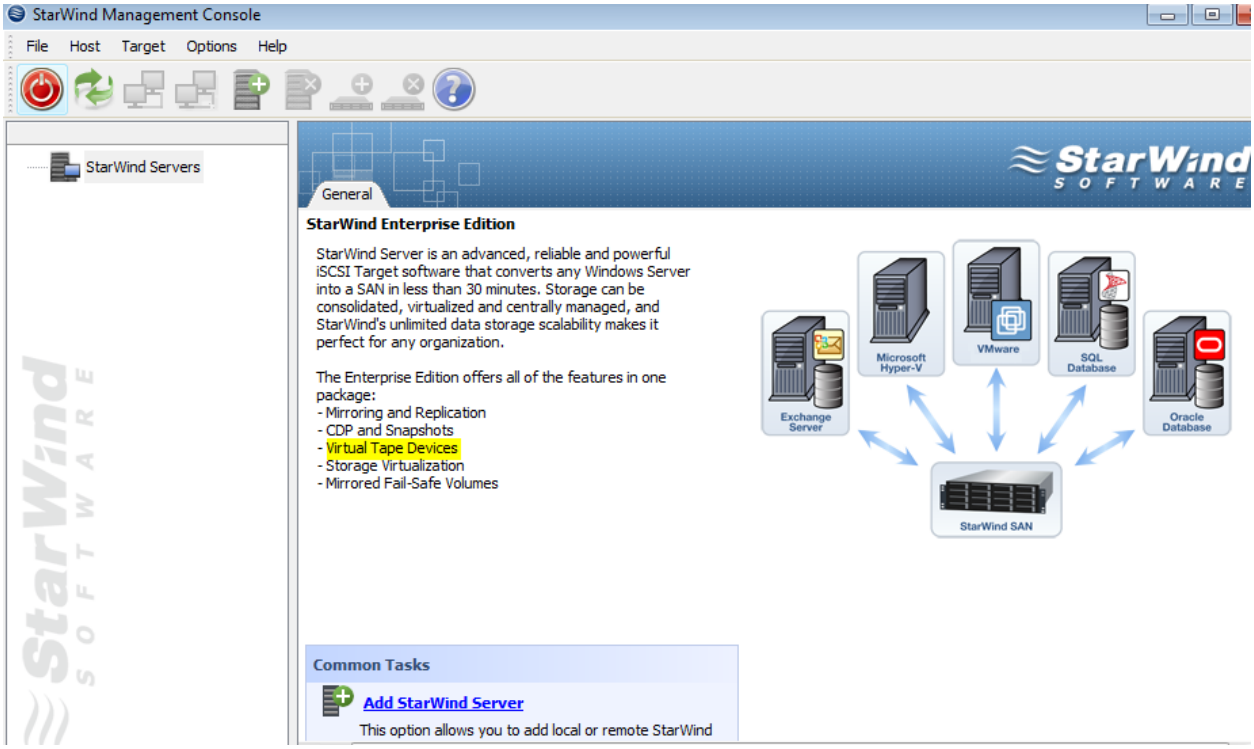


8. Launching the application would pull the Welcome Screen and then disappear to the **task bar**.

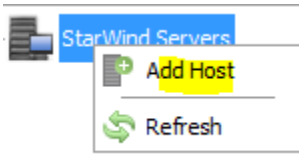
9. Right click the wavy symbol and click on “Start management” to bring forward the Management Console.

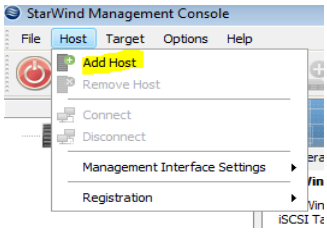


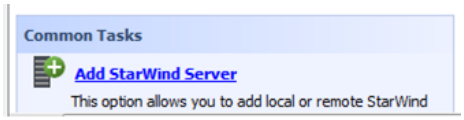
10. Sneak Peak→ Management Console: Focus on Virtual Tape Devices.



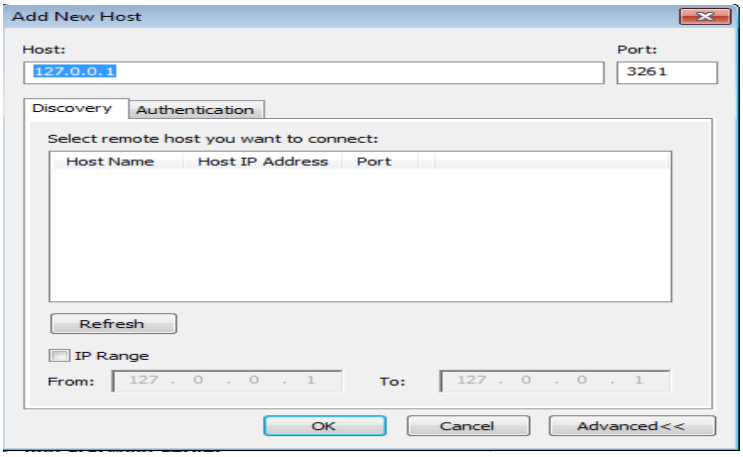
11. Three ways to add host.



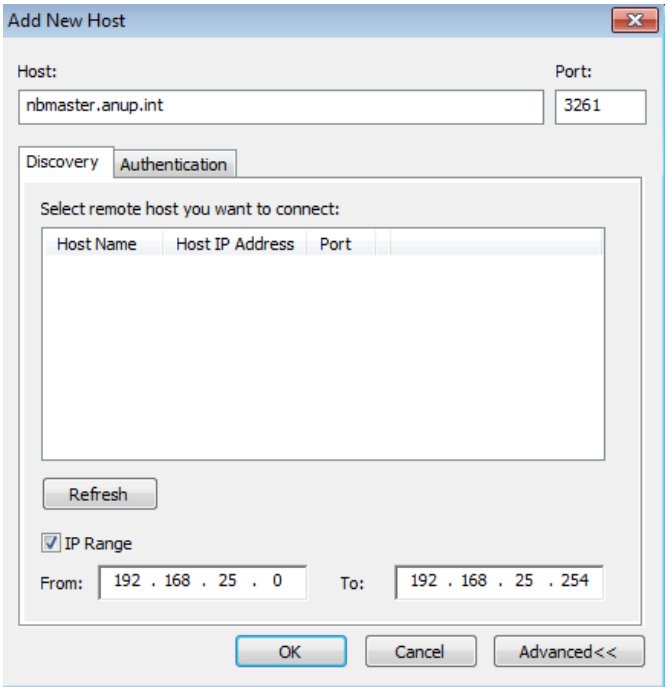


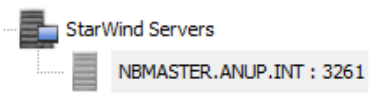


12. The default screen looks like this.

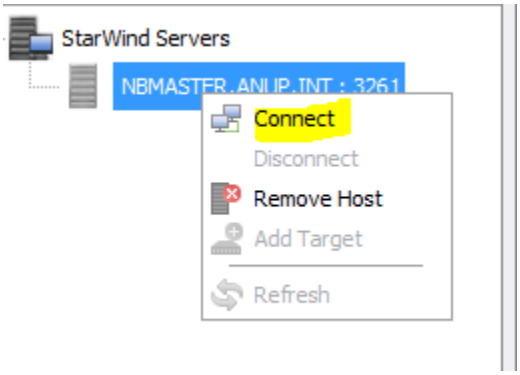


13. Define the host and ip Range and click ok to add the server.

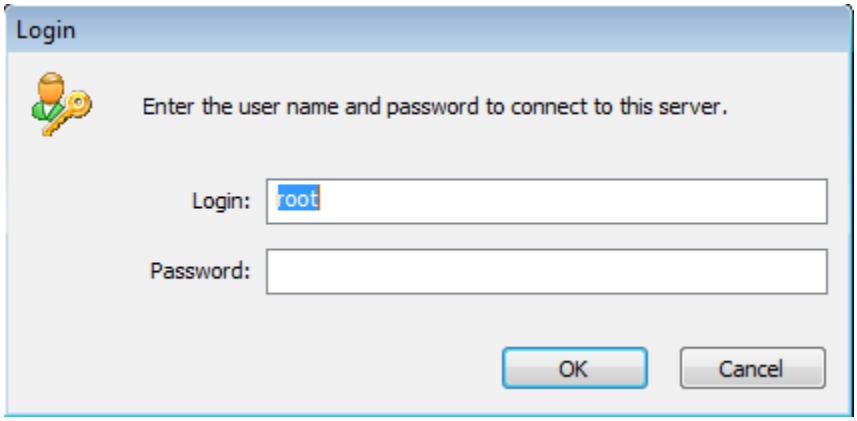




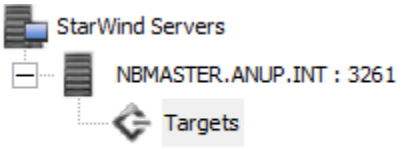
14. Right click on the added server and click to connect to login.

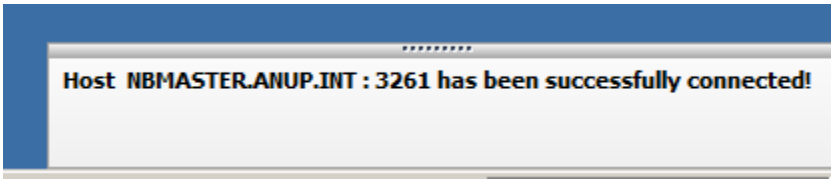


15. Login to the starwind system.

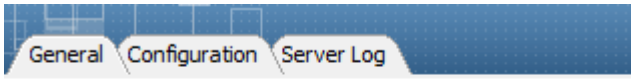


16. Upon Logging, the target symbol pops up and followed by a “successful connection” message near the task bar.

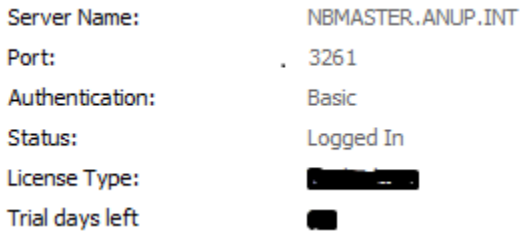




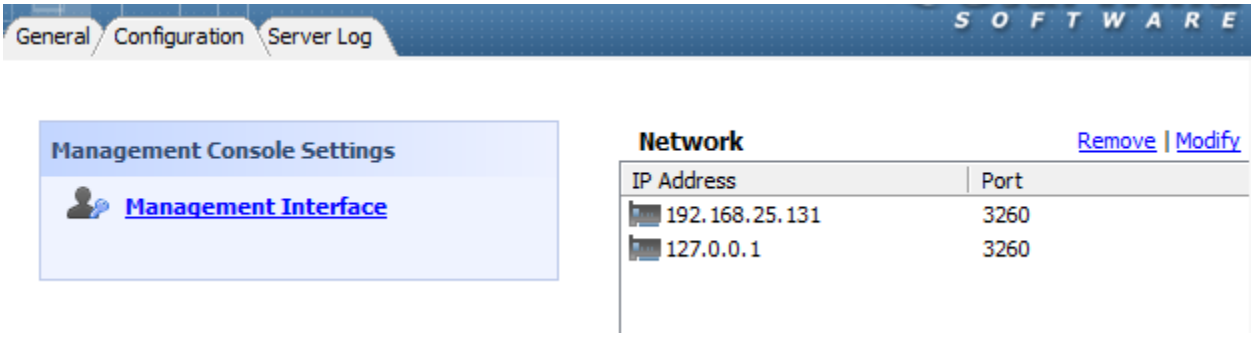
17. Look out for the three tabs as shown below:



Full view of **General tab**:



Full view of **Configuration tab**:

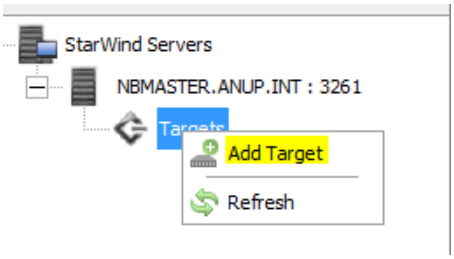


Note:

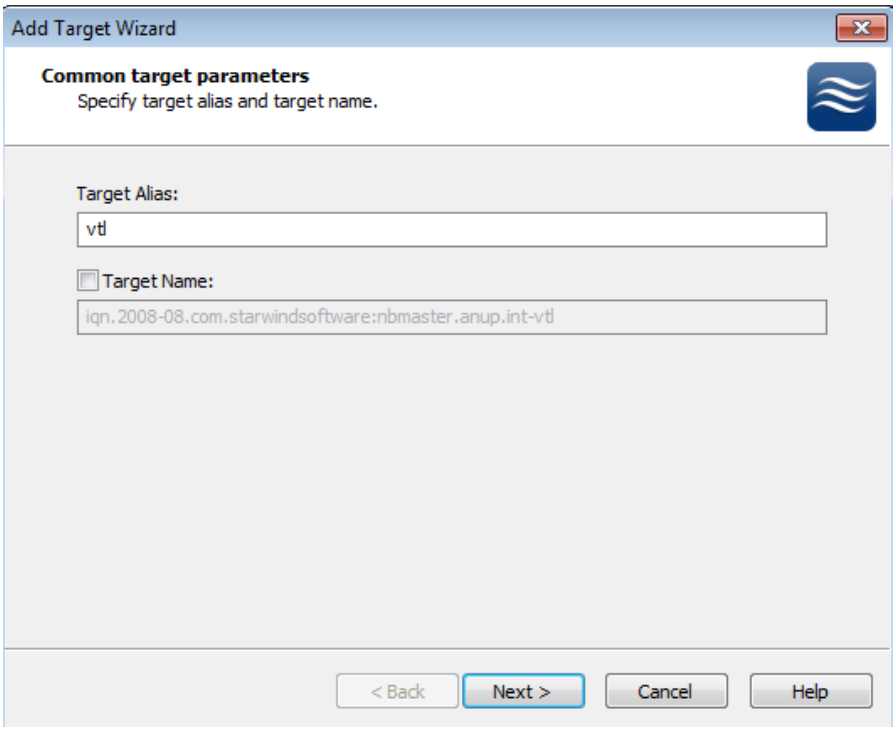
→MS-ISCSI initiator port=3260

→Starwind-ISCSI port=3261

18. Right Click on target symbol and click on "**add target**"

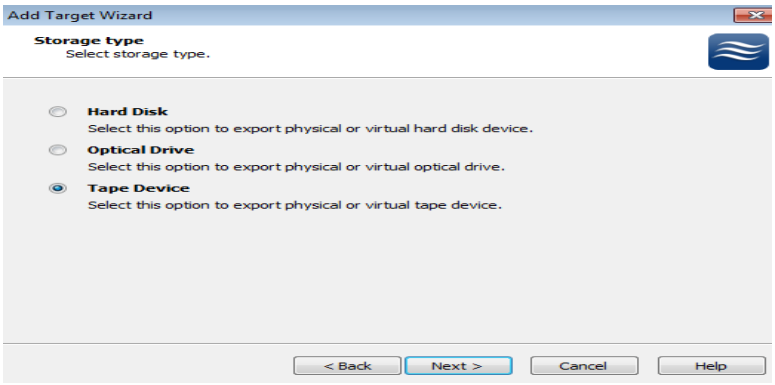


19. Enter a target alias and click next.

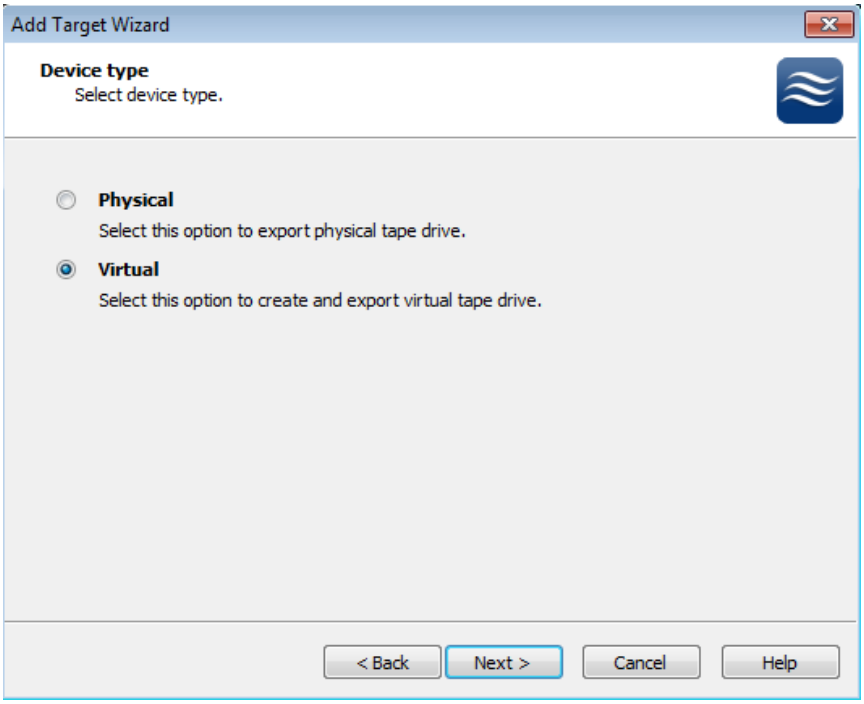


Note: the target name which is shown above is otherwise known as ISCSI FQDN(Fully Qualified Domain Name)

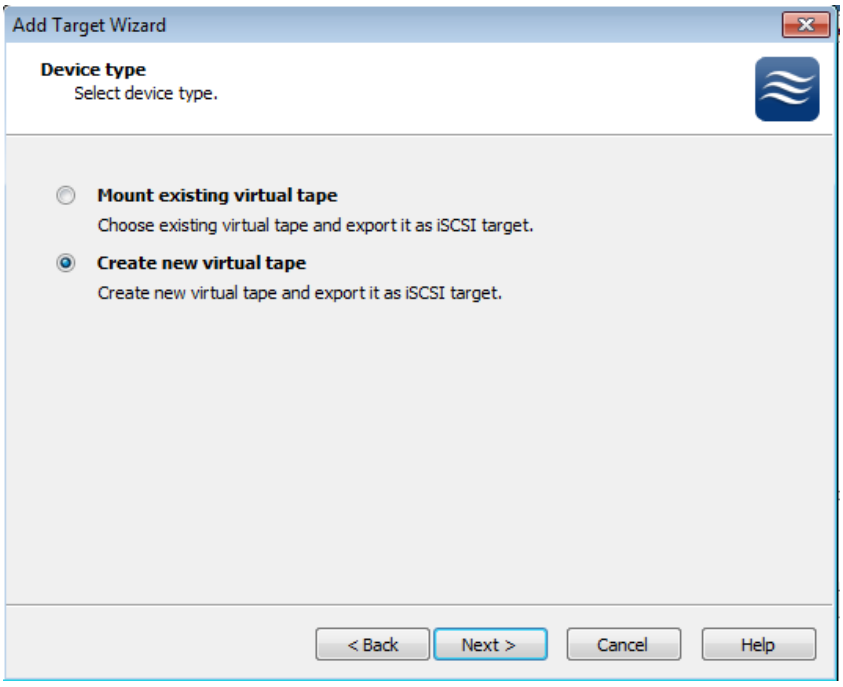
20 . Select Tape Device and click next.



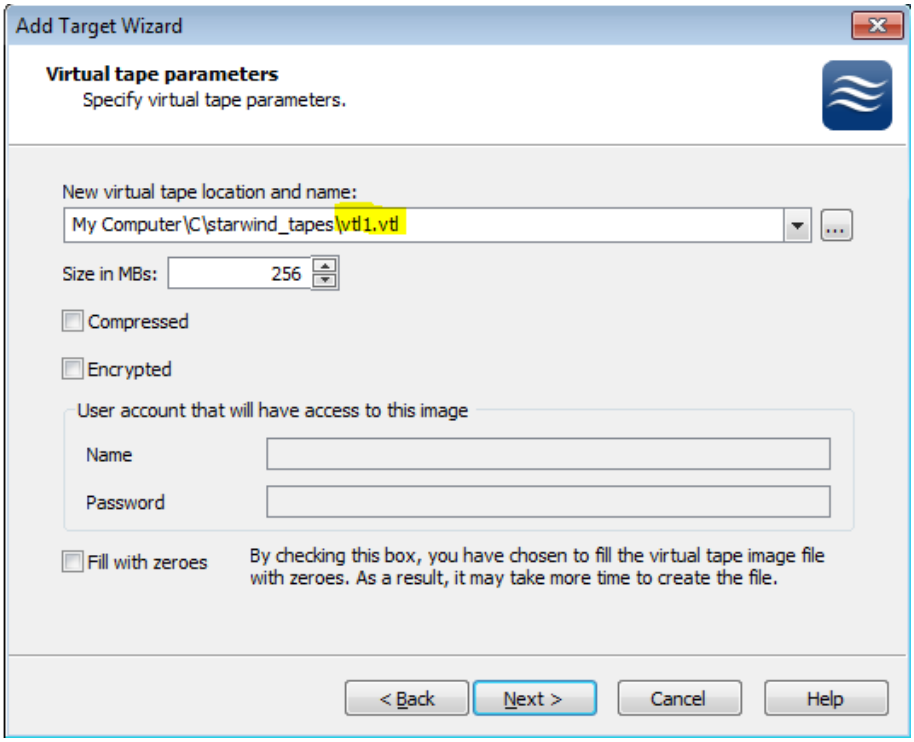
21. Choose virtual and click on next.

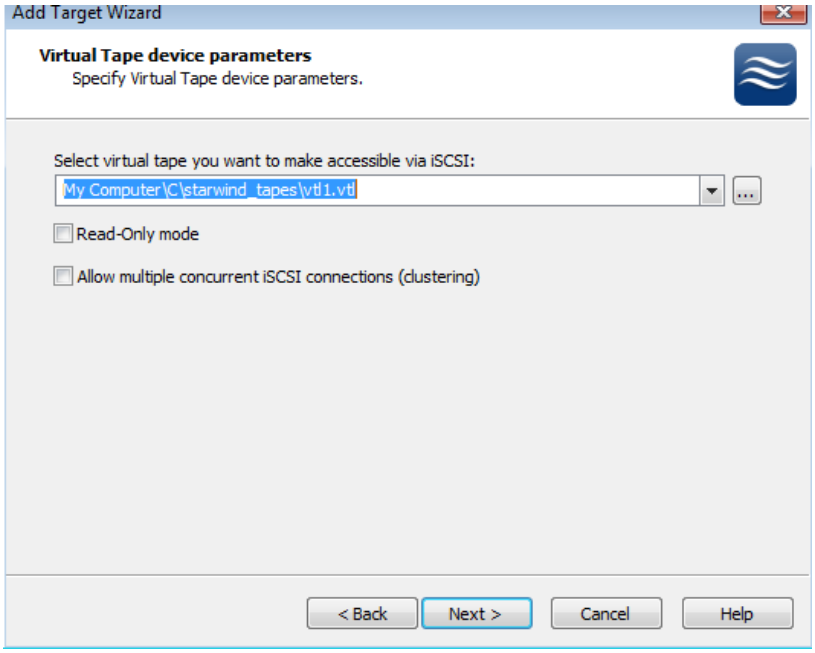


22. Choose create new virtual tape and click next.

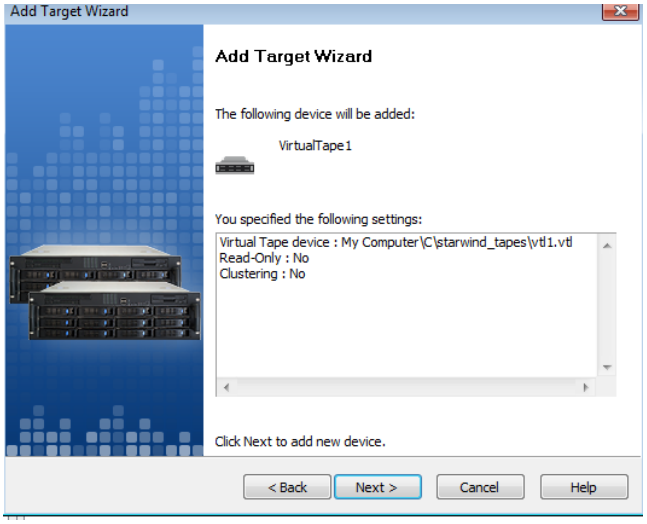


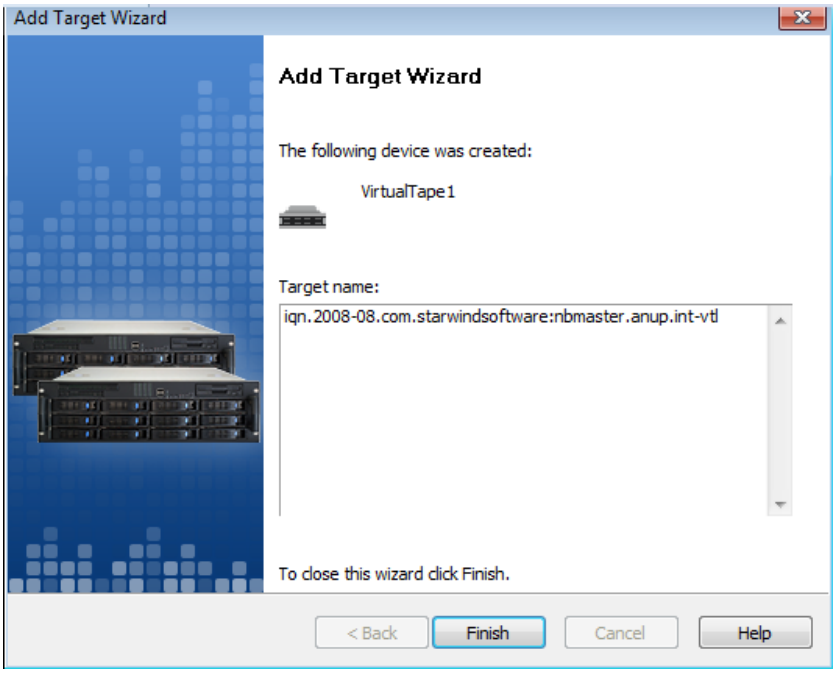
23. Create a virtual tape with **.vtl extension** and choose the location to save it and clcik next.





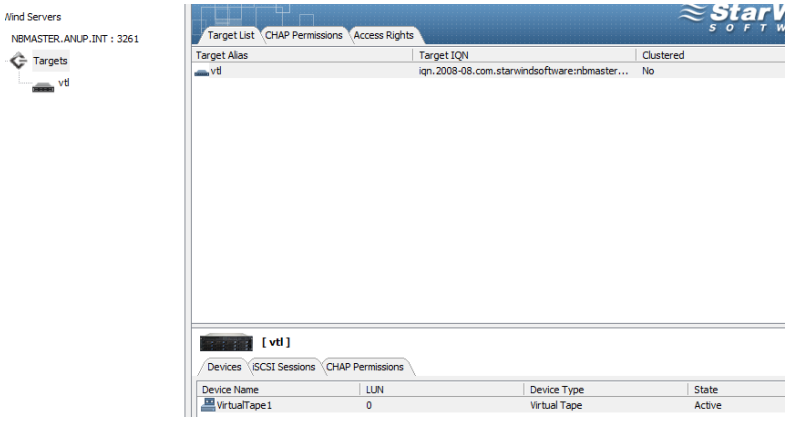
24. Final Target Device and Target Name Check.



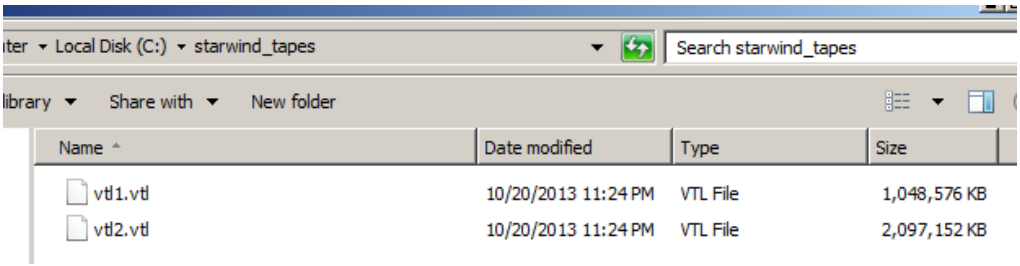


Note: The target name is the complete FQDN with regards to ISCSI standards.

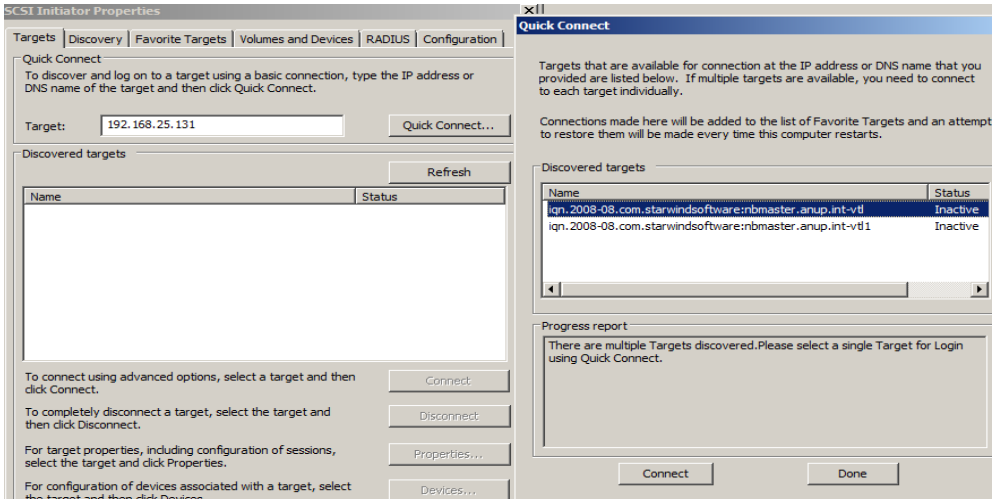
25. Configured Target shoots up on the right pane.



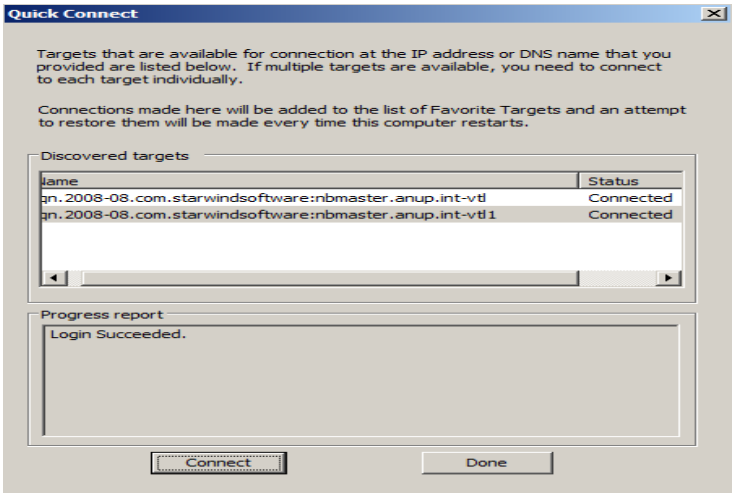
26. Tape Directory on Server.



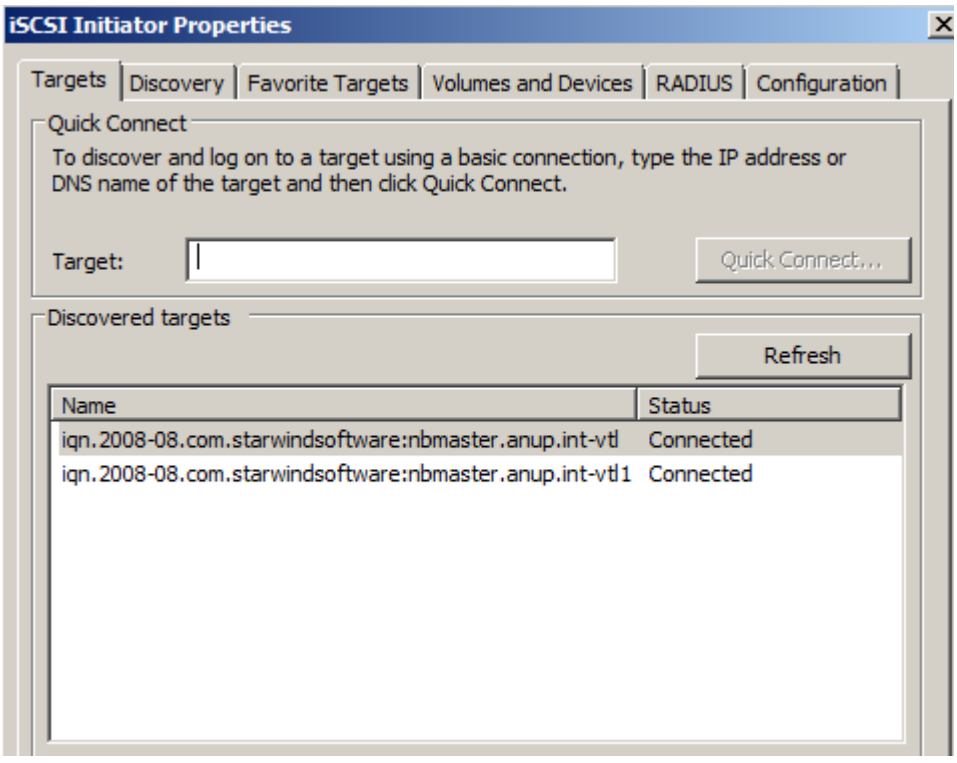
27. Pull up MS-ISCSI initiator and navigate to target tab. Input the target ip(Server ip) and click on **Quick connect.**



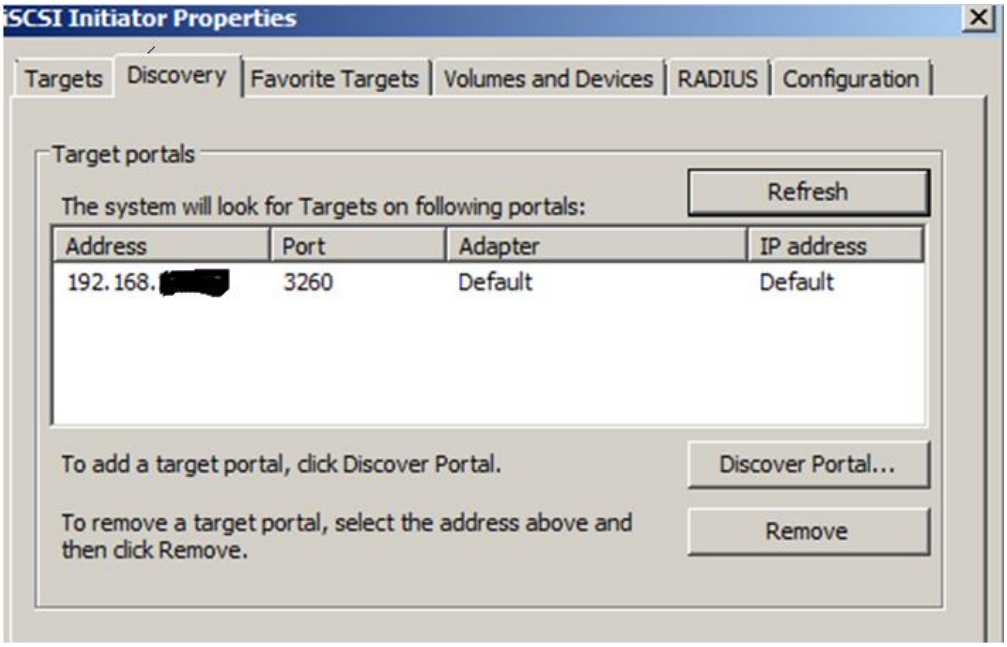
28. Select available targets and click on connect.



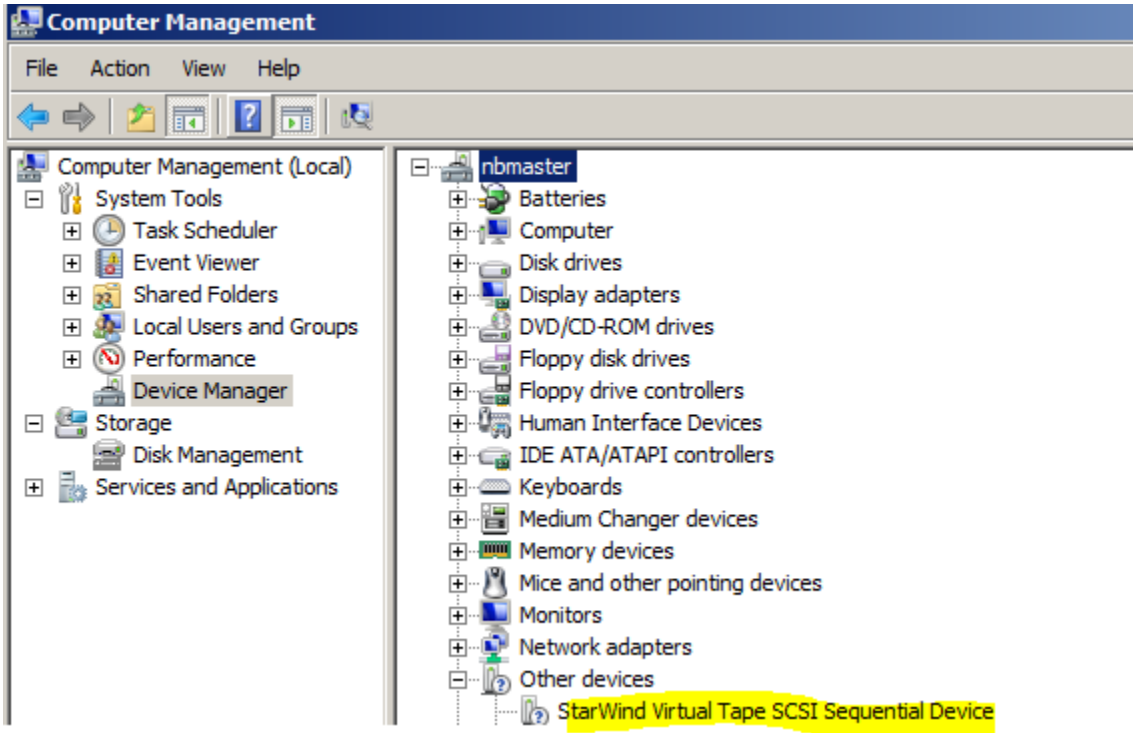
29. Connected Devices appear under Target Tab.



30. The Target IP would appear in the Discovery Tab.

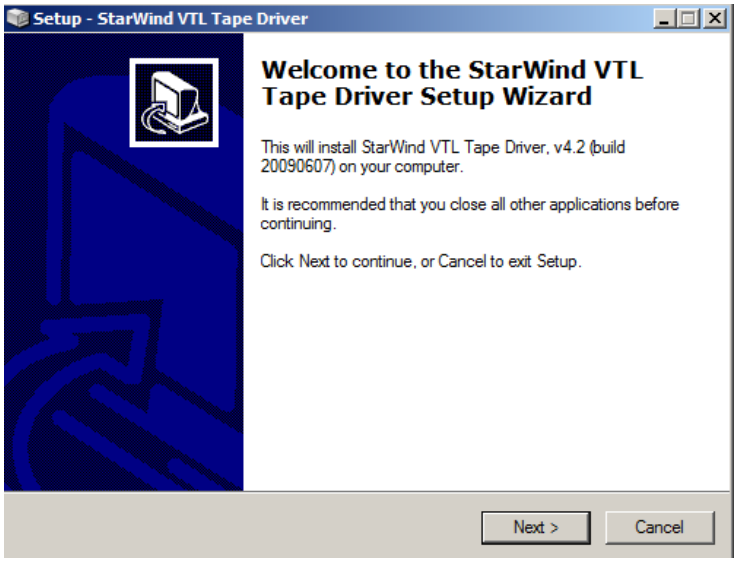


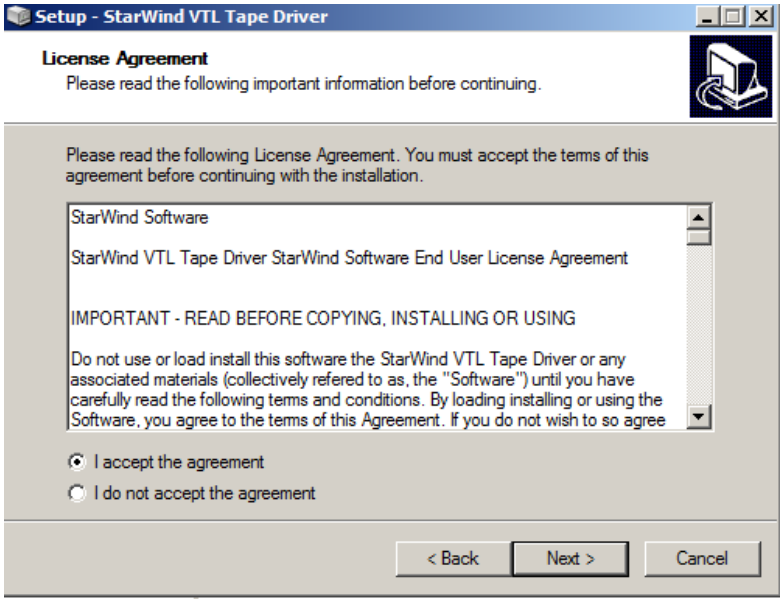
31. Navigate to Computer management and notice the added device.

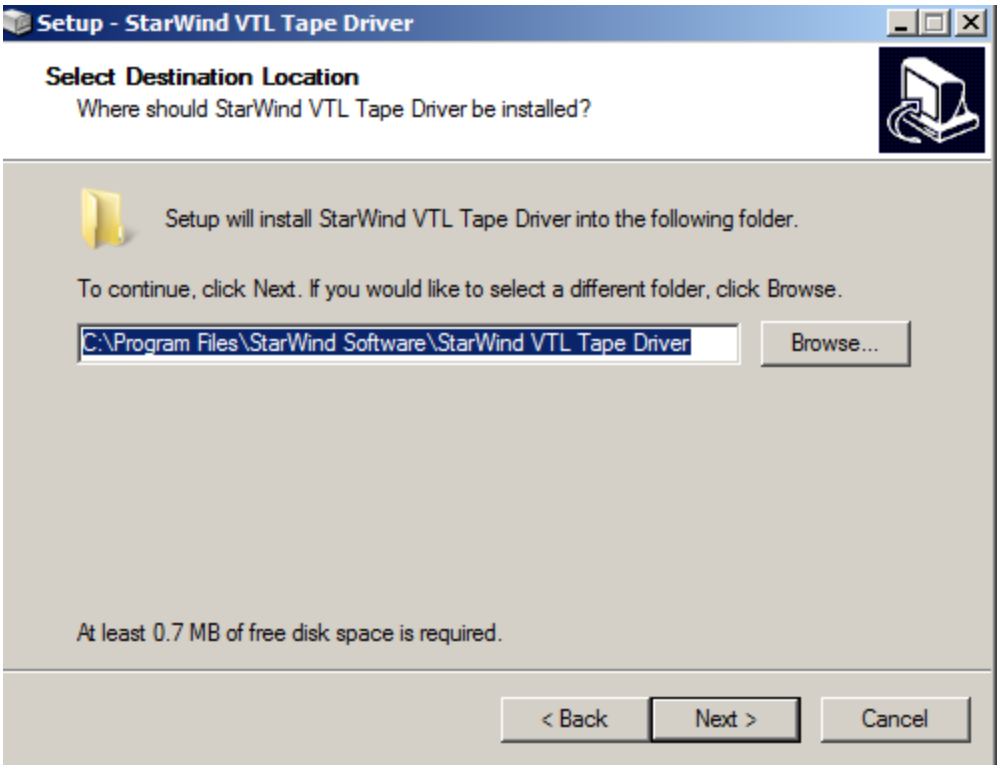


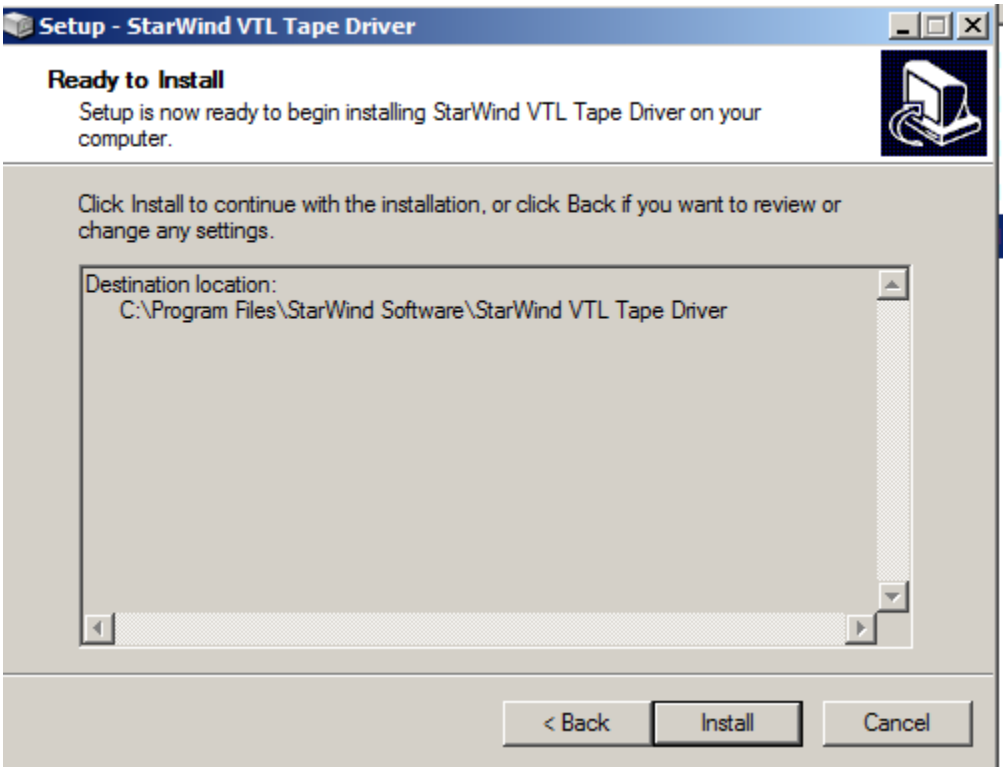
32. To setup the device, the tape driver software needs to be installed.

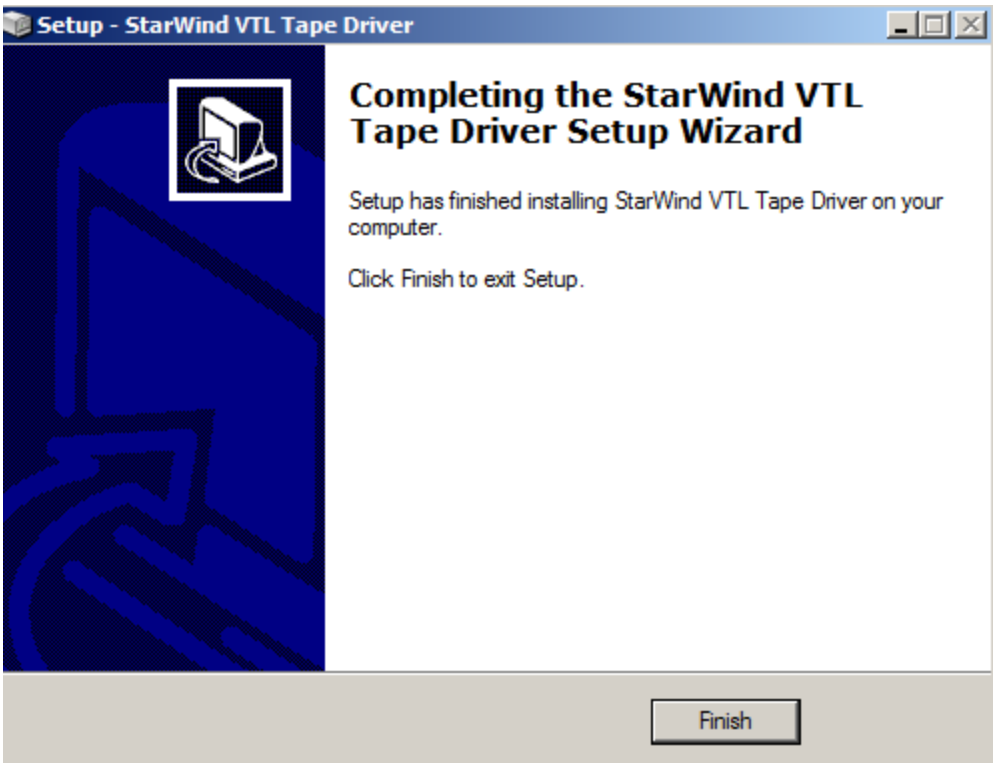
33. Proceed with the installation, taking the default values.



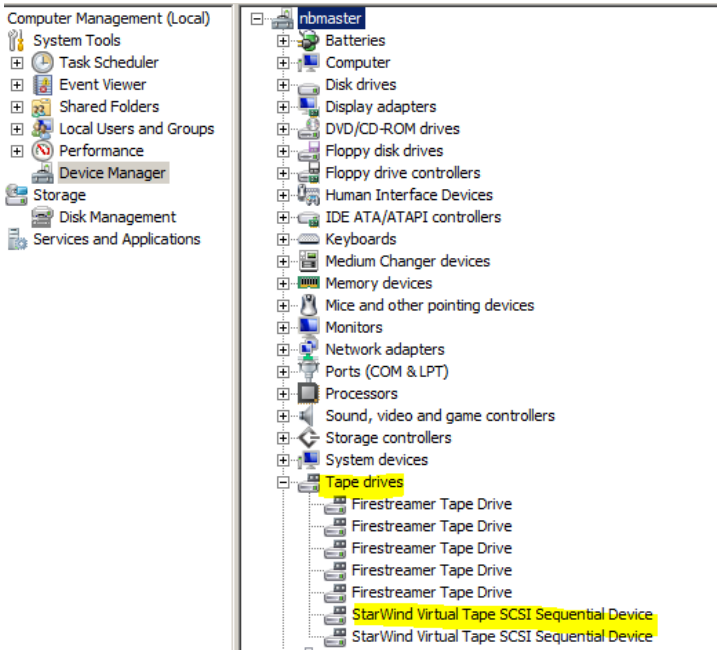



Setup - StarWind VTL Tape Driver
Select Destination Location
Where should StarWind VTL Tape Driver be installed?
Setup will install StarWind VTL Tape Driver into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Program Files\StarWind Software\StarWind VTL Tape Driver
Browse...
At least 0.7 MB of free disk space is required.
< Back
Next >
Cancel

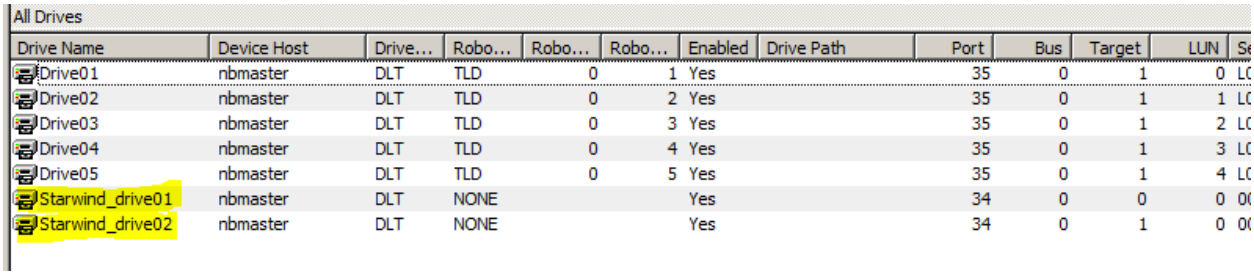

Setup - StarWind VTL Tape Driver
Ready to Install
Setup is now ready to begin installing StarWind VTL Tape Driver on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination location:
C:\Program Files\StarWind Software\StarWind VTL Tape Driver
< Back
Install
Cancel



34. The tape device appears as shown below:

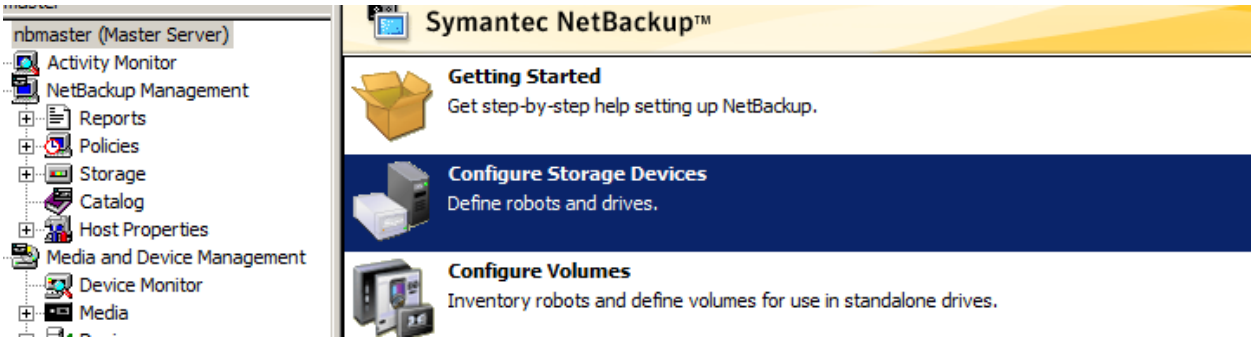


9. Final view with Firestreamer and Starwind Tape Drives.

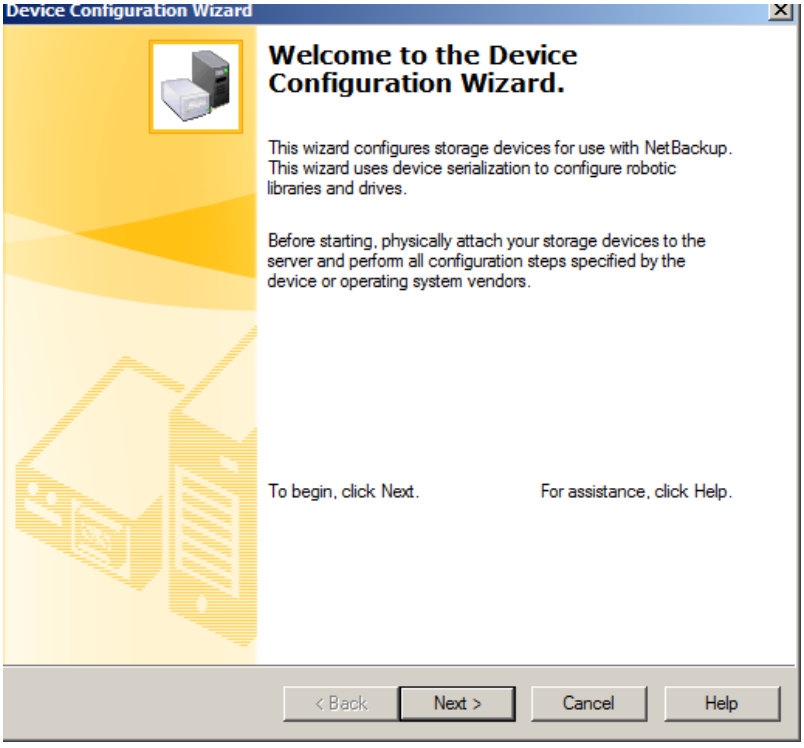


Drive Name	Device Host	Drive...	Robo...	Robo...	Robo...	Enabled	Drive Path	Port	Bus	Target	LUN	Se
Drive01	nbmaster	DLT	TLD	0	1	Yes		35	0	1	0	LC
Drive02	nbmaster	DLT	TLD	0	2	Yes		35	0	1	1	LC
Drive03	nbmaster	DLT	TLD	0	3	Yes		35	0	1	2	LC
Drive04	nbmaster	DLT	TLD	0	4	Yes		35	0	1	3	LC
Drive05	nbmaster	DLT	TLD	0	5	Yes		35	0	1	4	LC
Starwind_drive01	nbmaster	DLT	NONE			Yes		34	0	0	0	0(
Starwind_drive02	nbmaster	DLT	NONE			Yes		34	0	1	0	0(

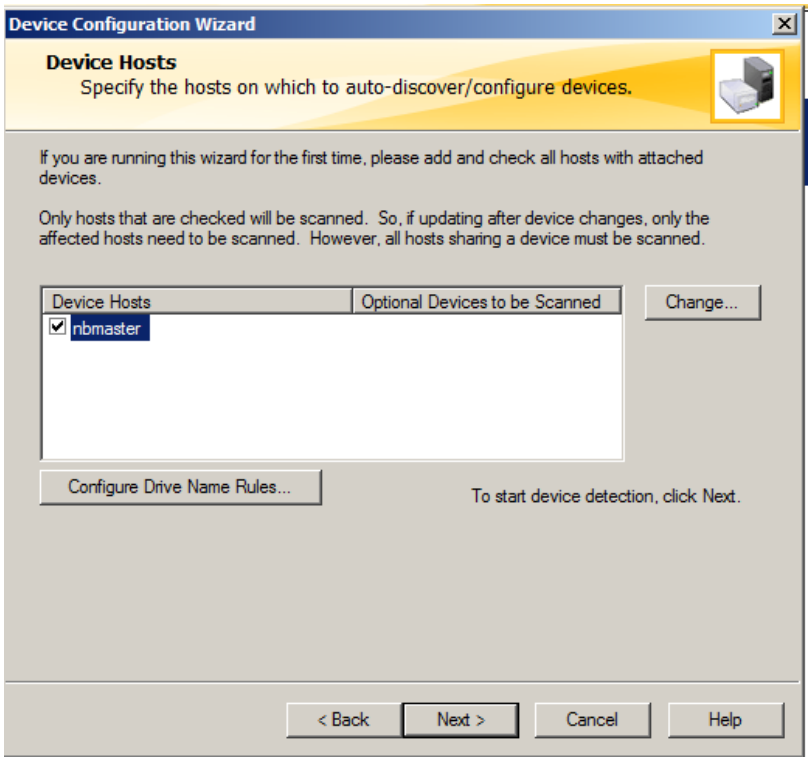
10. Go back to server view and click on Configure Storage Devices.



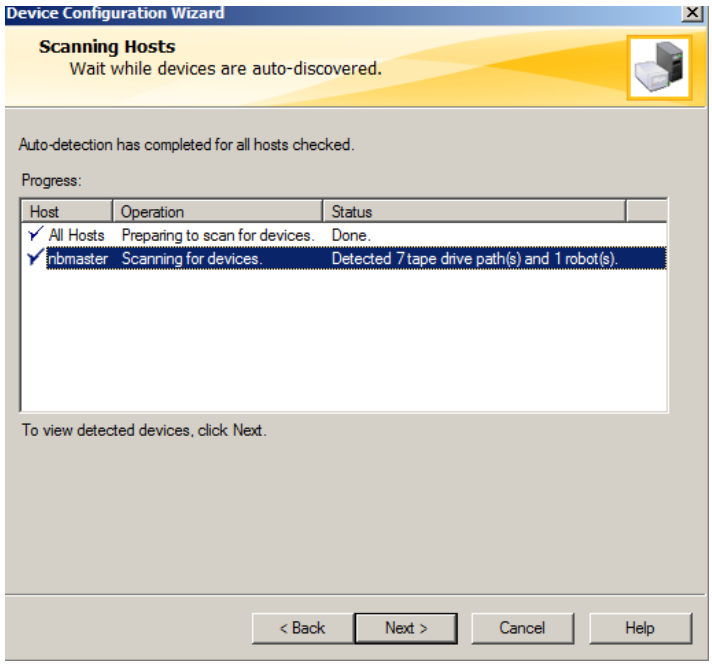
11. Proceed with Device Config Wizard.



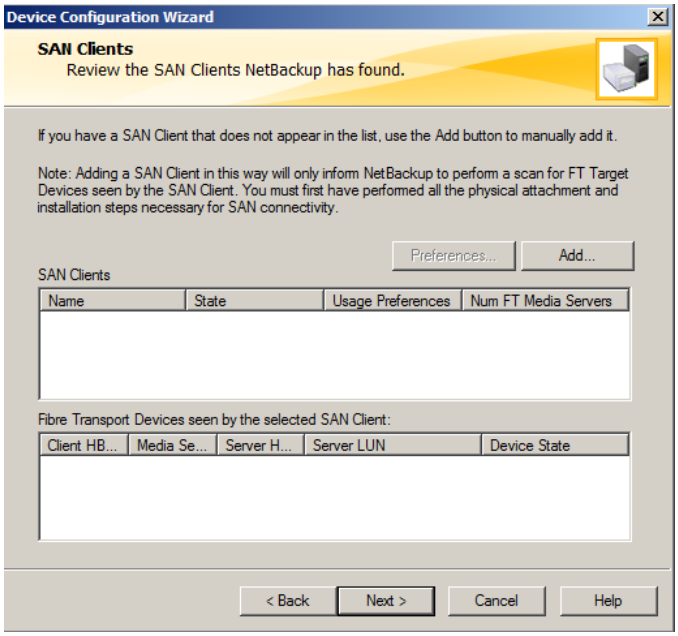
12. Select the device host and click next.



13. Device Scan detects the Library.

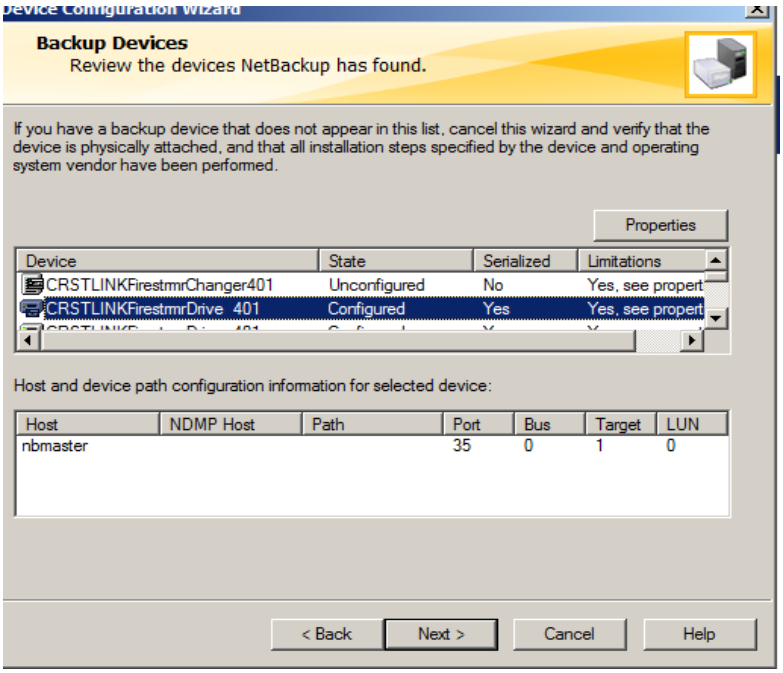


14. As there are no SAN clients configured, click on Next on the San client page.

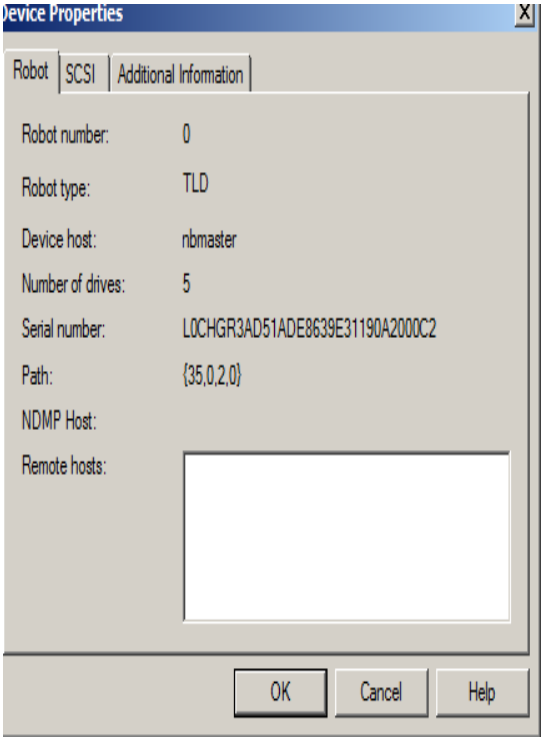


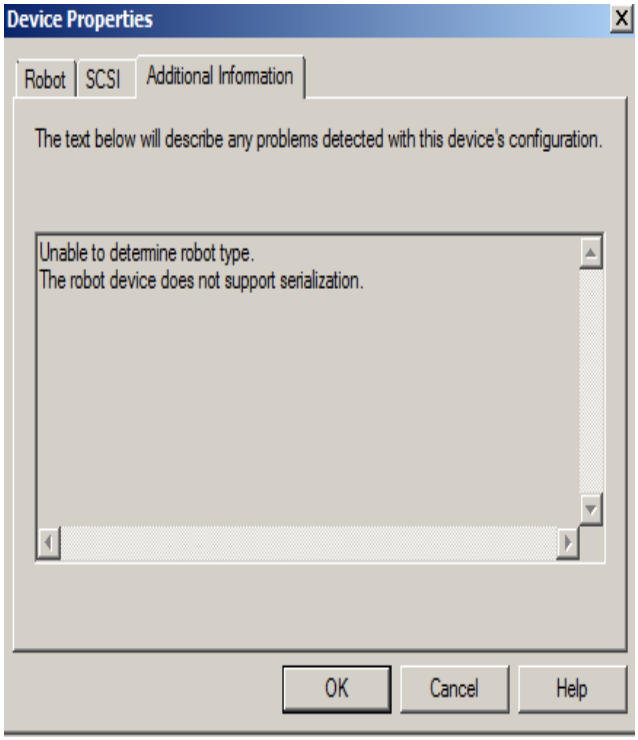
15. **Medium** shows unconfirmed, while **Drive** shows configured. You can ignore that as the OS is unable to determine the serial number, even though it is configured.

    - ❖ No harm done to Backups

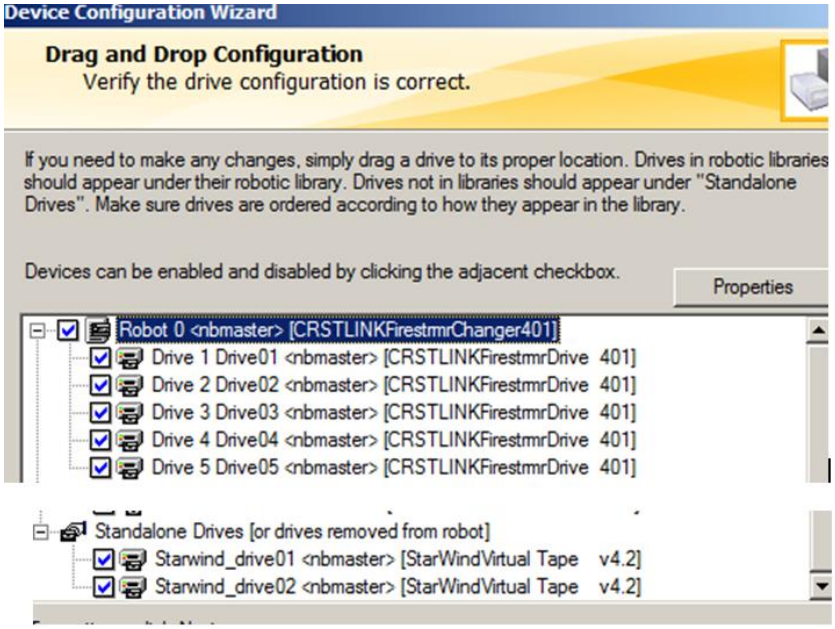


16. Unconfigured Device does have a valid serial number.

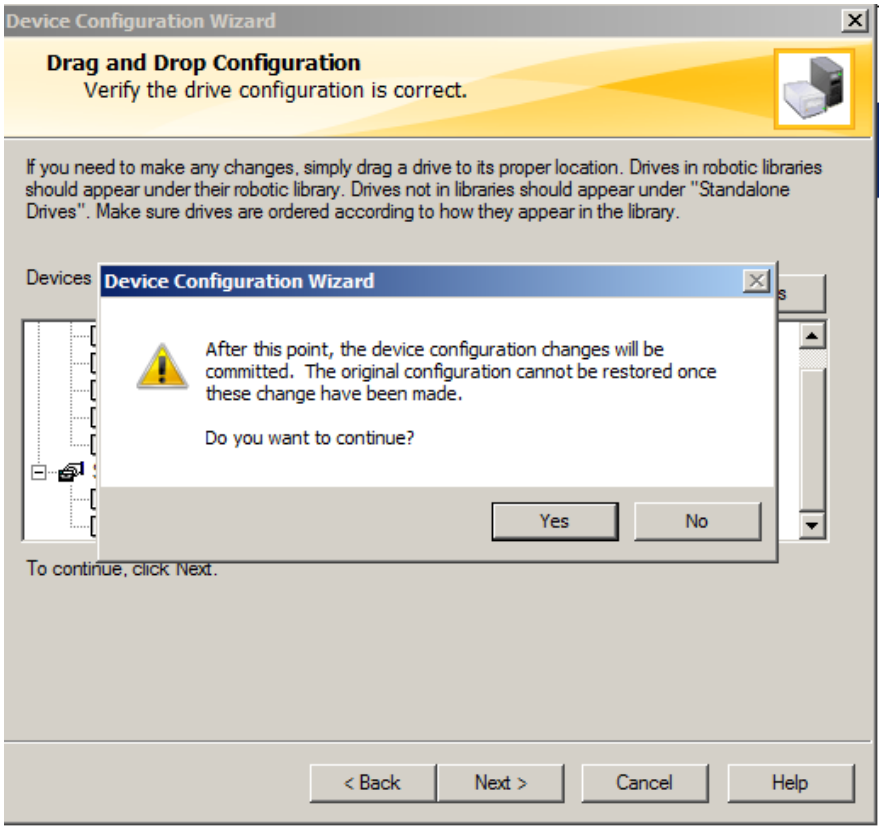


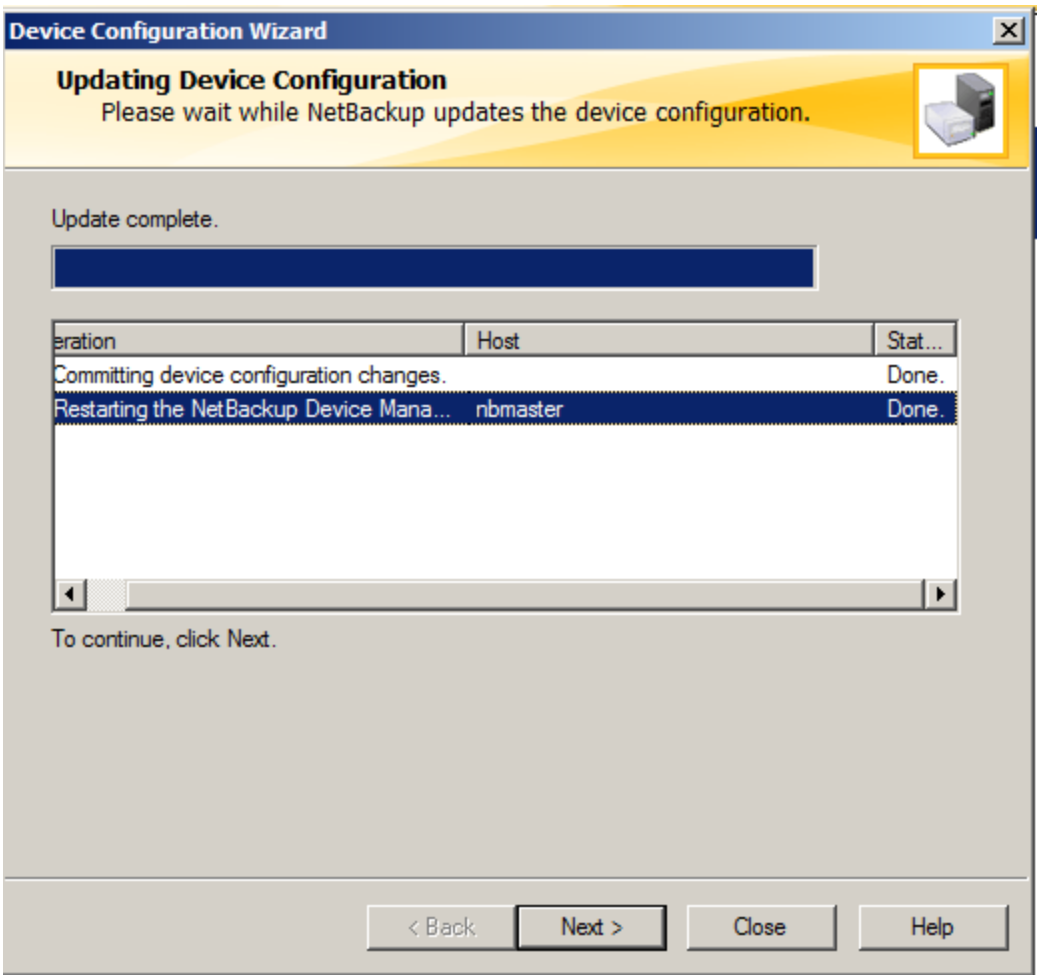


17. Make sure to check Robot so as to include the drives. The stand alone drives are separated by default.

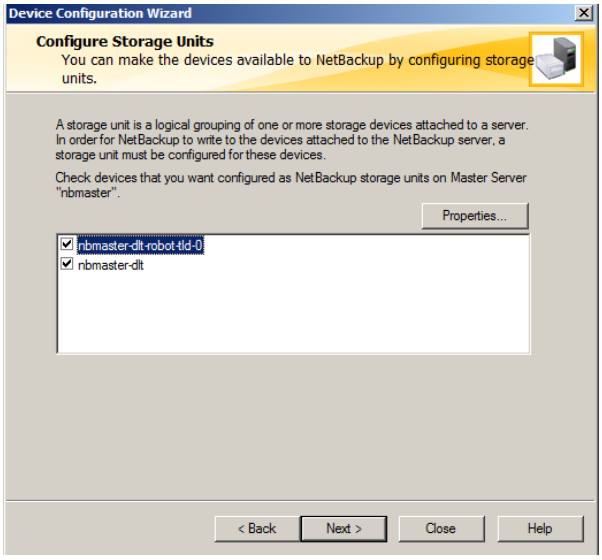


18. Commit the changes.





19. The configured devices must be added to a storage unit and click next.

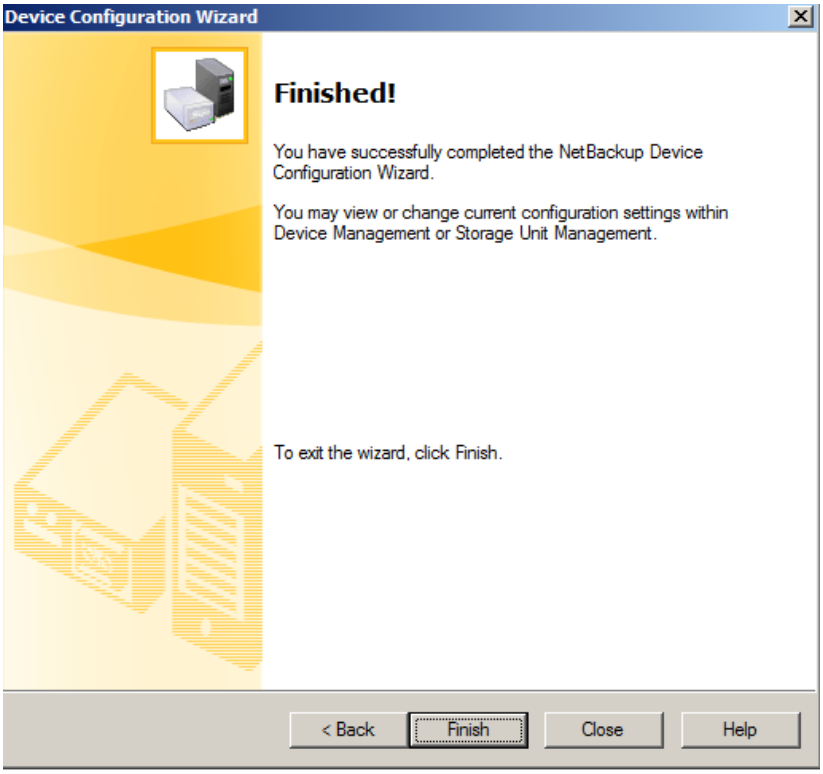


Note:

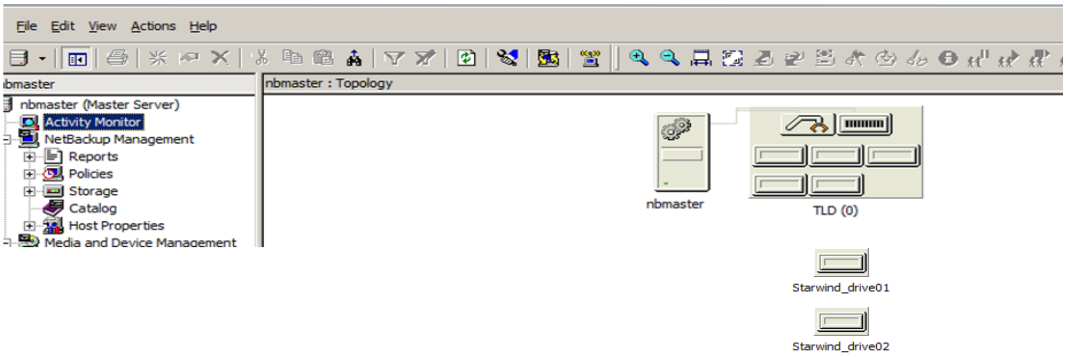
nbmaster-dlt-robot-tld-0--> Firestreamer Tape Library

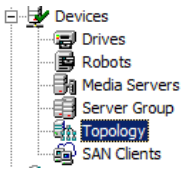
nbmaster-dlt-->Starwind Tape Library

20. Click on finish to complete the config.



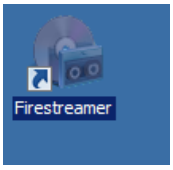
21. Navigate to Activity monitor or Topology(under Devices) to view the design.



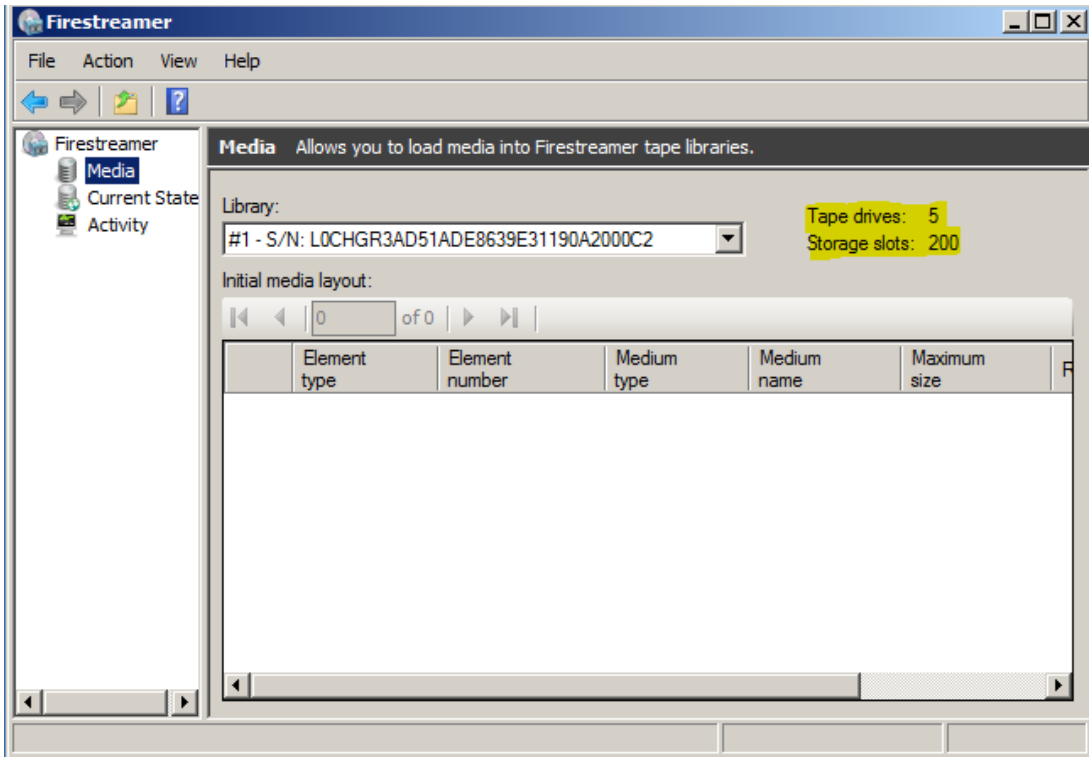


Tape Configuration:

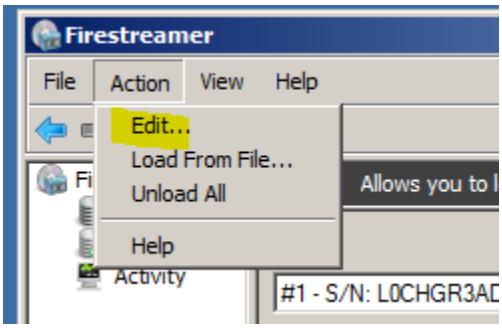
1. Look out for the Fire streamer icon in the desktop.



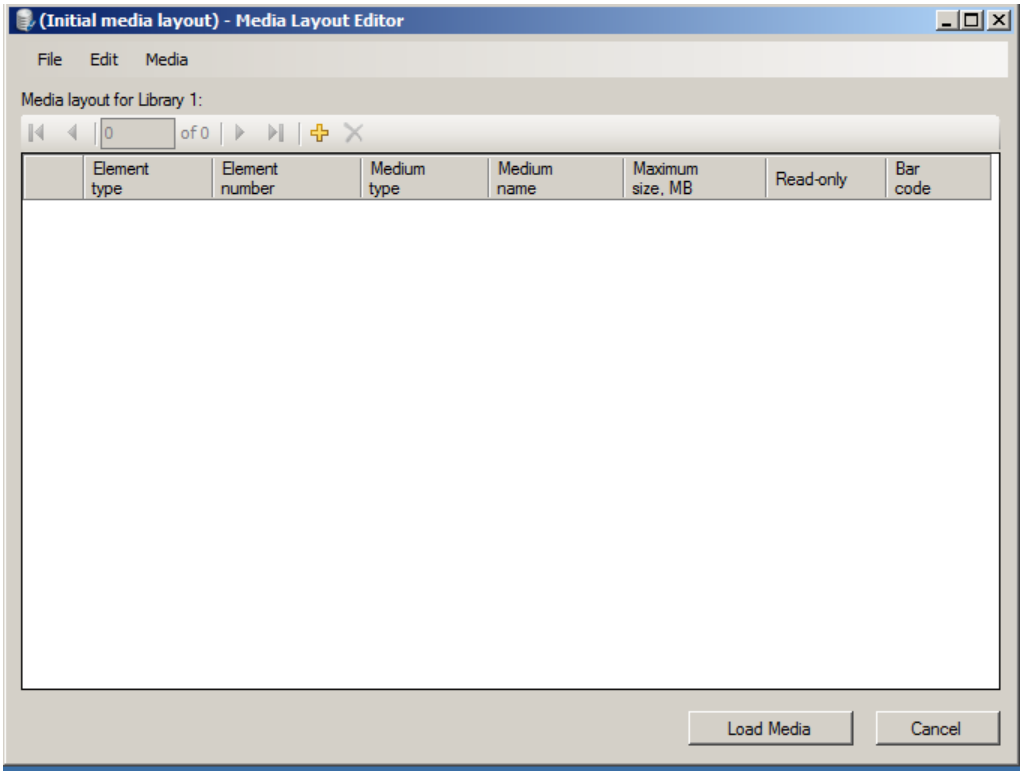
2. When the system launched, it shows up with empty media.
   Note: Firestreamer comes with a default of 5 Tape Drives and 200 Storage Slots.



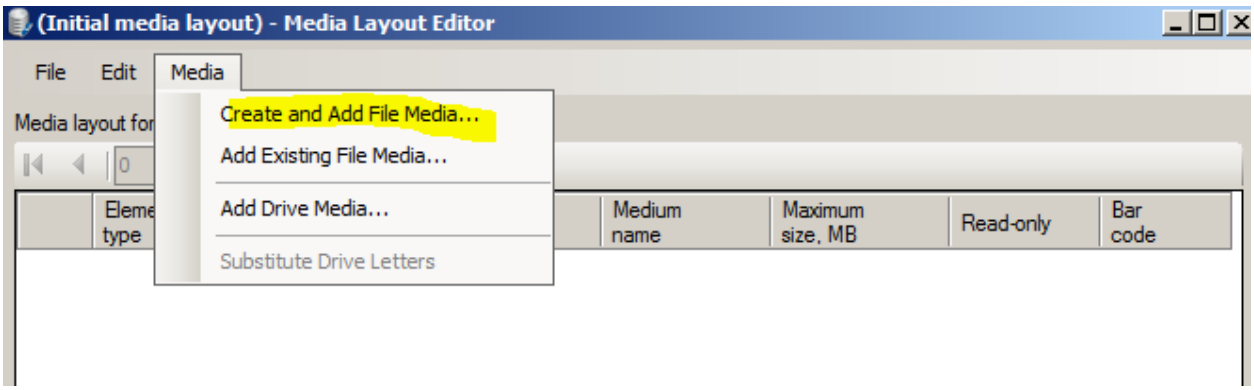
3. Click on Action→Edit.



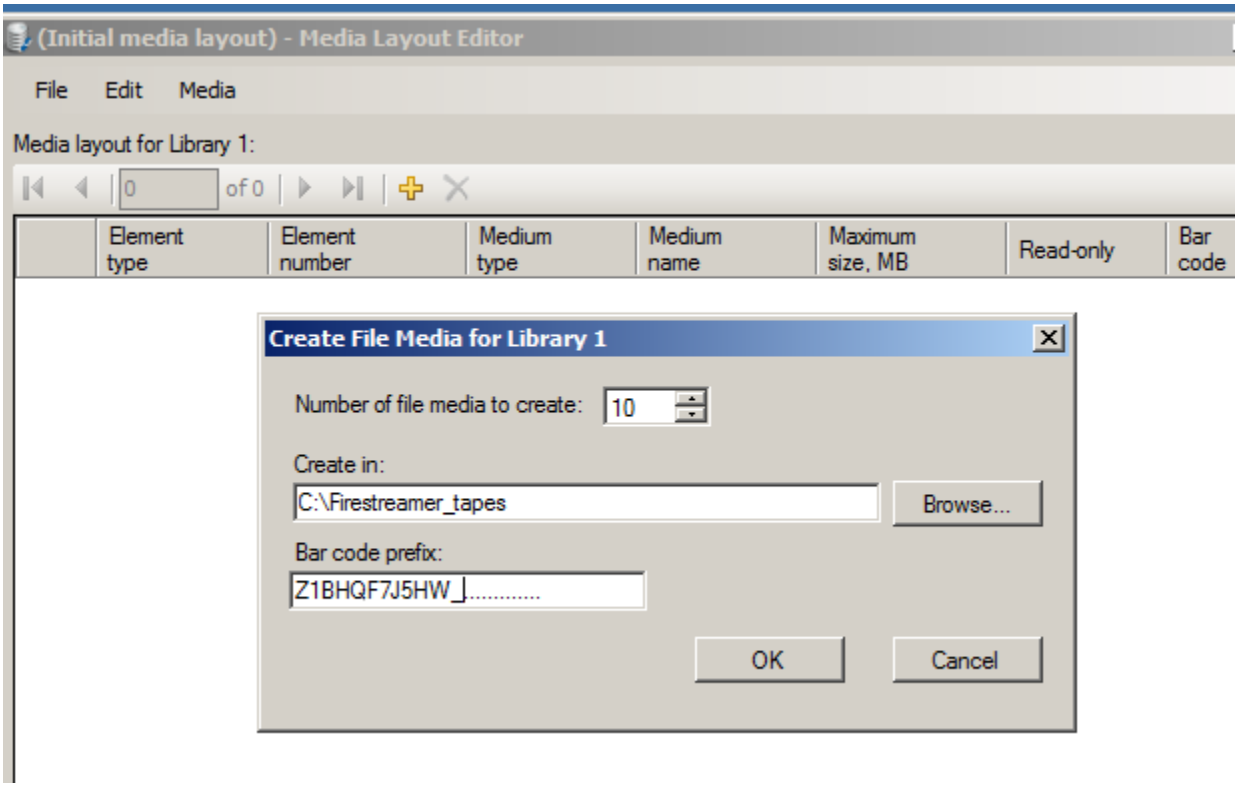
4. The initial media layout appears as shown below:



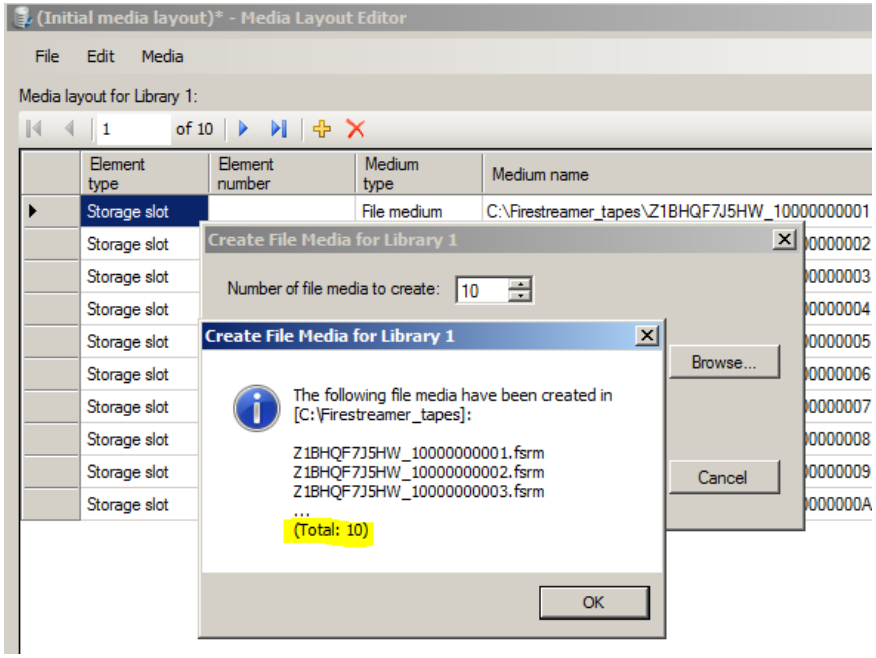
5. Navigate to Media→Create and Add File Media



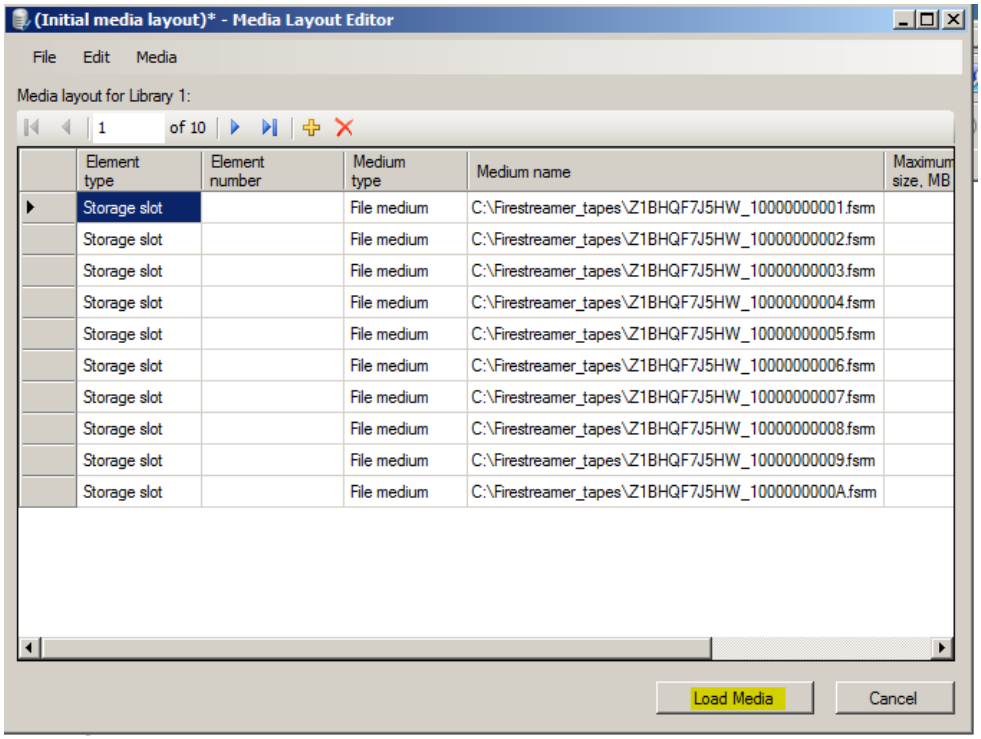
6. Create a number of tapes required and save in the directory as shown below:



7. This creates 10 tapes(media) and with the default barcode as shown below:

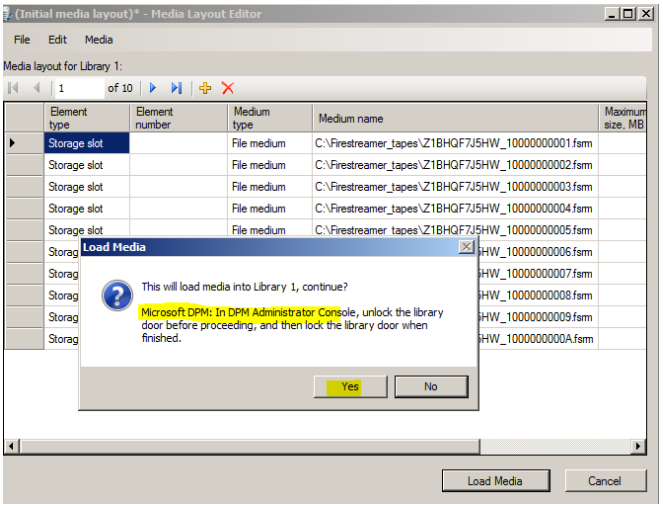


8. This appears in the media layout.

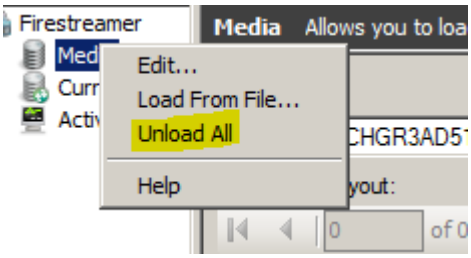


9. When load media is selected, a DPM pop up appears to unlock and lock the library door before running an inventory. This is similar to the MAP (Media access port) door or Library door , taking a Iscalar Library into account.

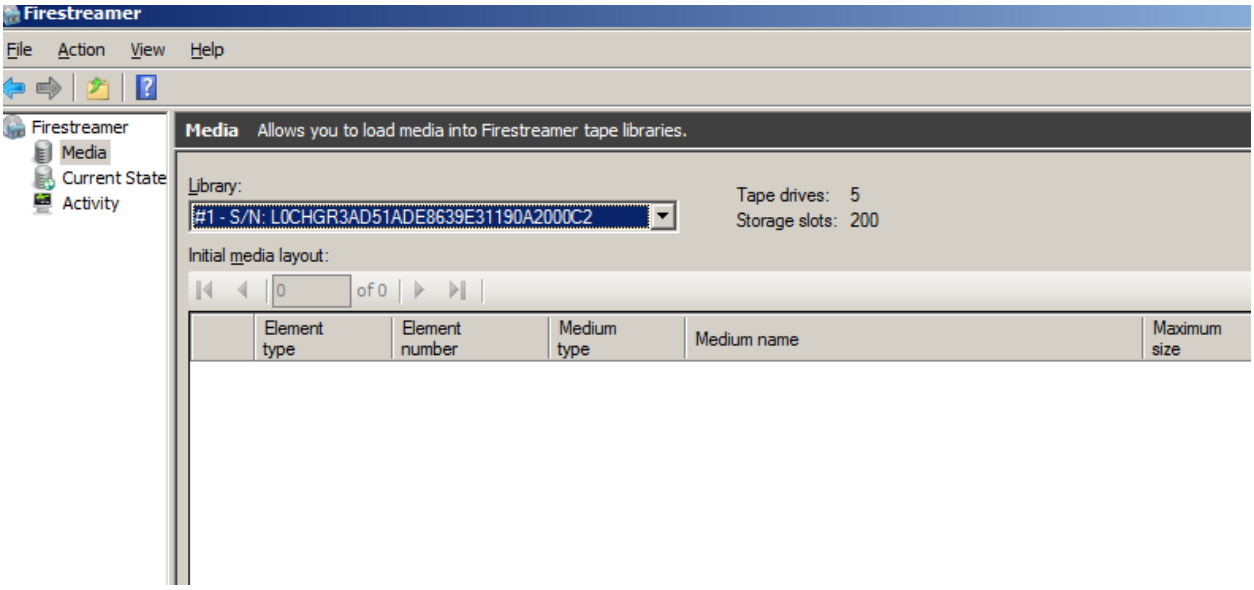
Note: Firestreamer has been designed exclusively for Microsoft System Center Data protection protection Manager, however the test results are successful with Netbackup.



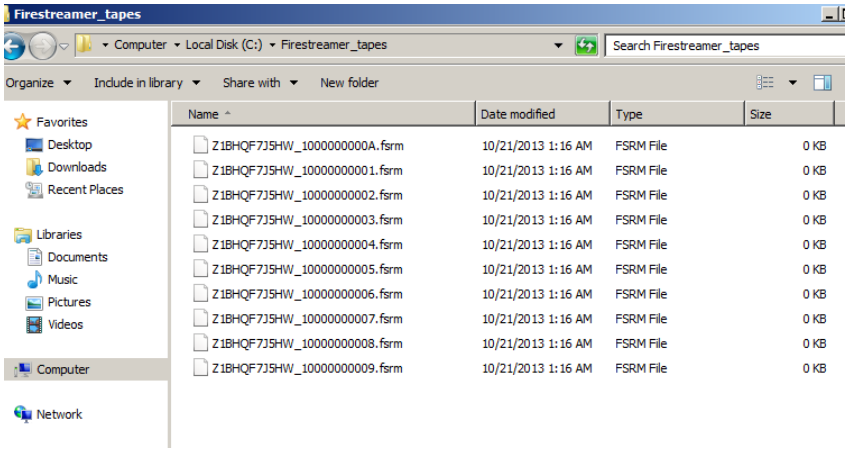
10. The next step is to unload the media as Barcodes needs to be changed. If a Barcode is used, it would be easier to netback up to identify the media assigned and update it accordingly on the Netbackup DB.



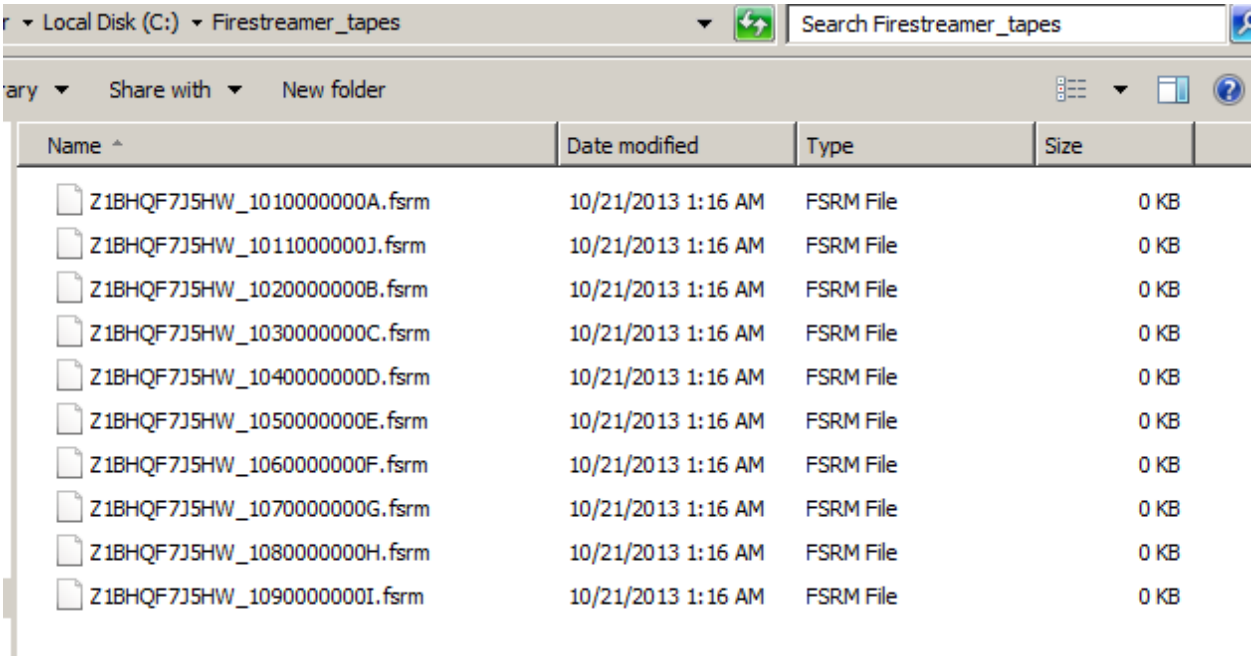
11. The media has been unloaded.



Barcode before:



After Barcode Change:



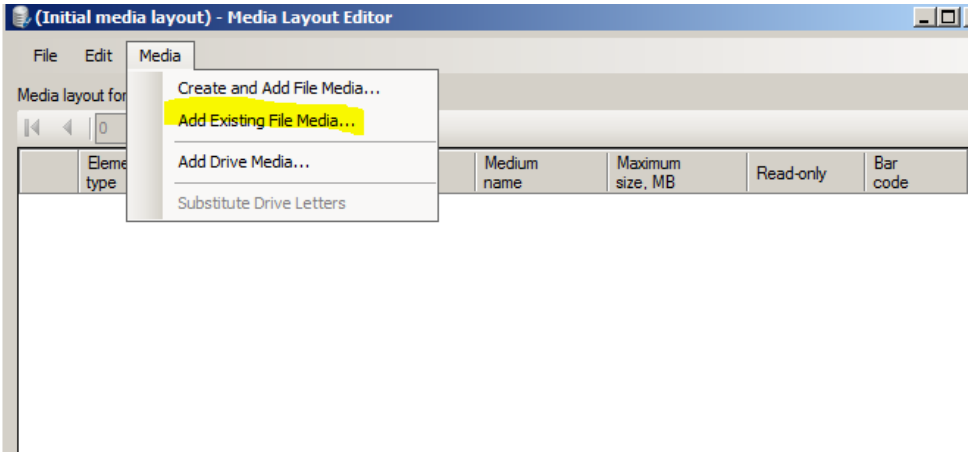
Note:

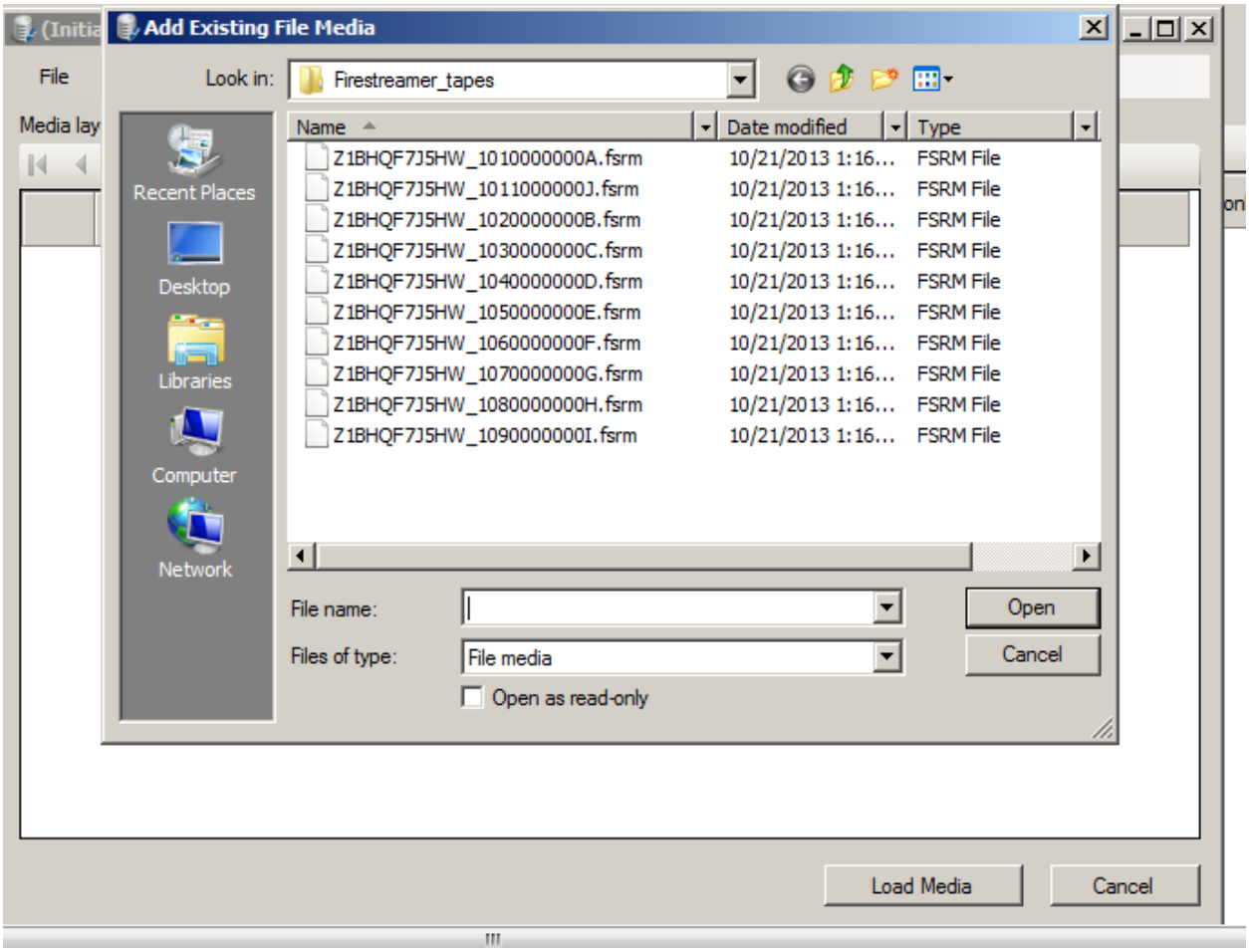
When the new barcode is change and media is injected, the last letter in the media prefix, along with the first 4 digits will be added to the media pool.

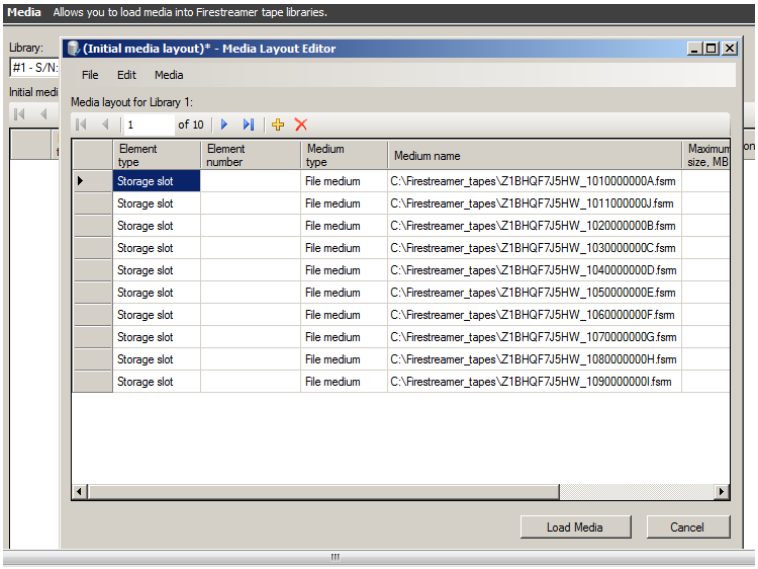
eg:

In this case , it would be W_1010, W_1011…
You can also change the barcode according to your requirement. Based on this you can design your infrastructure.d

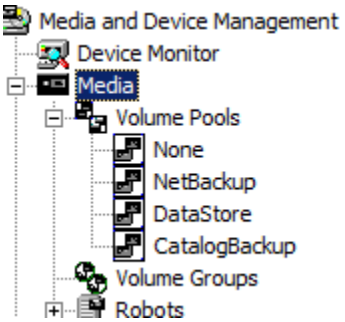
12. Perform Step 5-8 to load the newly changed Barcode.

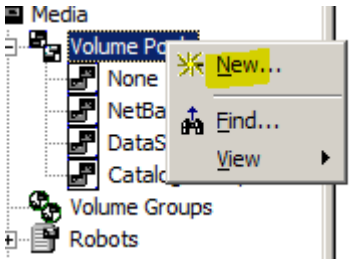


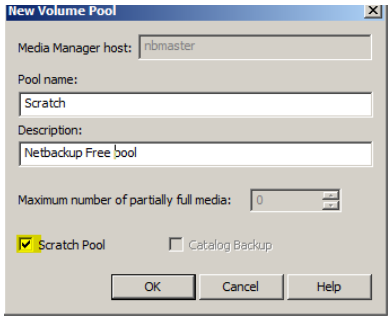

Add Existing File Media
Look in:
Firestreamer_tapes
Recent Places
Desktop
Libraries
Computer
Network
Name
Date modified
Type
Z1BHQF7J5HW_1010000000A.fsrm 10/21/2013 1:16... FSRM File
Z1BHQF7J5HW_1011000000J.fsrm 10/21/2013 1:16... FSRM File
Z1BHQF7J5HW_1020000000B.fsrm 10/21/2013 1:16... FSRM File
Z1BHQF7J5HW_1030000000C.fsrm 10/21/2013 1:16... FSRM File
Z1BHQF7J5HW_1040000000D.fsrm 10/21/2013 1:16... FSRM File
Z1BHQF7J5HW_1050000000E.fsrm 10/21/2013 1:16... FSRM File
Z1BHQF7J5HW_1060000000F.fsrm 10/21/2013 1:16... FSRM File
Z1BHQF7J5HW_1070000000G.fsrm 10/21/2013 1:16... FSRM File
Z1BHQF7J5HW_1080000000H.fsrm 10/21/2013 1:16... FSRM File
Z1BHQF7J5HW_1090000000I.fsrm 10/21/2013 1:16... FSRM File
File name:
Files of type:
File media
Open as read-only
Open
Cancel
File
Media lay
Load Media
Cancel


Media Allows you to load media into Firestreamer tape libraries.
(Initial media layout)* - Media Layout Editor
File Edit Media
Media layout for Library 1:
Element type
Element number
Medium type
Medium name
Maximum size, MB
Storage slot File medium C:\Firestreamer_tapes\Z1BHQF7J5HW_1010000000A.fsrm
Storage slot File medium C:\Firestreamer_tapes\Z1BHQF7J5HW_1011000000J.fsrm
Storage slot File medium C:\Firestreamer_tapes\Z1BHQF7J5HW_1020000000B.fsrm
Storage slot File medium C:\Firestreamer_tapes\Z1BHQF7J5HW_1030000000C.fsrm
Storage slot File medium C:\Firestreamer_tapes\Z1BHQF7J5HW_1040000000D.fsrm
Storage slot File medium C:\Firestreamer_tapes\Z1BHQF7J5HW_1050000000E.fsrm
Storage slot File medium C:\Firestreamer_tapes\Z1BHQF7J5HW_1060000000F.fsrm
Storage slot File medium C:\Firestreamer_tapes\Z1BHQF7J5HW_1070000000G.fsrm
Storage slot File medium C:\Firestreamer_tapes\Z1BHQF7J5HW_1080000000H.fsrm
Storage slot File medium C:\Firestreamer_tapes\Z1BHQF7J5HW_1090000000I.fsrm
Load Media
Cancel

13. Go back to netbackup and create a scratch pool to load the free media. In this case, I have injected all the 10 media and have 5 of them moved to scratch pool.



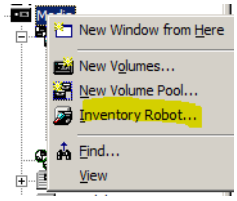


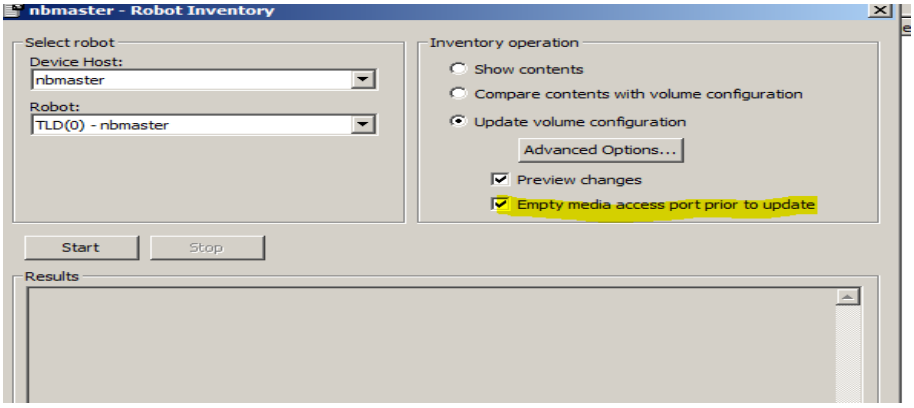


14. Note the volume pools are identified by numbers: 0:None; 1: Netbackup etc..

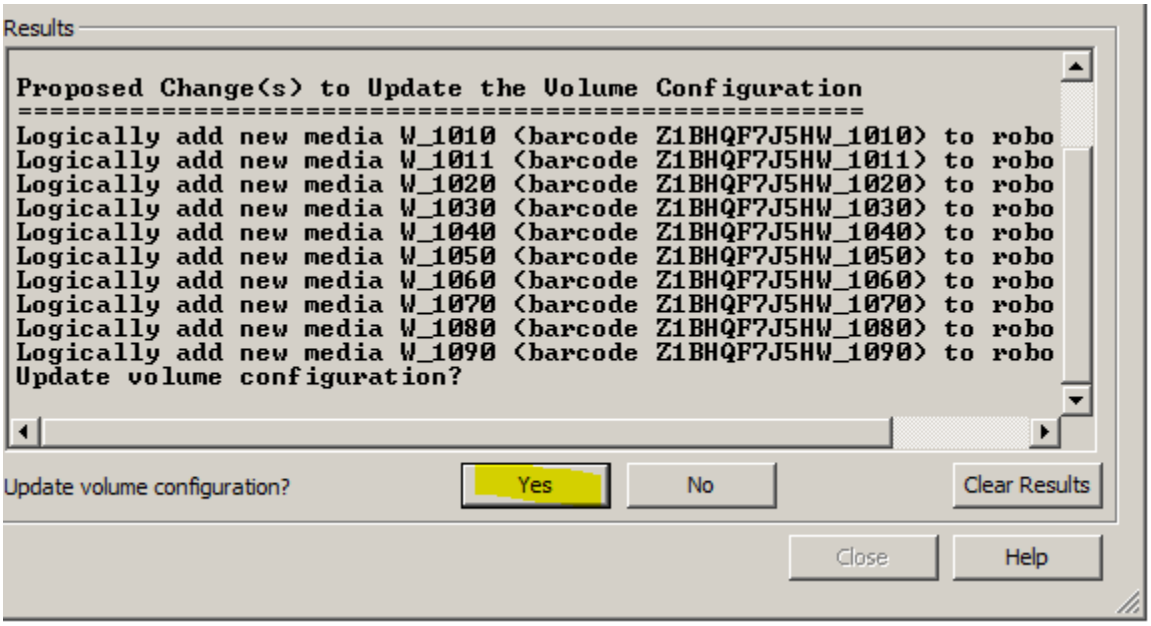
Volume Pool	Number	Max Partially Filled Media	Description	Scratch	Catalog Backup
CatalogBackup	3	0	NetBackup Catal...	No	Yes
DataStore	2	0	the DataStore pool	No	No
NetBackup	1	0	the NetBackup pool	No	No
None	0	0	the None pool	No	No
Scratch	4	0	Netbackup Free ...	Yes	No

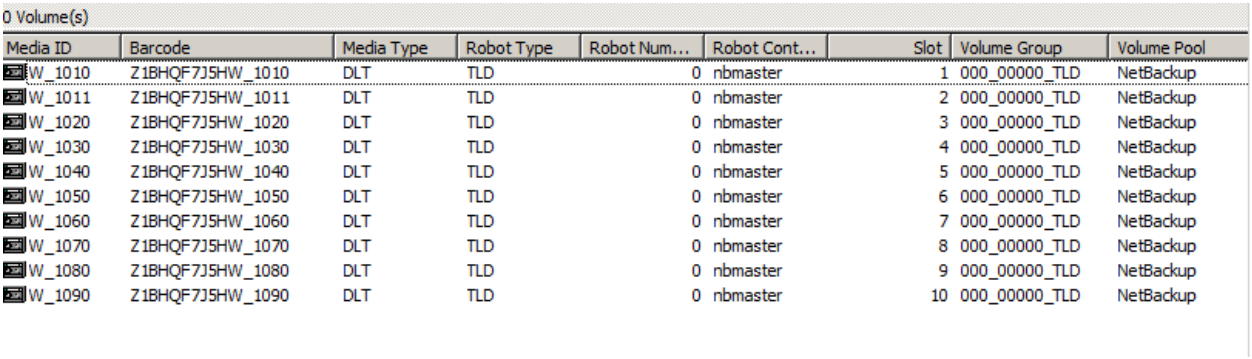
15. Perform an inventory.





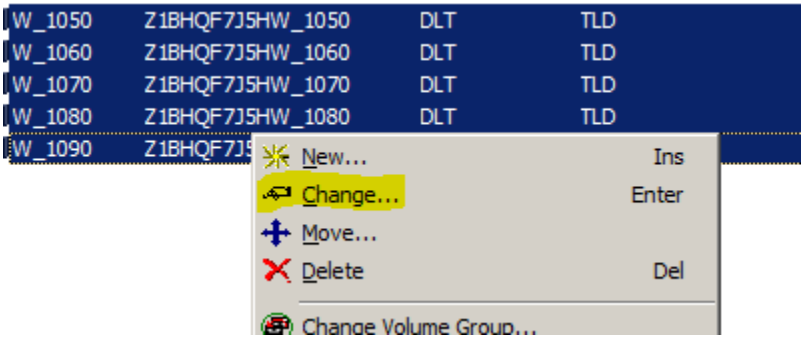
16. The updated media configuration is as shown:

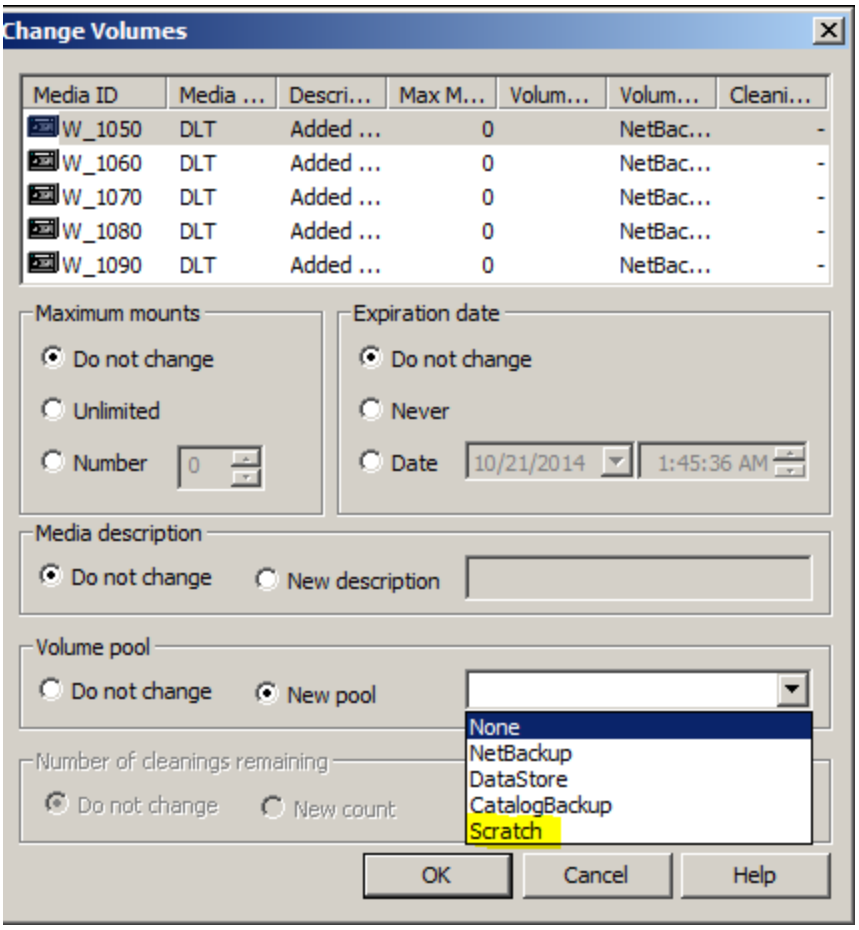




Media ID	Barcode	Media Type	Robot Type	Robot Num...	Robot Cont...	Slot	Volume Group	Volume Pool
W_1010	Z1BHQF7J5HW_1010	DLT	TLD	0	nbmaster	1	000_00000_TLD	NetBackup
W_1011	Z1BHQF7J5HW_1011	DLT	TLD	0	nbmaster	2	000_00000_TLD	NetBackup
W_1020	Z1BHQF7J5HW_1020	DLT	TLD	0	nbmaster	3	000_00000_TLD	NetBackup
W_1030	Z1BHQF7J5HW_1030	DLT	TLD	0	nbmaster	4	000_00000_TLD	NetBackup
W_1040	Z1BHQF7J5HW_1040	DLT	TLD	0	nbmaster	5	000_00000_TLD	NetBackup
W_1050	Z1BHQF7J5HW_1050	DLT	TLD	0	nbmaster	6	000_00000_TLD	NetBackup
W_1060	Z1BHQF7J5HW_1060	DLT	TLD	0	nbmaster	7	000_00000_TLD	NetBackup
W_1070	Z1BHQF7J5HW_1070	DLT	TLD	0	nbmaster	8	000_00000_TLD	NetBackup
W_1080	Z1BHQF7J5HW_1080	DLT	TLD	0	nbmaster	9	000_00000_TLD	NetBackup
W_1090	Z1BHQF7J5HW_1090	DLT	TLD	0	nbmaster	10	000_00000_TLD	NetBackup

17. Move 5 Medias to scratch.



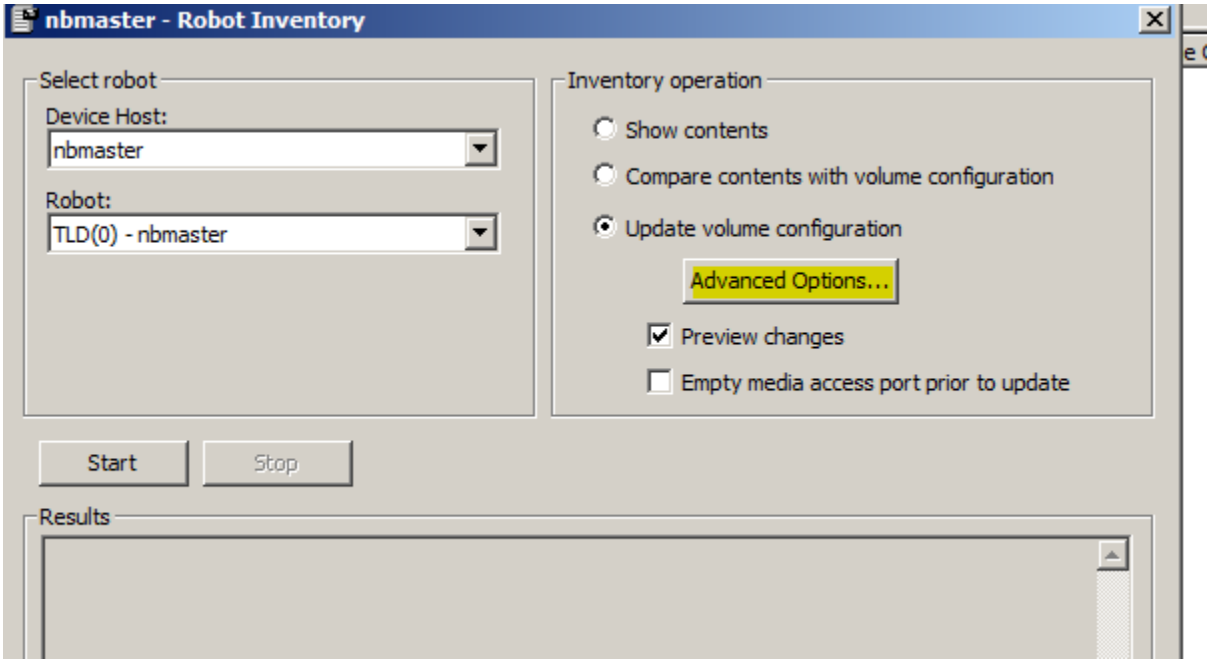


0 Volume(s)

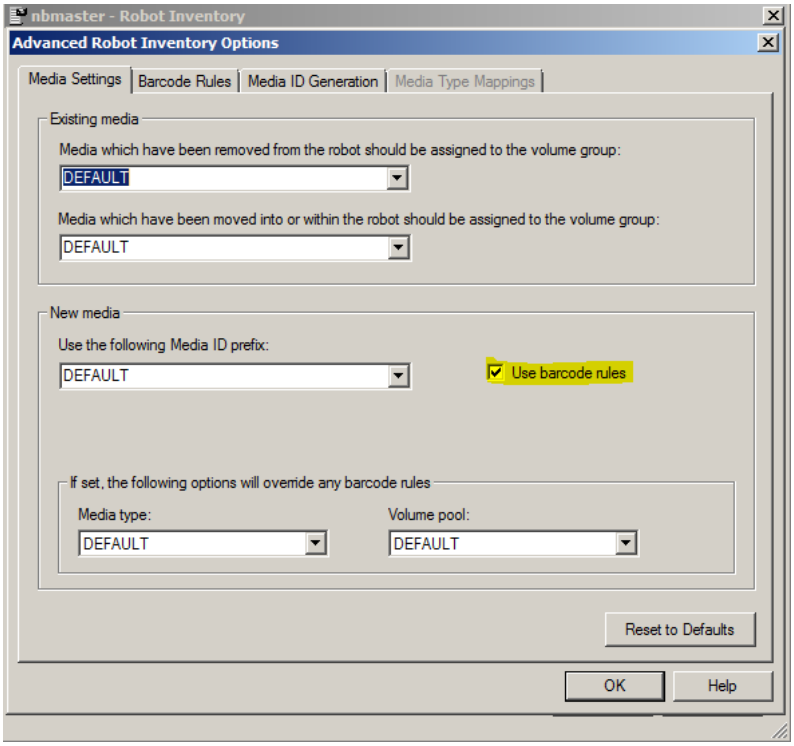
Media ID	Barcode	Media Type	Robot Type	Robot Num...	Robot Cont...	Slot	Volume Group	Volume Pool
W_1010	Z1BHQF7J5HW_1010	DLT	TLD	0	nbmaster	1	000_00000_TLD	NetBackup
W_1011	Z1BHQF7J5HW_1011	DLT	TLD	0	nbmaster	2	000_00000_TLD	NetBackup
W_1020	Z1BHQF7J5HW_1020	DLT	TLD	0	nbmaster	3	000_00000_TLD	NetBackup
W_1030	Z1BHQF7J5HW_1030	DLT	TLD	0	nbmaster	4	000_00000_TLD	NetBackup
W_1040	Z1BHQF7J5HW_1040	DLT	TLD	0	nbmaster	5	000_00000_TLD	NetBackup
W_1050	Z1BHQF7J5HW_1050	DLT	TLD	0	nbmaster	6	000_00000_TLD	Scratch
W_1060	Z1BHQF7J5HW_1060	DLT	TLD	0	nbmaster	7	000_00000_TLD	Scratch
W_1070	Z1BHQF7J5HW_1070	DLT	TLD	0	nbmaster	8	000_00000_TLD	Scratch
W_1080	Z1BHQF7J5HW_1080	DLT	TLD	0	nbmaster	9	000_00000_TLD	Scratch
W_1090	Z1BHQF7J5HW_1090	DLT	TLD	0	nbmaster	10	000_00000_TLD	Scratch

BARCODE RULES:

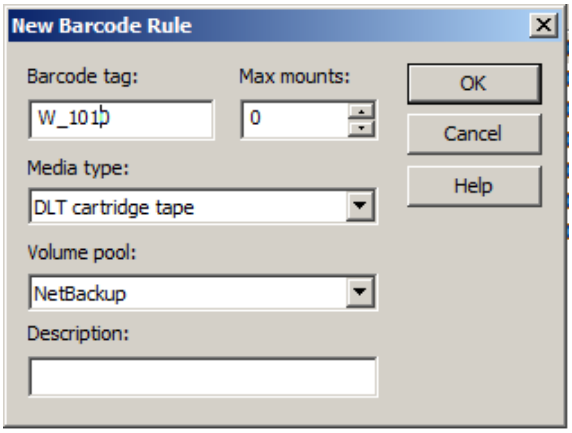
18. Under Robot inventory, go to advanced options.

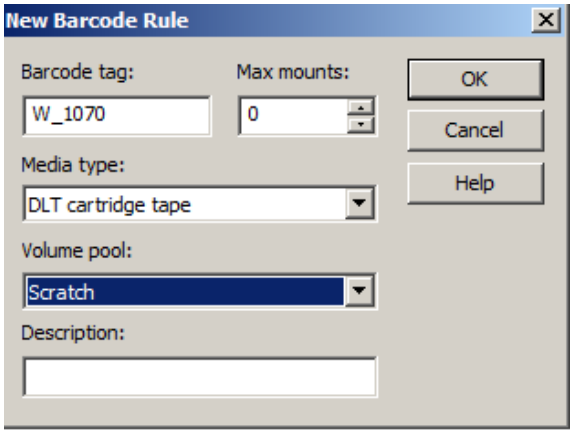


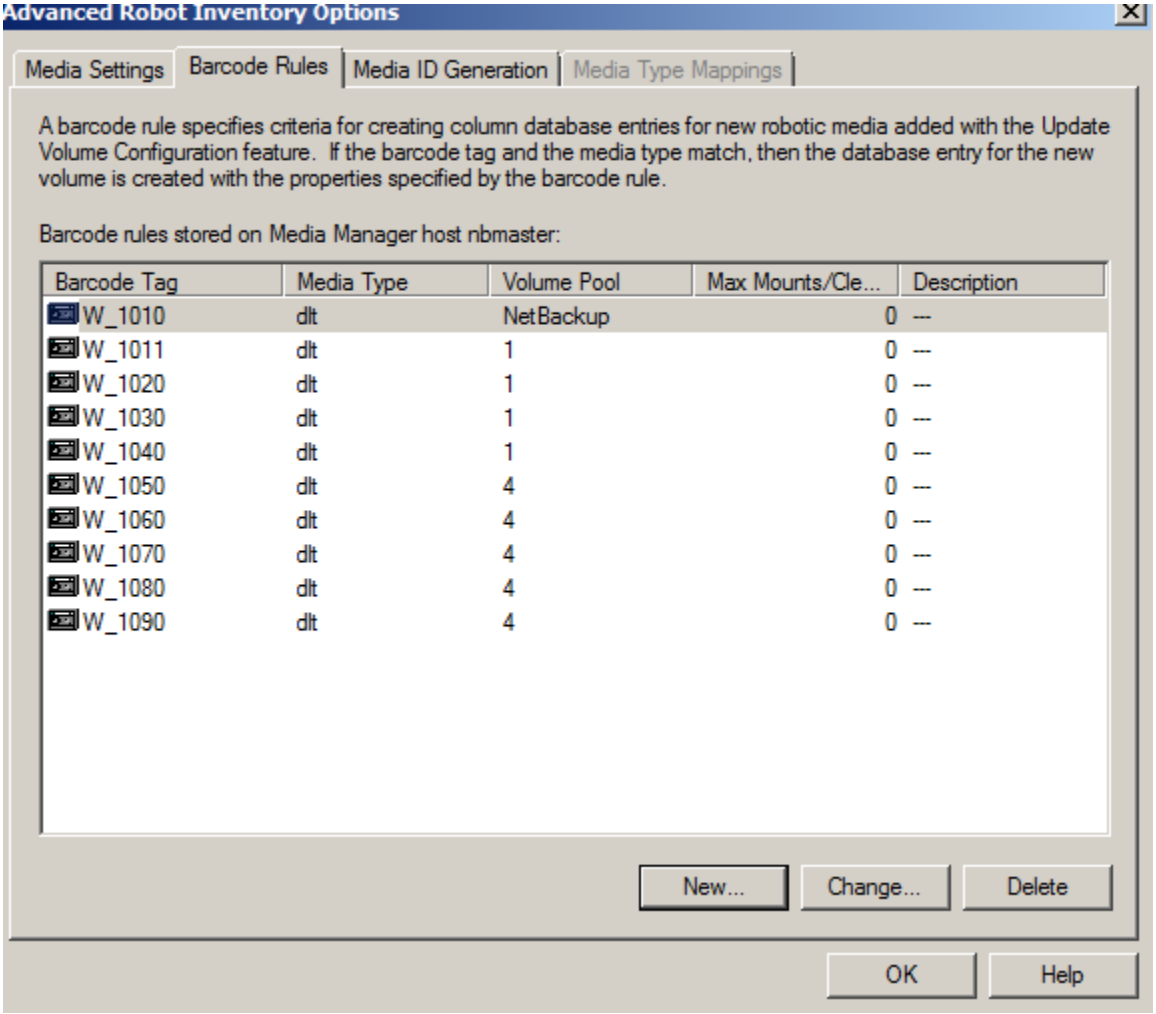
19. Make sure that Barcode rules are selected.



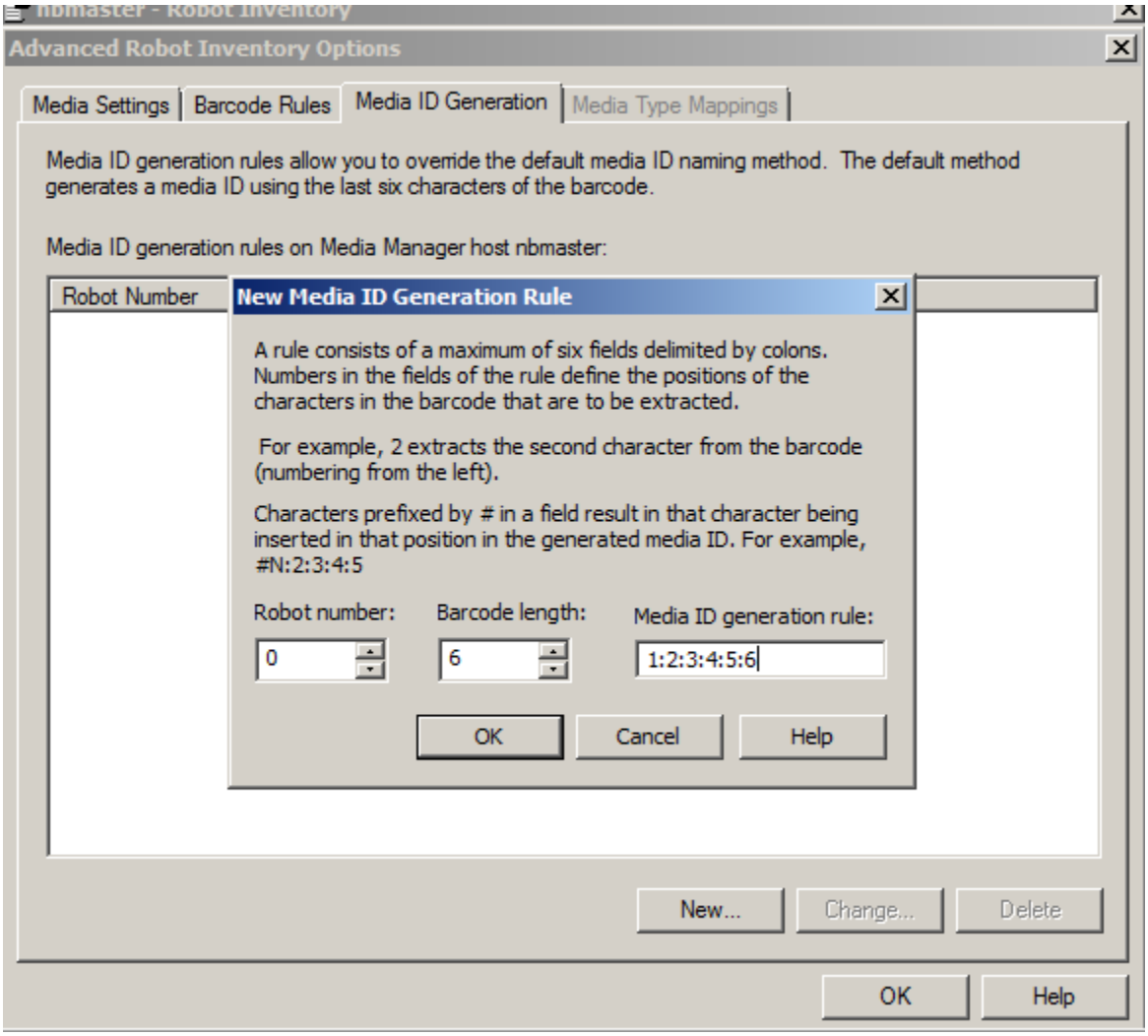
20. Perform the steps as shown below:







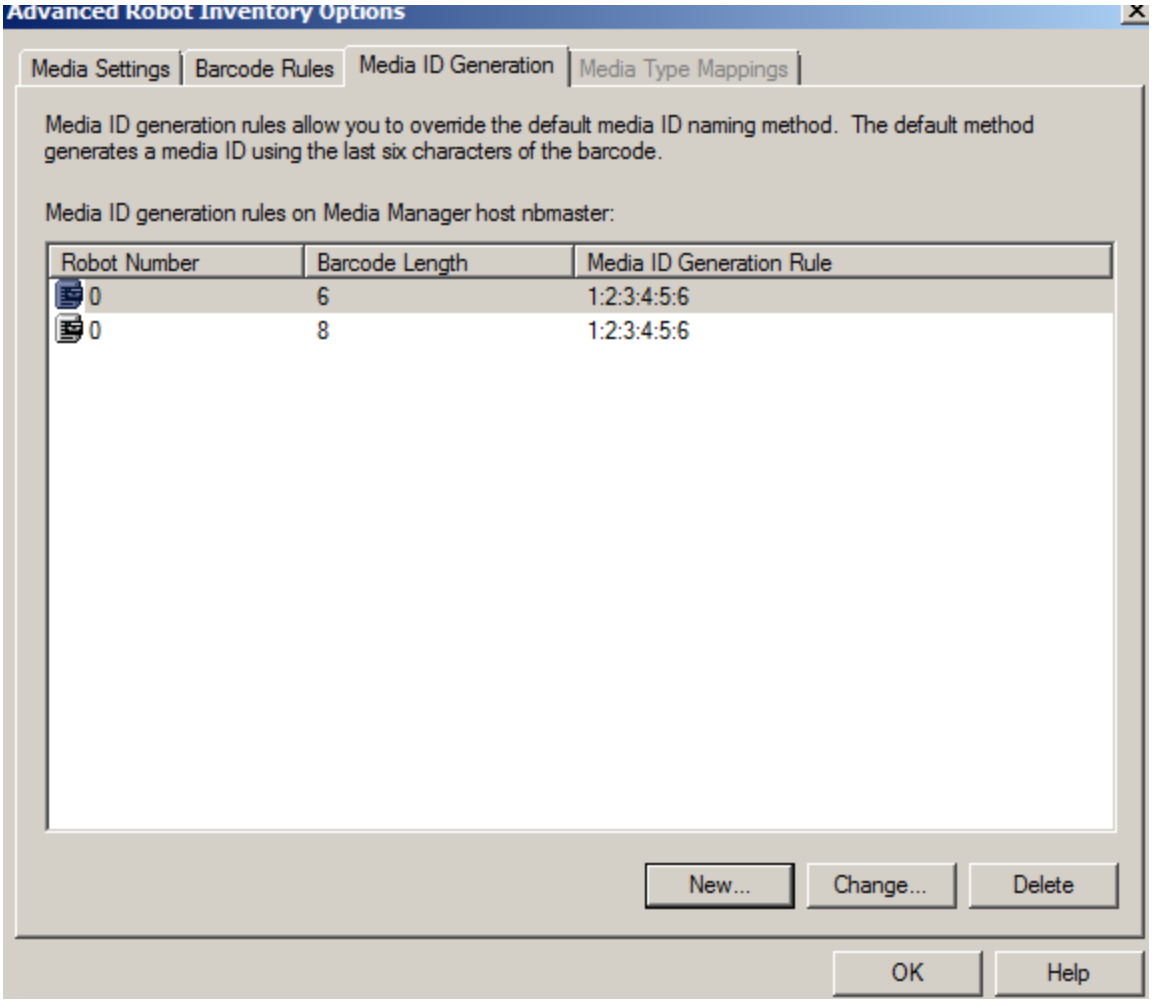
21. Under Media ID generation, choose the barcode length based on your design and provide the media generation rule corresponding to the Robot.



Media ID Generation Rule:

If netbackup wishes to read the first 6 digits of the barcode, one can set it up as 1:2:3:4:5:6.

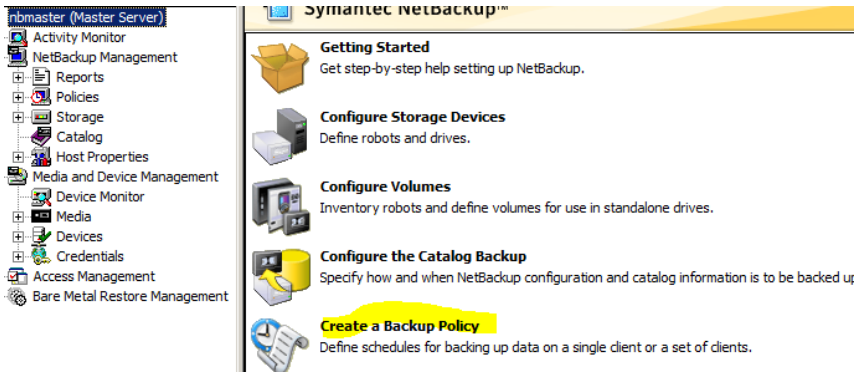
Say if the barcode length is 10 and one wishes to read 6 digits from 4th, then the rule can be changed to 4:5:6:7:8:9



Policy Configuration

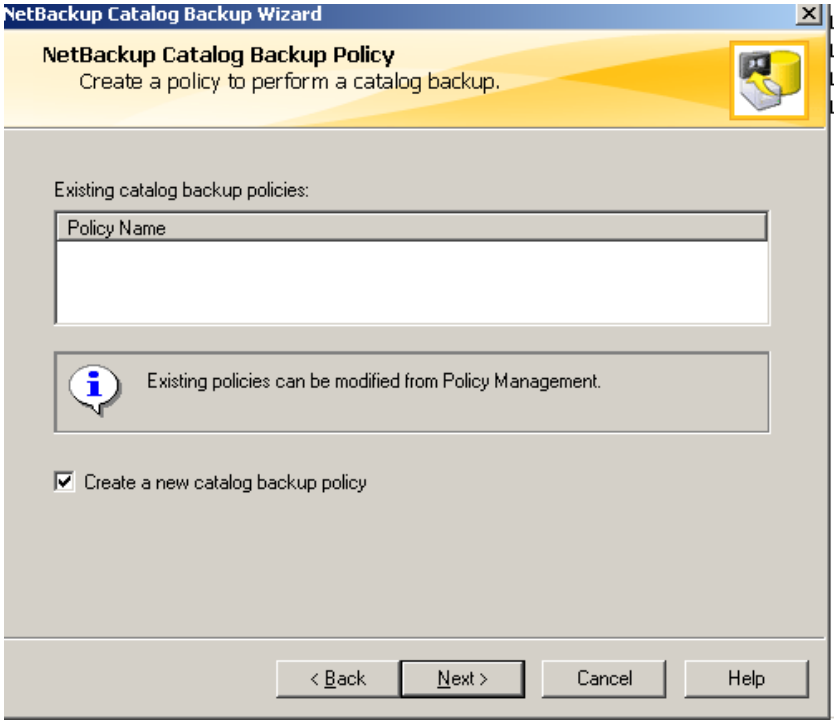
Let's configure a Catalog policy now.

1. Go to the top of the console and click on the master server and choose **configure the Catalog Backup Policy** on the right pane.

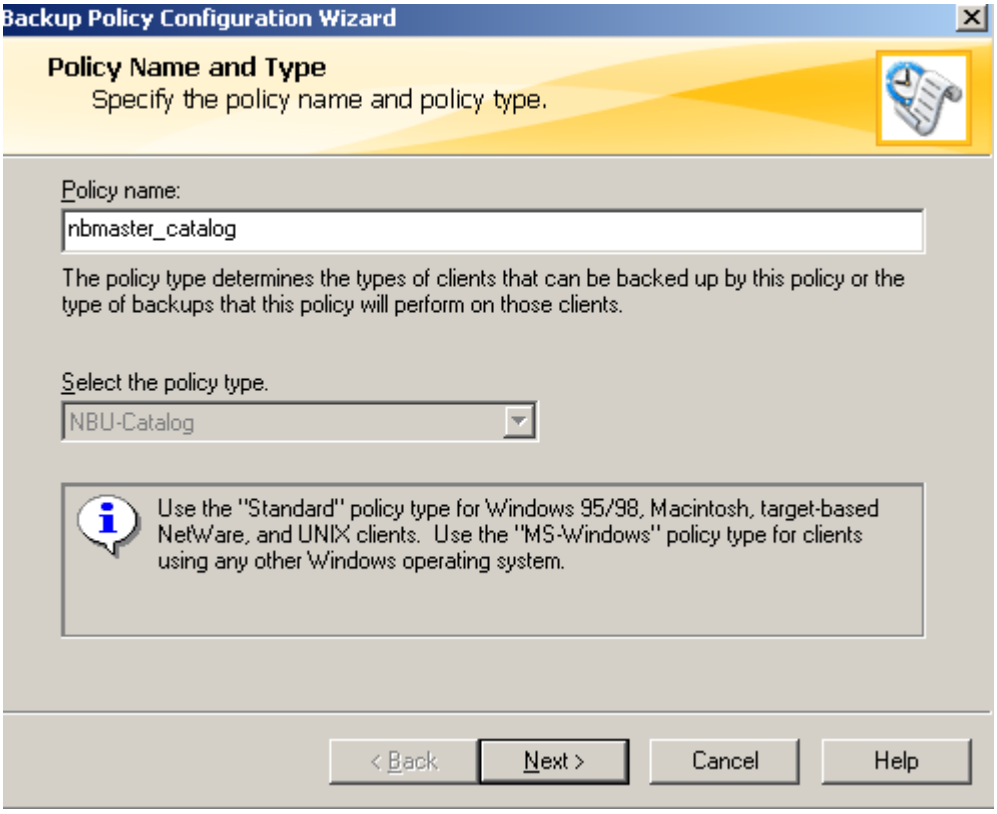


2. This launches the Catalog Backup Wizard. Click next.

3. Place a check to create a new catalog policy as shown below:

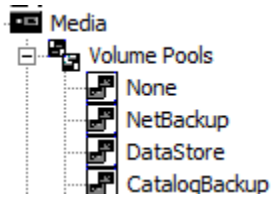


4. Give it a name. Please note the default policy greyed out would be **NBU-Catalog**.



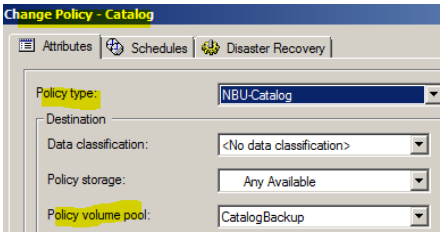
Note:

After installing netbackup, the default volume pools created are as shown below:

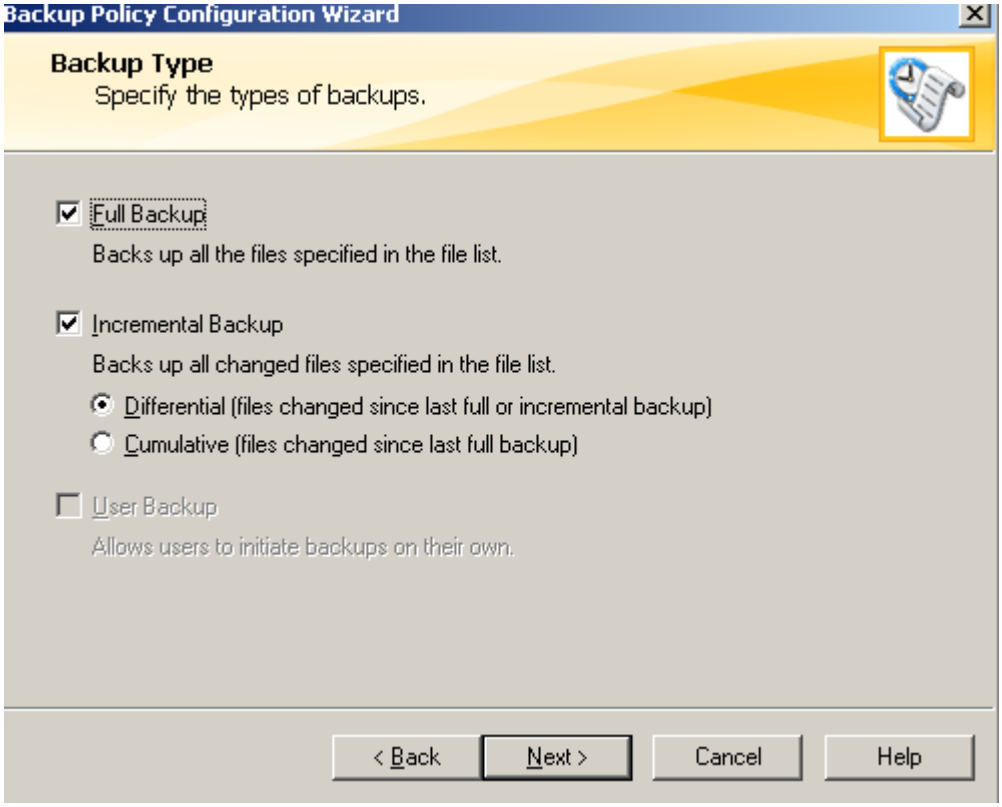


So for the catalog policy, the volume pool would be **Catalog Backup** and policy type set to **NBU-Catalog.**

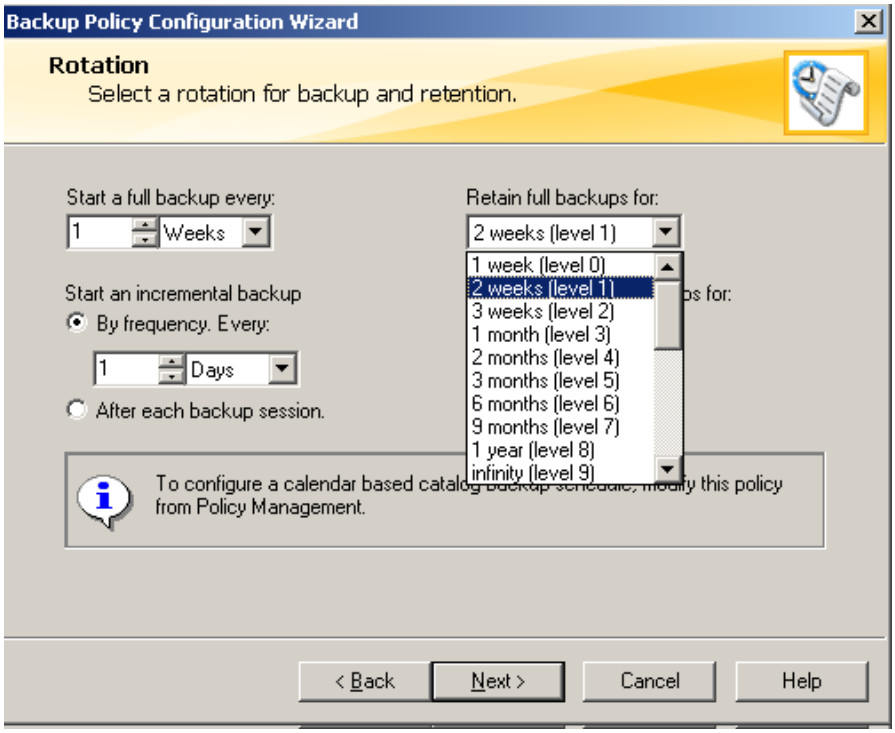
Double clicking the catalog policy would show up this.

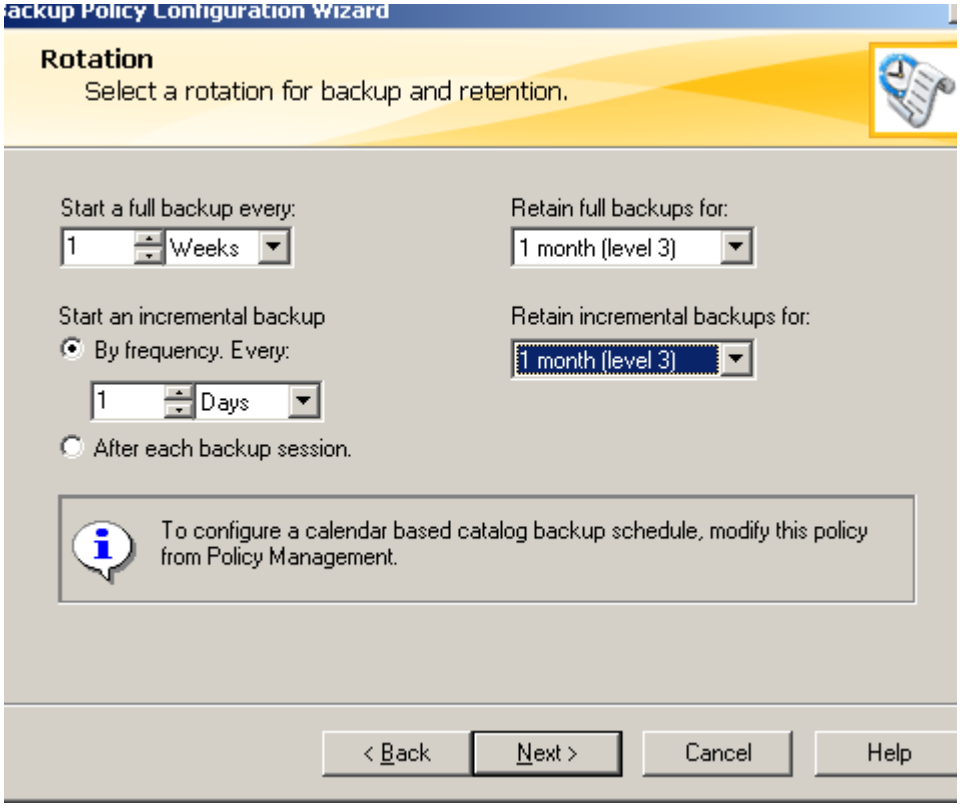


5. Choose the type of backup, which one needs to set as per requirement and click next.

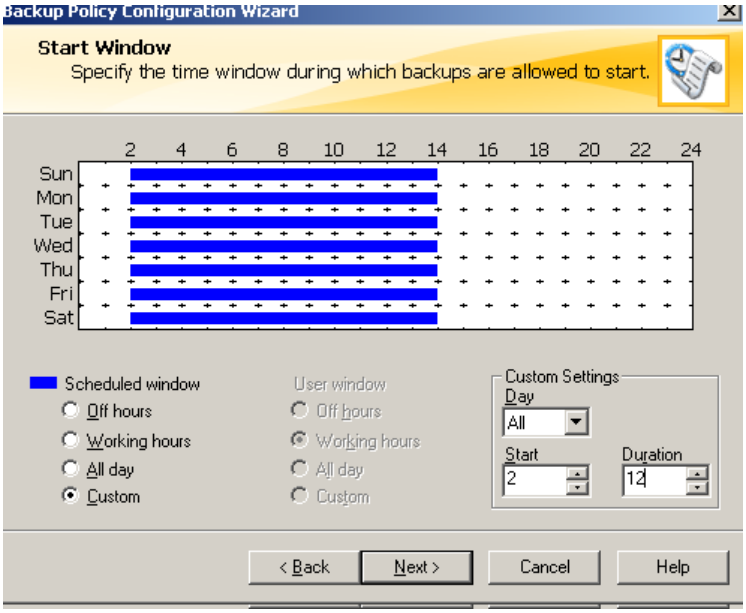


6. This would go to the Rotation page, where one can setup the retention for full and incremental backups to run.

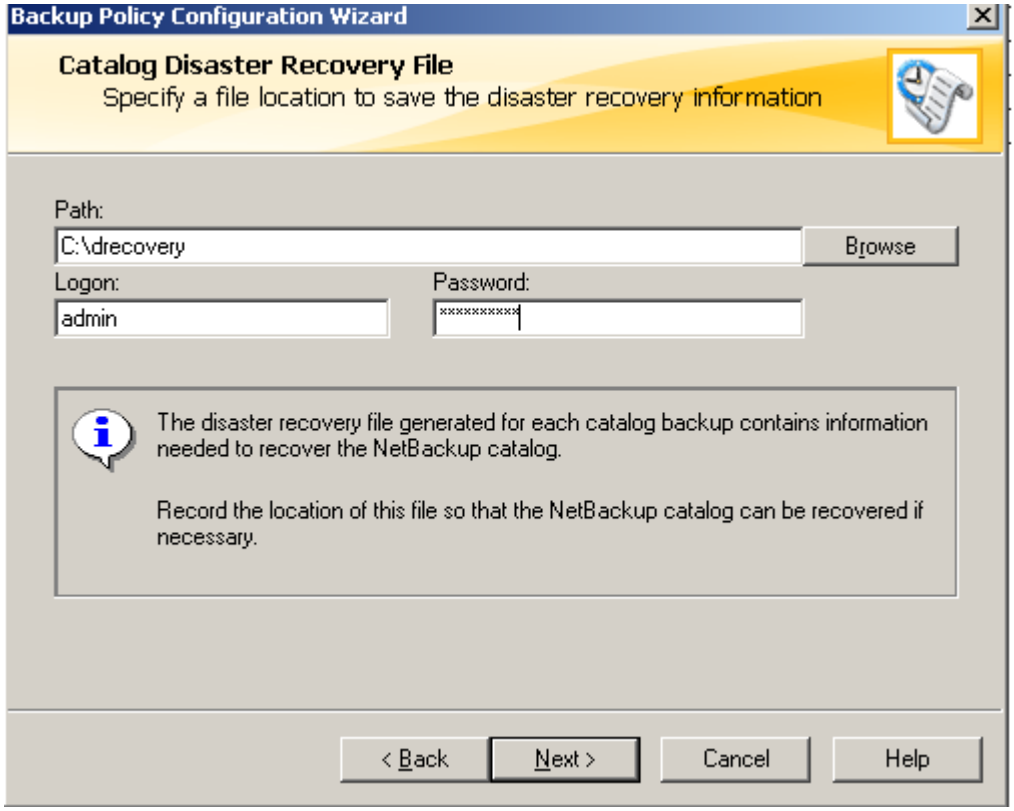




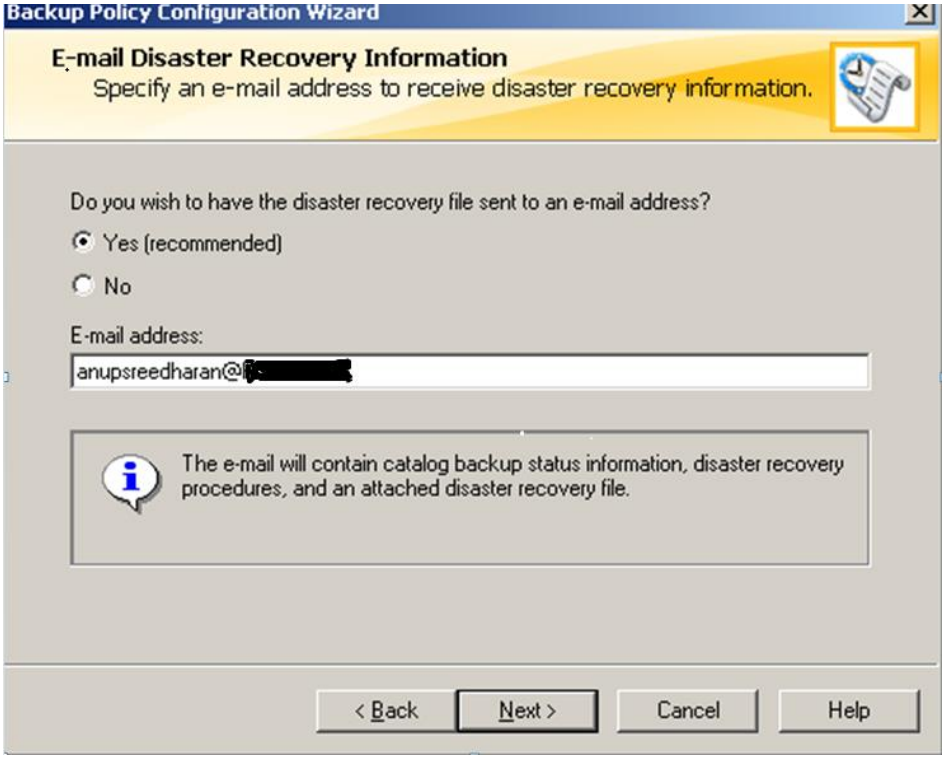
7. Schedule a Change window (Backup window), where your scheduled jobs can run.



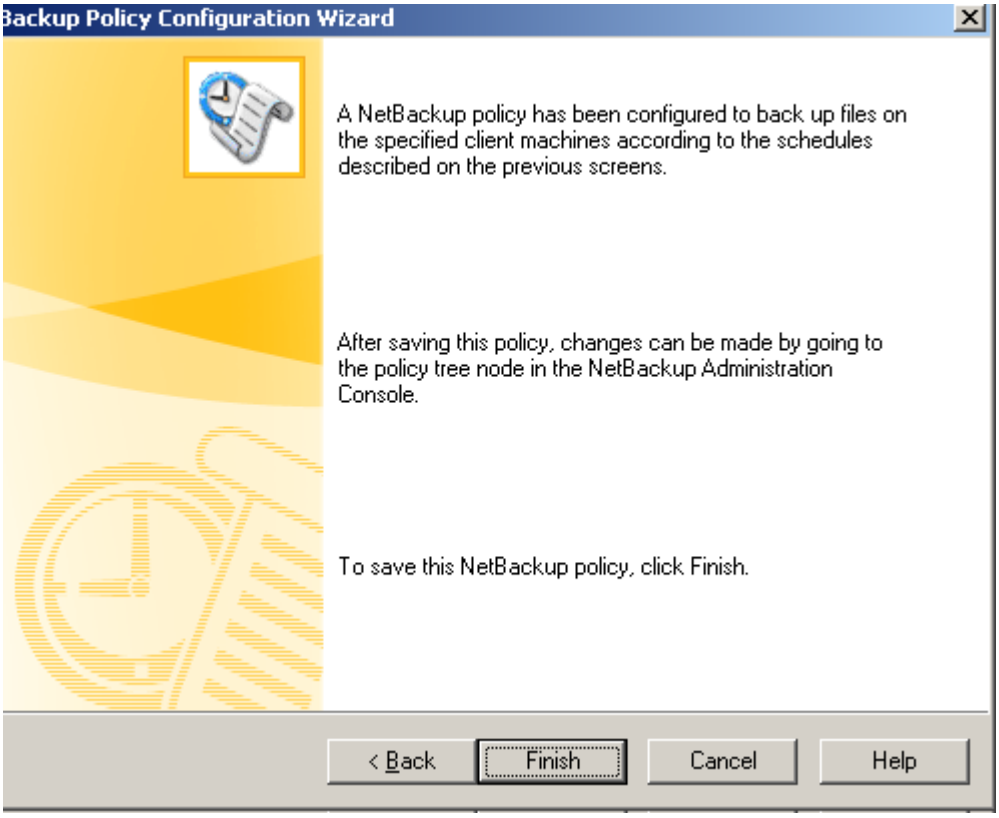
8. Setup a Catalog DR file and choose your directory, where you wish to save them.



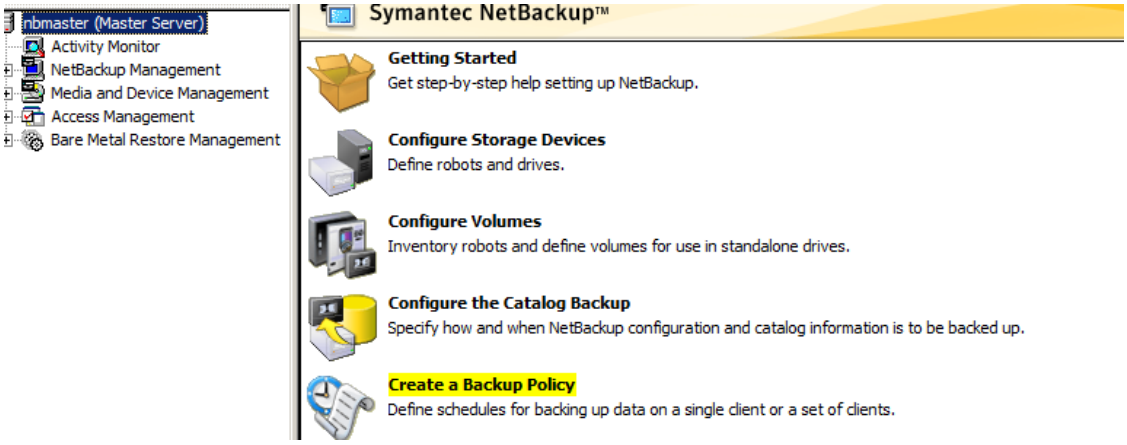
9. Configure your email so that DR file can be send during service disruption.



10. This completes the Catalog policy Completion.

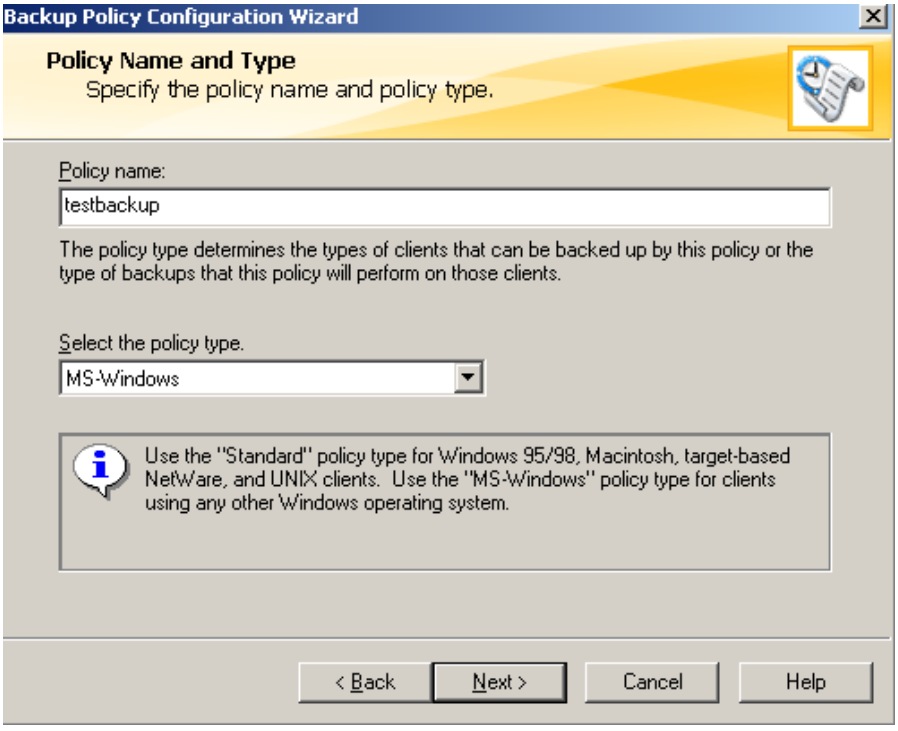


11. Now, let's create a test policy as show below:

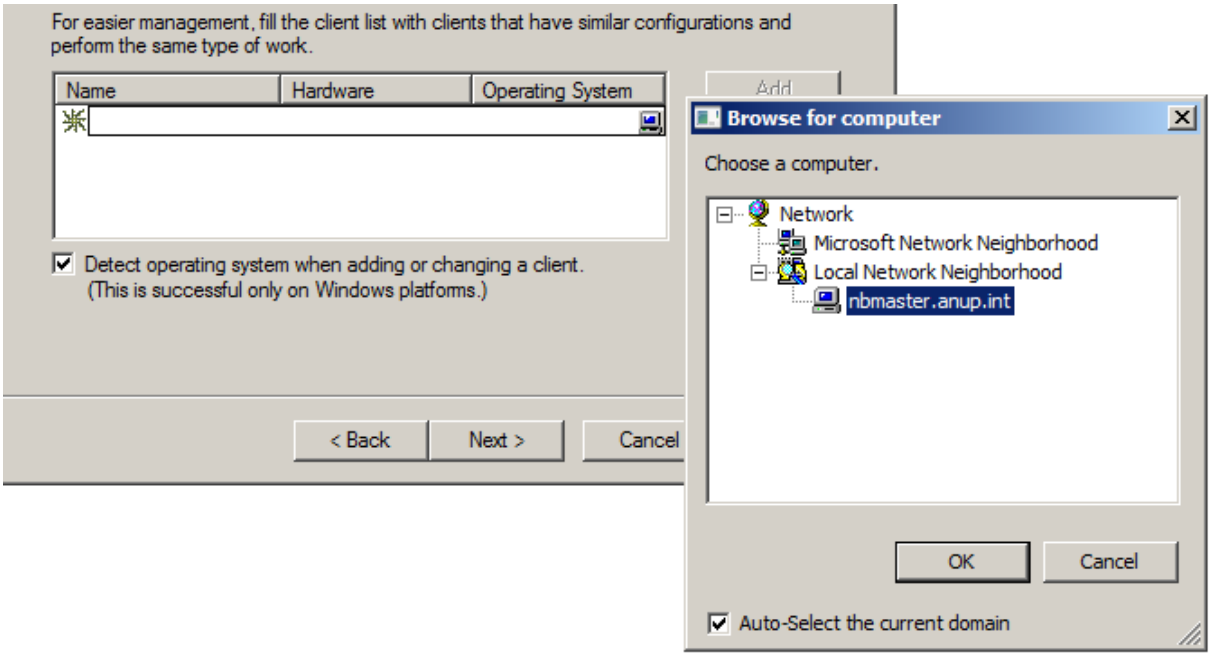


12. This launches the Backup Policy Wizard.

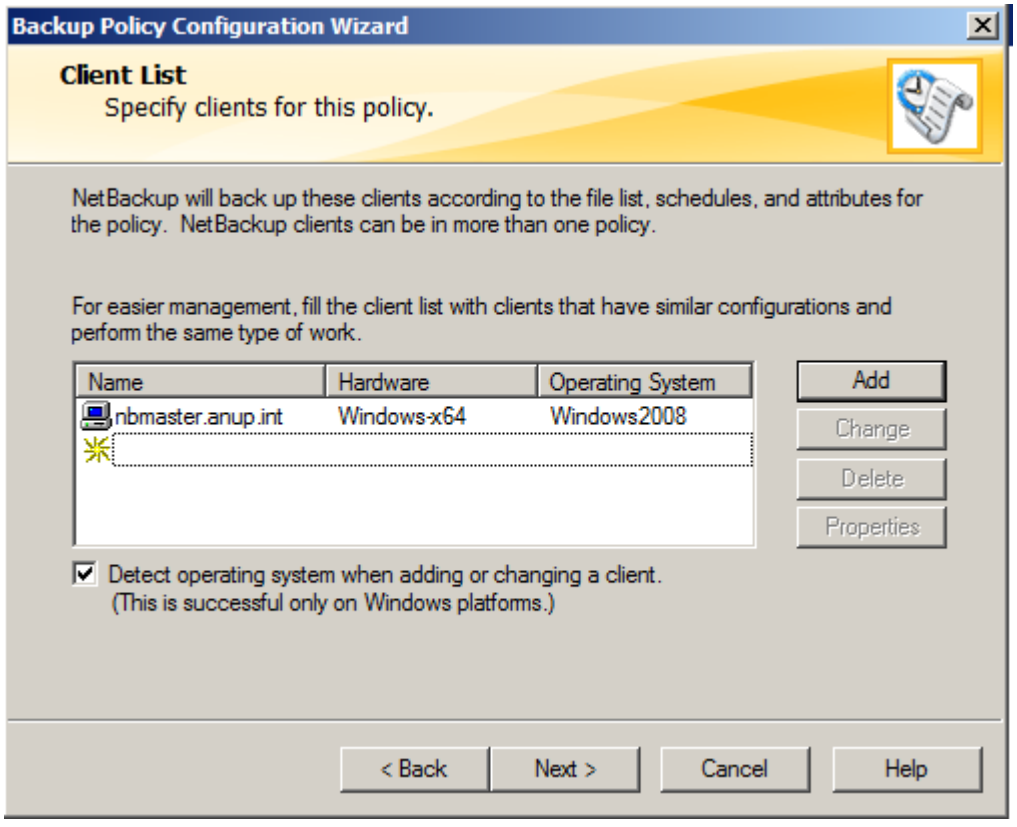
13. Provide the policy name and choose the policy type as MS-Windows (as the test machine is Windows)



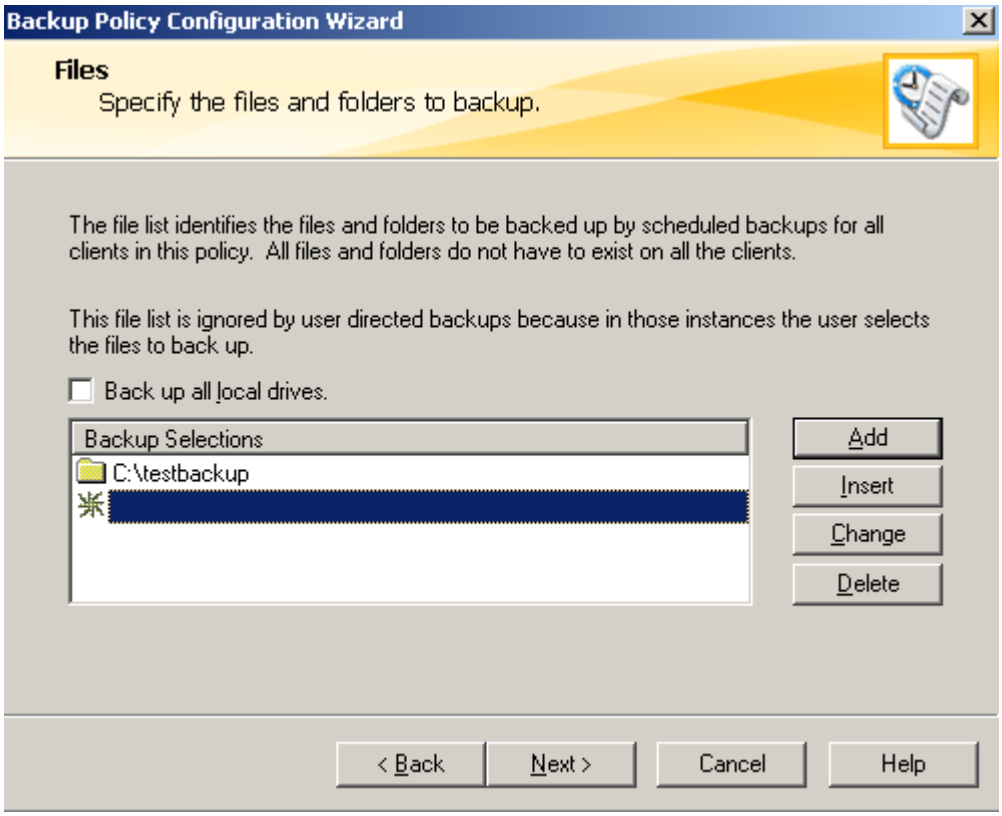
14. Locate the number from the network or add it manually .

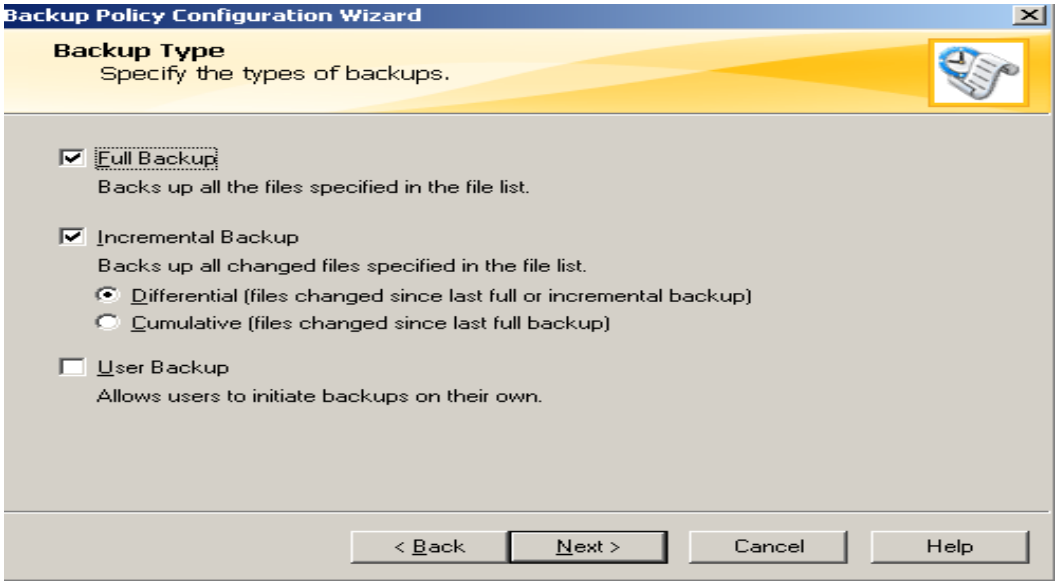


15. Placing a check on the operating system detect box, detects the OS automatically.

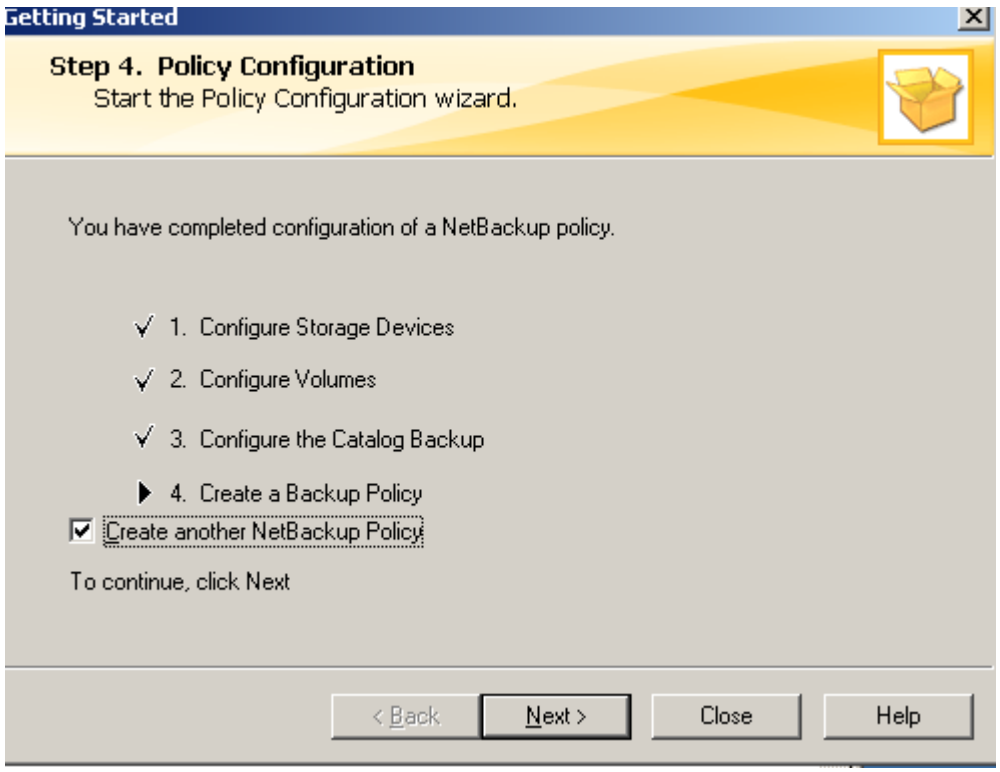


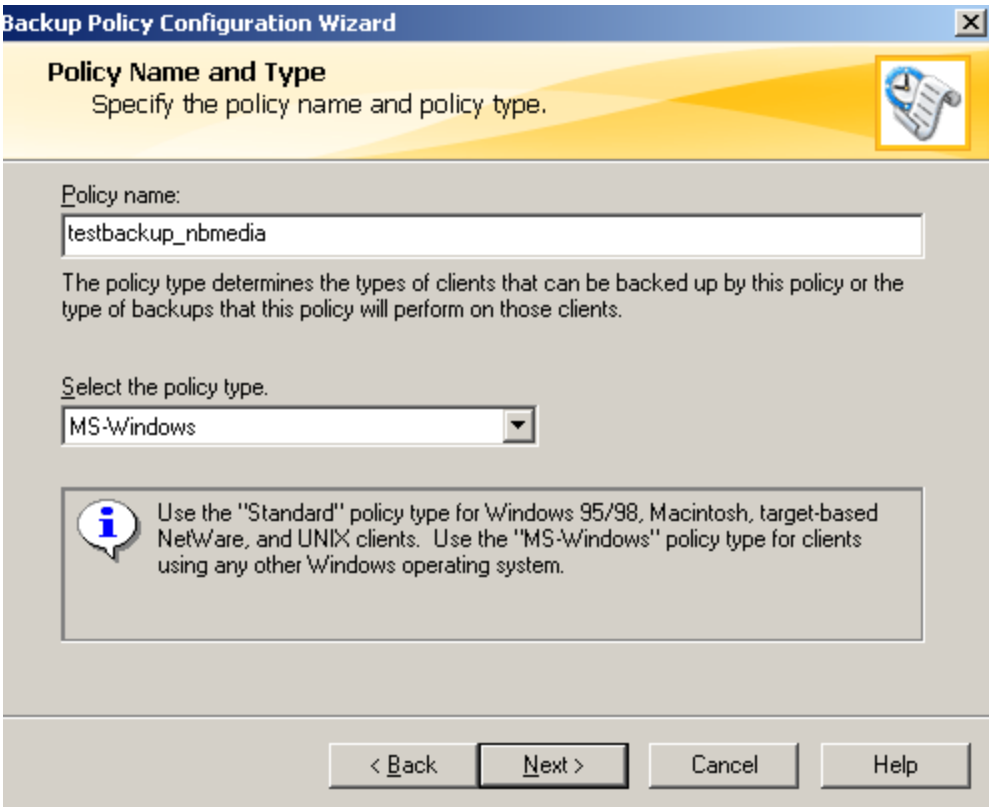
16. Choose a directory to be added for backups. The rest of the steps from here, is same as that of the steps included in Catalog policy creation section (5,6,7 only)

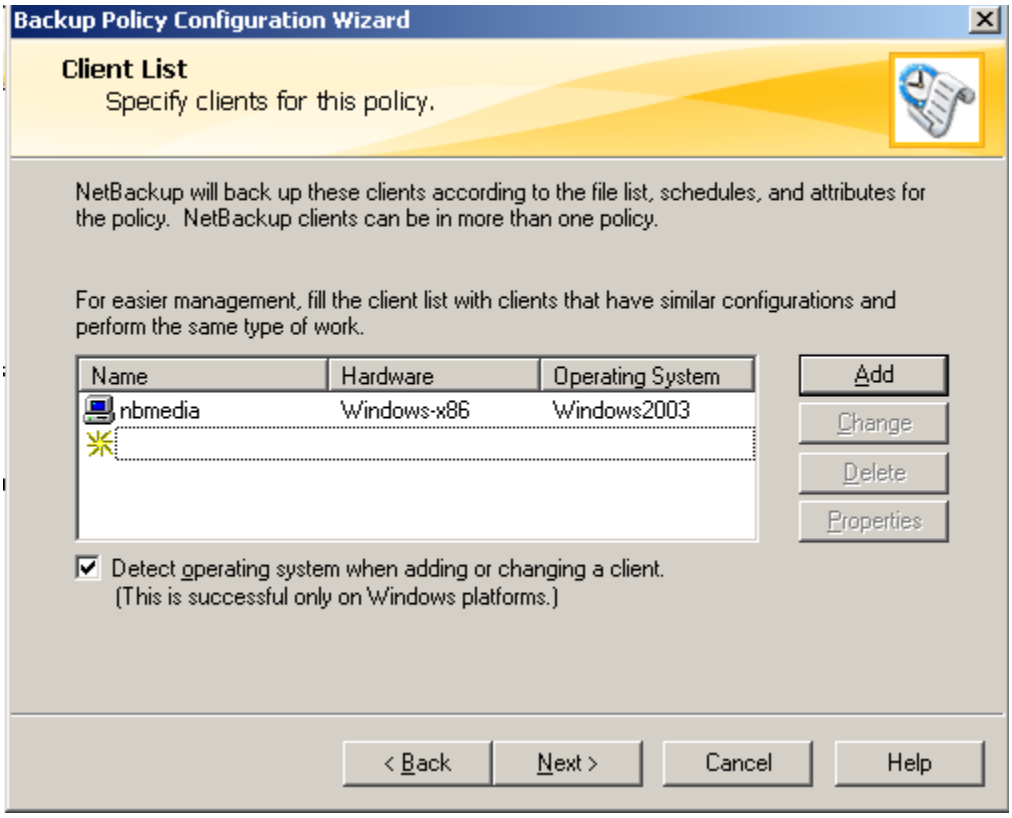


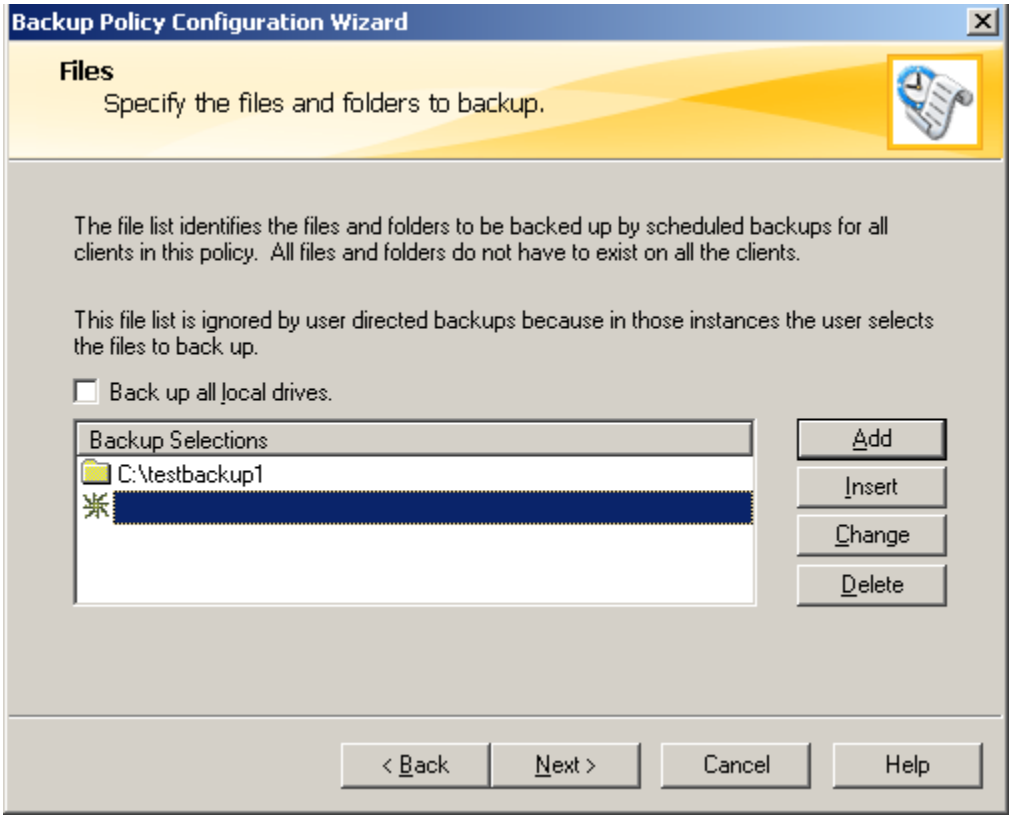


17. Here another policy is created for Media server.

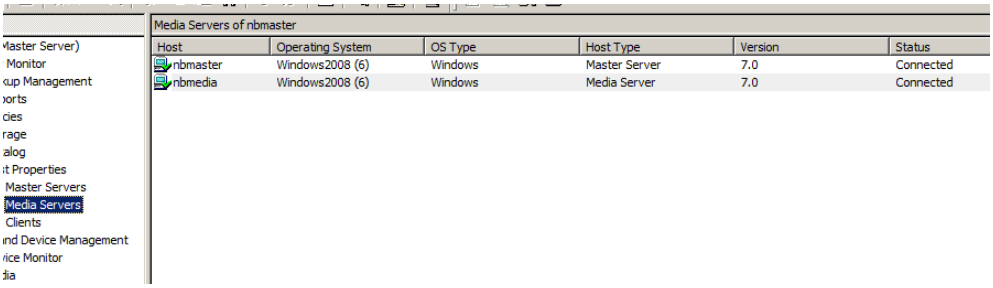



Backup Policy Configuration Wizard
Policy Name and Type
Specify the policy name and policy type.
Policy name:
testbackup_nbmedia
The policy type determines the types of clients that can be backed up by this policy or the type of backups that this policy will perform on those clients.
Select the policy type.
MS-Windows
Use the "Standard" policy type for Windows 95/98, Macintosh, target-based NetWare, and UNIX clients. Use the "MS-Windows" policy type for clients using any other Windows operating system.
< Back
Next >
Cancel
Help

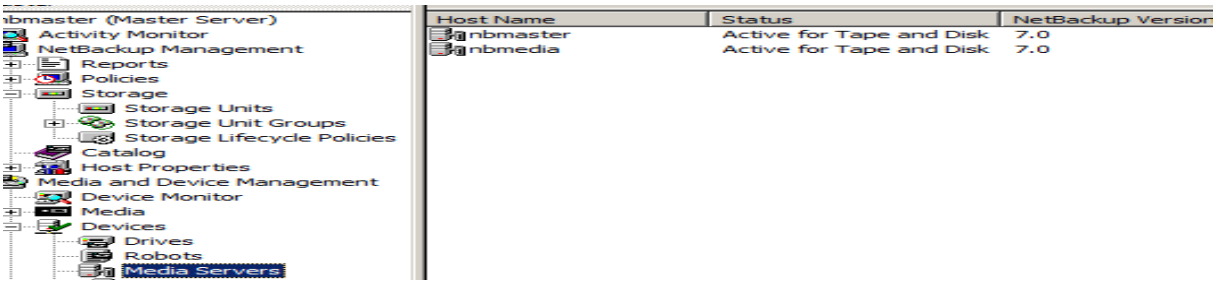

Backup Policy Configuration Wizard
Client List
Specify clients for this policy.
NetBackup will back up these clients according to the file list, schedules, and attributes for the policy. NetBackup clients can be in more than one policy.
For easier management, fill the client list with clients that have similar configurations and perform the same type of work.
Name
Hardware
Operating System
nbmedia
Windows-x86
Windows2003
Add
Change
Delete
Properties
Detect operating system when adding or changing a client.
(This is successful only on Windows platforms.)
< Back
Next >
Cancel
Help



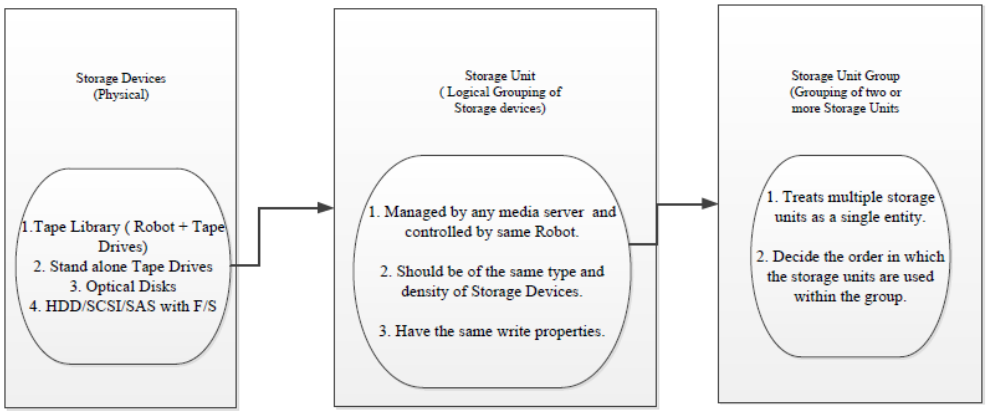
→Master and media server connectivity status along with created policies



Also make sure that under devices, the server status shows "**Available for Tape and disk**"



SD vs SU vs SUG

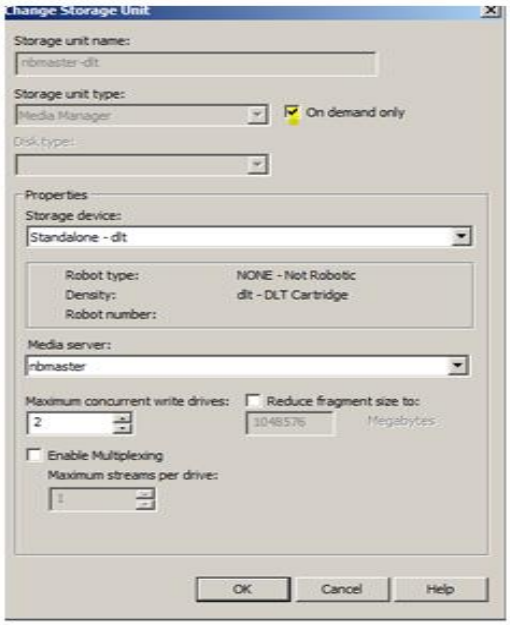


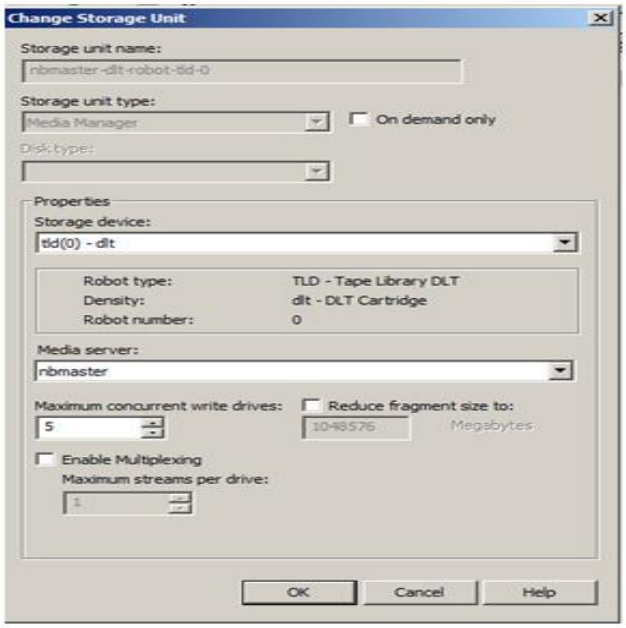
Storage units

The below storage is created from Step-19(Robot and Drive Configuration)

All Storage Units: 2

Name	Storage Unit Type	Density	Max Concurrent Drives	Robot Type	Robot Number	On Demand
nbmaster-dlt	Media Manager	dlt	2			Yes
nbmaster-dlt-robot-tld-0	Media Manager	dlt	5	TLD	0	Yes



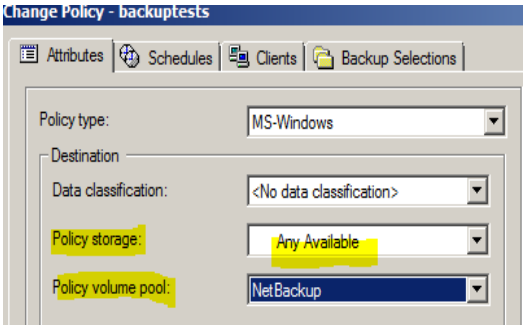


On Demand only:

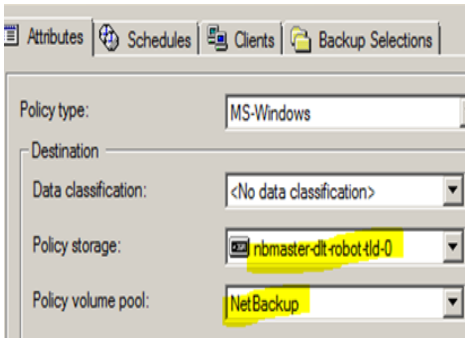
a. Checking this, makes the storage unit available only a particular policy to which it is assigned.

b. Unchecking this, makes the storage unit available to any policy during backups.

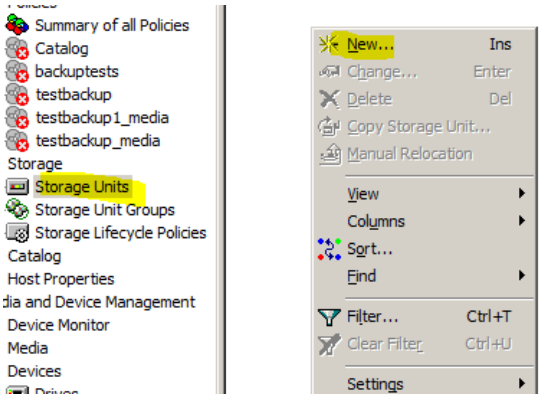
Any Available Storage



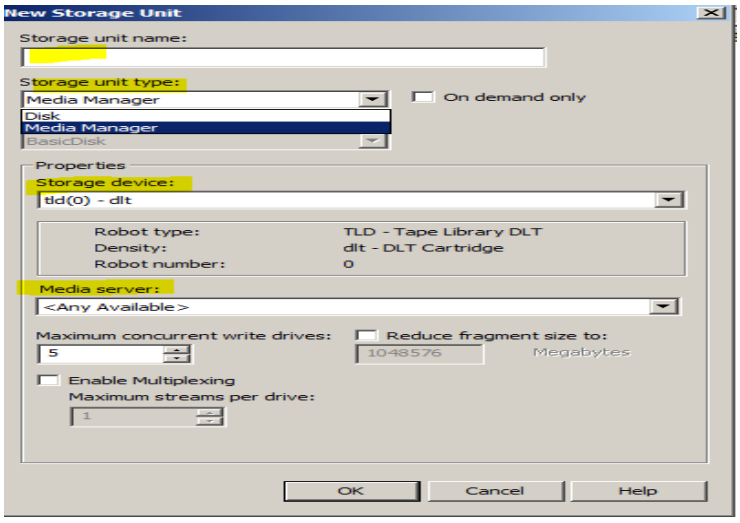
On Demand Storage



→If a new storage device is mounted on the system, it can be added manually on netbackup by navigating to storage units and right click on the right-hand pane and click on new.

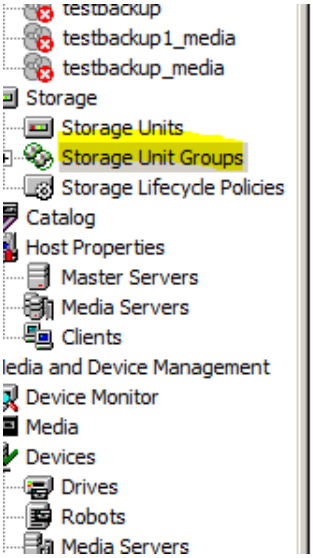


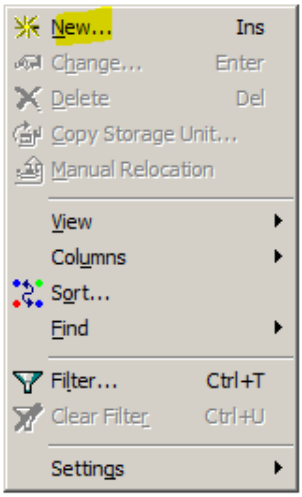
➔ Provide a storage unit name, type of storage unit, Storage device (Eg: Robot+Tape Drive), Media server and click on ok. Here as this is a test environment, the default values can be considered.



STORAGE UNIT GROUP

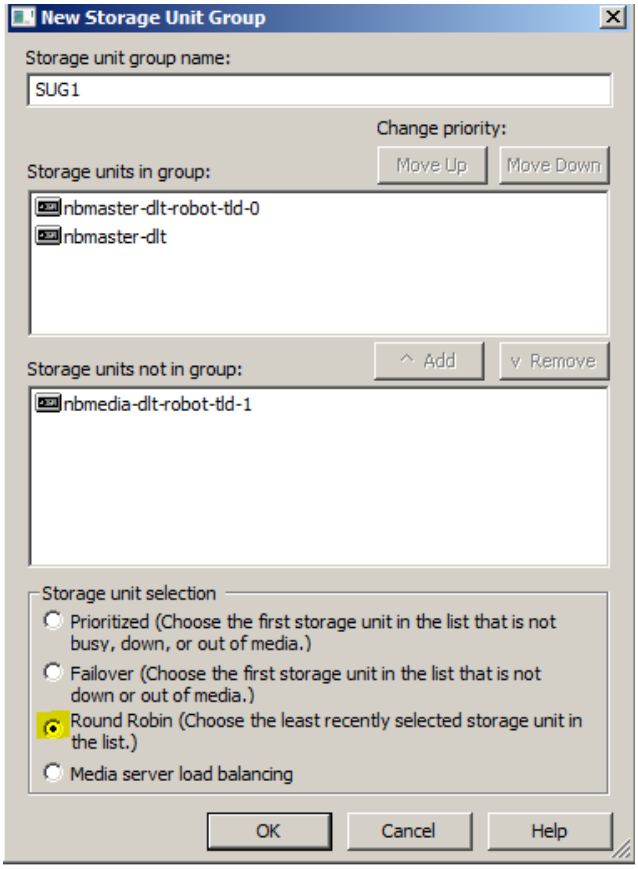
→To add a storage unit group, navigate as shown and do right click on the right hand pane.





➔ Provide a Name, add a storage unit from the available list in second row, change the priority according to the requirement, followed by the algorithm.

In this case, Round Robin is selected.



→Once the groups are created and desired units are added, the final view appears as shown below:

All Storage Unit Groups: 3

Name	Number of Storage Units	Storage Units
SUG1	2	nbmaster-dlt-robot-tld-0, nbmaster-dlt
SUG2	2	nbmedia-dlt-robot-tld-1, nbmaster-dlt
SUG3	2	nbmaster-dlt-robot-tld-0, nbmedia-dlt-robot-tld-1

Startup and Shutdown Scripts:

Once the entire environment is configured, it is always advisable to run a shutdown and startup scripts so that any stopped/hung policy required for netbackup comes up and things are good from an environment standpoint.

```
C:\Program Files\Veritas\NetBackup\bin>bpdown -v -f

NetBackup 7.0 -- Shutdown Utility

Shutting down services
> NetBackup Bare Metal Restore Boot Server
> NetBackup Bare Metal Restore Boot Server -- STOPPED
> NetBackup Bare Metal Restore Master Server
> NetBackup Bare Metal Restore Master Server -- STOPPED
> NetBackup Service Monitor
> NetBackup Service Monitor -- STOPPED
> NetBackup Agent Request Server
> NetBackup Agent Request Server -- STOPPED
> NetBackup Storage Lifecycle Manager
> NetBackup Storage Lifecycle Manager -- STOPPED
> NetBackup Key Management Service
> NetBackup Key Management Service -- STOPPED
> NetBackup Vault Manager
> NetBackup Vault Manager -- STOPPED
```

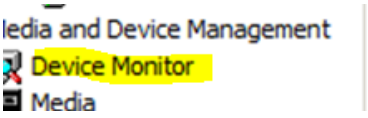
```
C:\Program Files\Veritas\NetBackup\bin>bpup /v /f

NetBackup 7.0 -- Startup Utility

Starting services
> NetBackup Client Service
> NetBackup Client Service -- STARTED
> NetBackup SAN Client Fibre Transport Service
> NetBackup SAN Client Fibre Transport Service -- STARTED
> NetBackup Event Manager
> NetBackup Event Manager -- STARTED
> NetBackup Relational Database Manager
> NetBackup Relational Database Manager -- STARTED
> NetBackup Enterprise Media Manager
> NetBackup Enterprise Media Manager -- STARTED
```

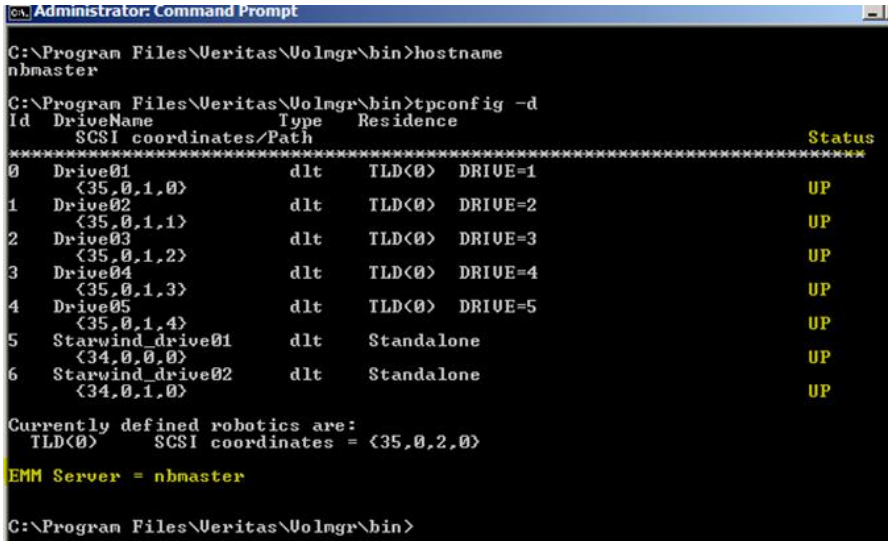
Drive Status: Online

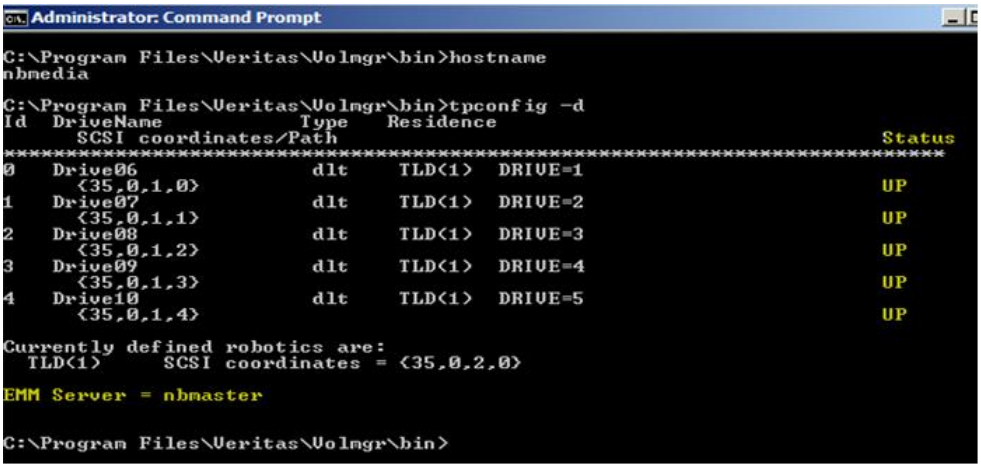
→The drive status of the currently configured ones can viewed by navigating to **Device Monitor**.



Drive Name	Driv...	Con...	Recor...	Ext...	Ready	Writ...	Assi...	Req...	Med...	Driv...	Sha...	Device Host
Drive01	DLT	TLD			No						No	nbmaster
Drive02	DLT	TLD			No						No	nbmaster
Drive03	DLT	TLD			No						No	nbmaster
Drive04	DLT	TLD			No						No	nbmaster
Drive05	DLT	TLD			No						No	nbmaster
Drive06	DLT	TLD			No						No	nbmedia
Drive07	DLT	TLD			No						No	nbmedia
Drive08	DLT	TLD			No						No	nbmedia
Drive09	DLT	TLD			No						No	nbmedia
Drive10	DLT	TLD			No						No	nbmedia
Starwind_drive01	DLT	AVR	A00000		Yes	Yes		0	Yes		No	nbmaster
Starwind_drive02	DLT	AVR	A00001		Yes	Yes		0	Yes		No	nbmaster

→Here the drives 1-5 and 6-10 are not shared and run on individually on Master and Media server, hence if running from a command line, the drive status needs to be checked from both ends.





Note:

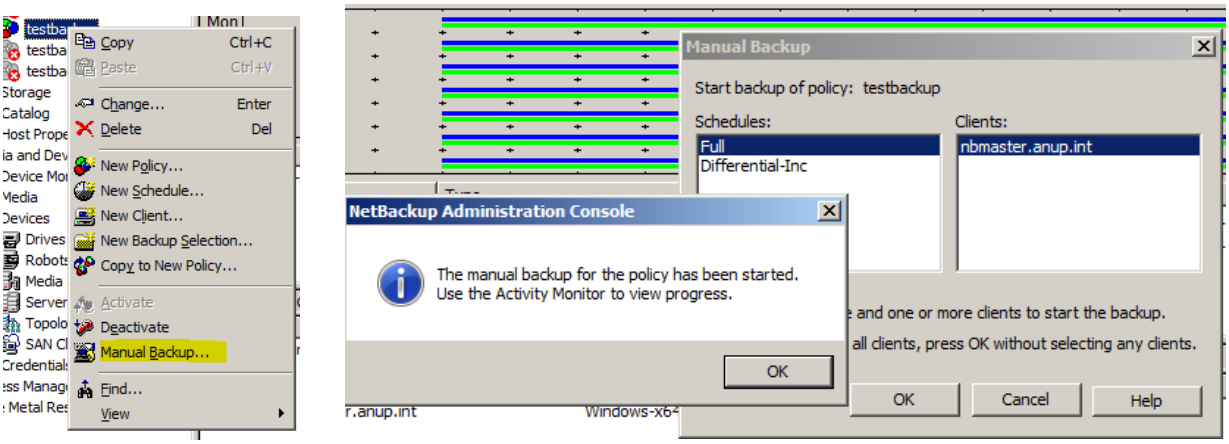
Please make sure the correct EMM server/ Master Server should show up in the result.

EMM= Enterprise Media Manager

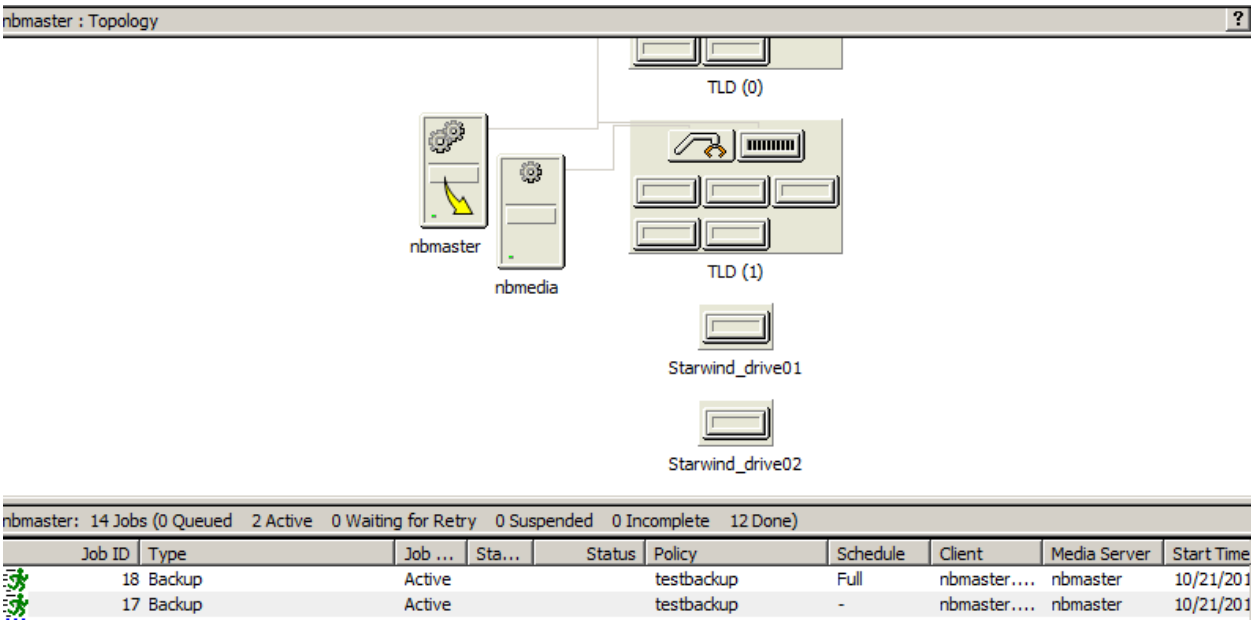
Firing backups:

1. Right click on the active policy and initiate a manual backup. Choose full, select client and click on ok.

   The backup pop shows up advising one to navigate to activity monitor to view the running jobs.



2. Nbmaster (Topology) shows as writing backups with the jobs shows in the bottom section.

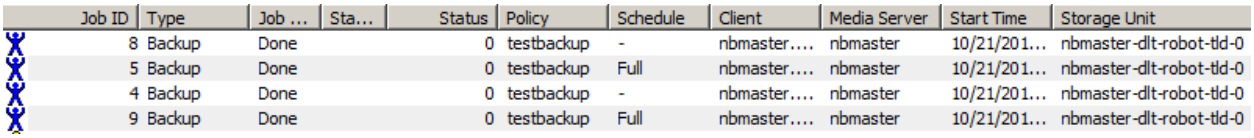


Note:

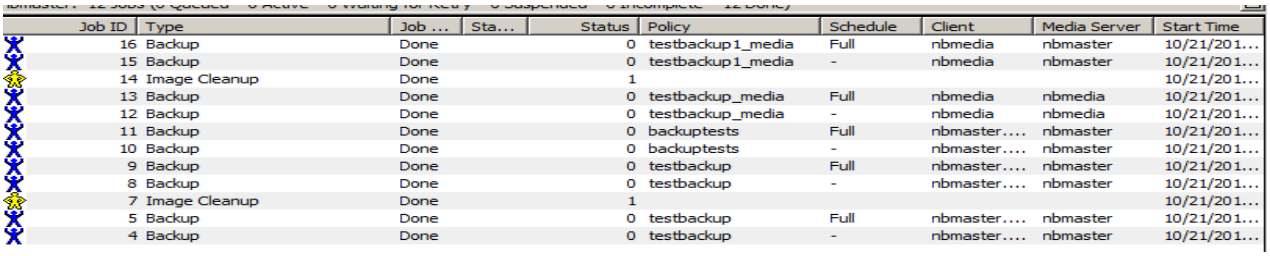
Always a parent job initiates first and a subsequent child job, which then connects, fetches the data from source, reads and then writes it on to a tape.

→Hyphen under Schedule indicates parent job, while the other is the child job.

3. a. Successful jobs show up as **Done** with blue symbol and **Status=0**.
   b. Partially completed jobs show up as **Done** with yellow symbol and **Status=1**.



Job ID	Type	Job ...	Sta...	Status	Policy	Schedule	Client	Media Server	Start Time	Storage Unit
8	Backup	Done		0	testbackup	-	nbmaster....	nbmaster	10/21/201...	nbmaster-dlt-robot-tld-0
5	Backup	Done		0	testbackup	Full	nbmaster....	nbmaster	10/21/201...	nbmaster-dlt-robot-tld-0
4	Backup	Done		0	testbackup	-	nbmaster....	nbmaster	10/21/201...	nbmaster-dlt-robot-tld-0
9	Backup	Done		0	testbackup	Full	nbmaster....	nbmaster	10/21/201...	nbmaster-dlt-robot-tld-0



Job ID	Type	Job ...	Sta...	Status	Policy	Schedule	Client	Media Server	Start Time
16	Backup	Done		0	testbackup1_media	Full	nbmedia	nbmaster	10/21/201...
15	Backup	Done		0	testbackup1_media	-	nbmedia	nbmaster	10/21/201...
14	Image Cleanup	Done		1					10/21/201...
13	Backup	Done		0	testbackup_media	Full	nbmedia	nbmedia	10/21/201...
12	Backup	Done		0	testbackup_media	-	nbmedia	nbmedia	10/21/201...
11	Backup	Done		0	backuptests	Full	nbmaster....	nbmaster	10/21/201...
10	Backup	Done		0	backuptests	-	nbmaster....	nbmaster	10/21/201...
9	Backup	Done		0	testbackup	Full	nbmaster....	nbmaster	10/21/201...
8	Backup	Done		0	testbackup	-	nbmaster....	nbmaster	10/21/201...
7	Image Cleanup	Done		1					10/21/201...
5	Backup	Done		0	testbackup	Full	nbmaster....	nbmaster	10/21/201...
4	Backup	Done		0	testbackup	-	nbmaster....	nbmaster	10/21/201...

4. a. Active jobs show up as green symbol of a running man.

18	Backup	Active
17	Backup	Active

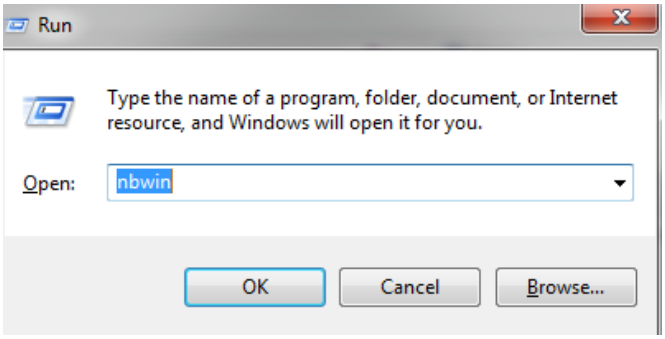
b. Queued job shows as green symbol with multiple people standing in a queue

23	Backup	Done		0 testba
22	Backup	Queued	Limit has been reached for requested resour...	testba
21	Backup	Active		testba
20	Backup	Active		testba

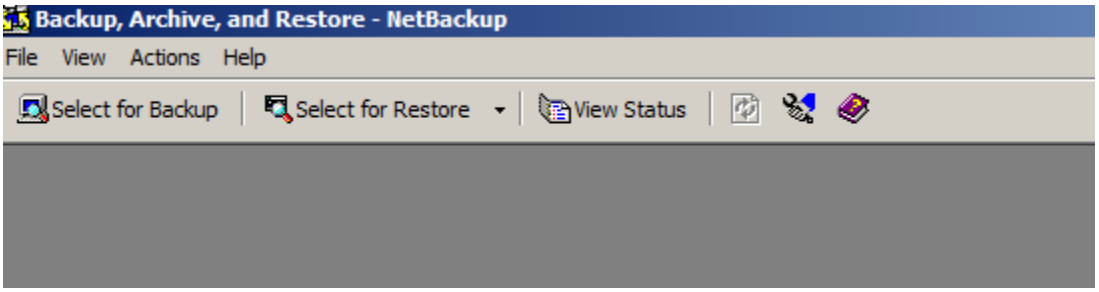
Restore Setup:

1. To restore the backed up data, navigate to "**Backup, Archive and Restore**" as shown below:

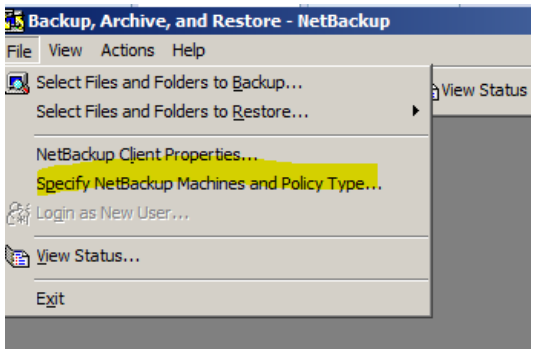
One can also run **nbwin** from the run prompt to launch the same console.



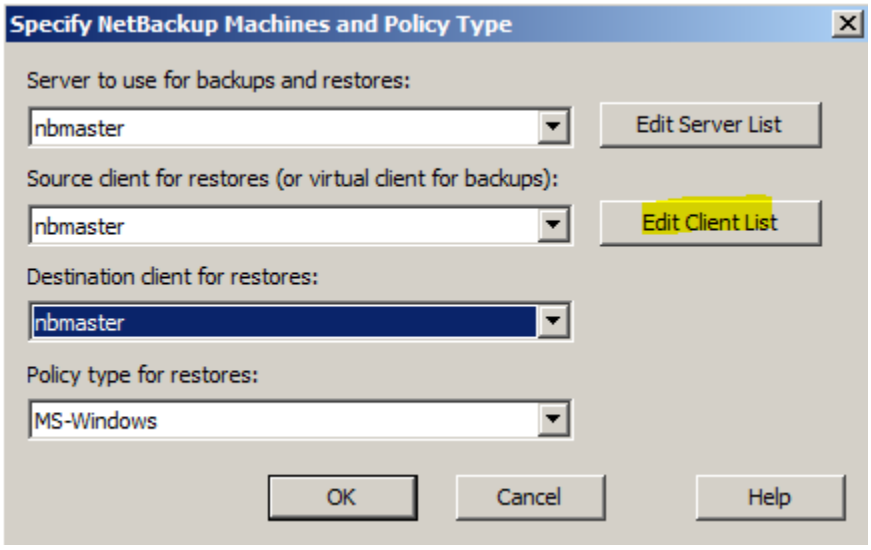
2. The Console looks as shown below:

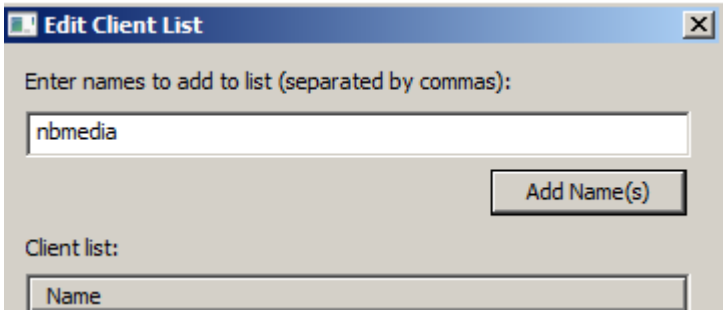


3. Specify the netbackup machine and type: Here the source and destionation of restore is nbmedia, hence the corresponding server needs to be added.

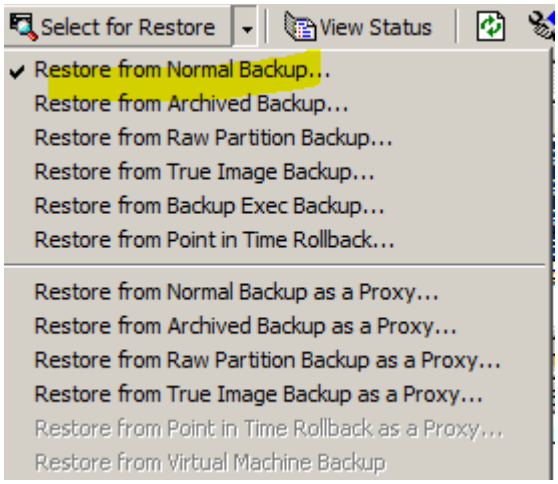


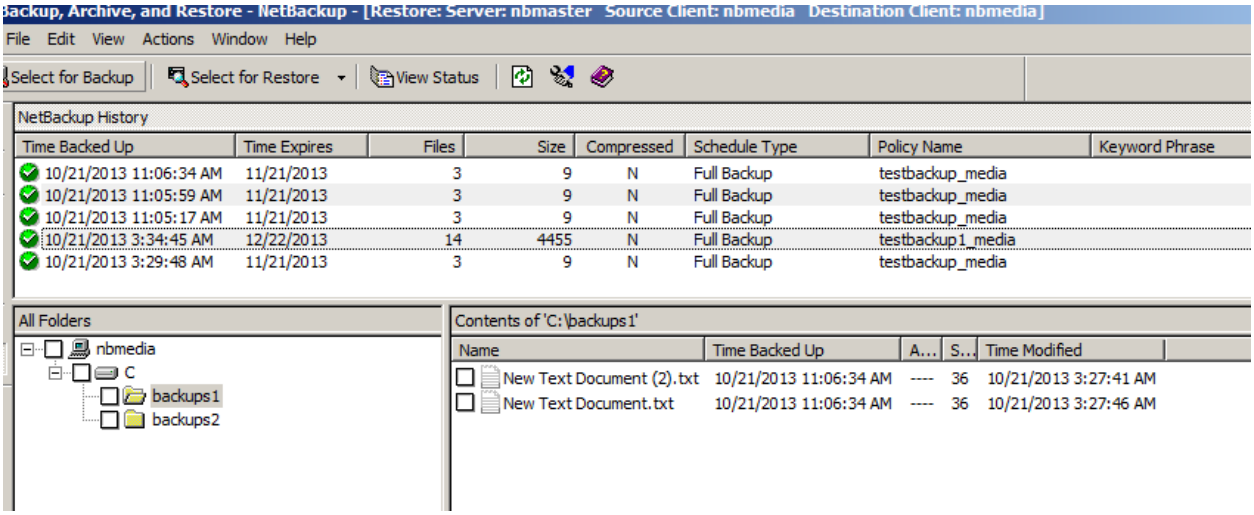
4. Edit the client list and add the media server.

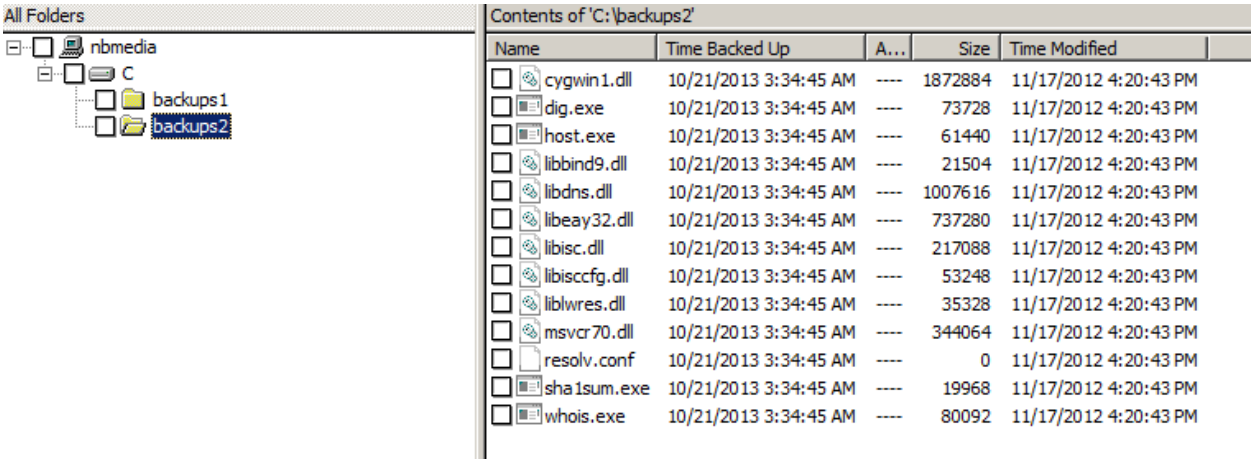




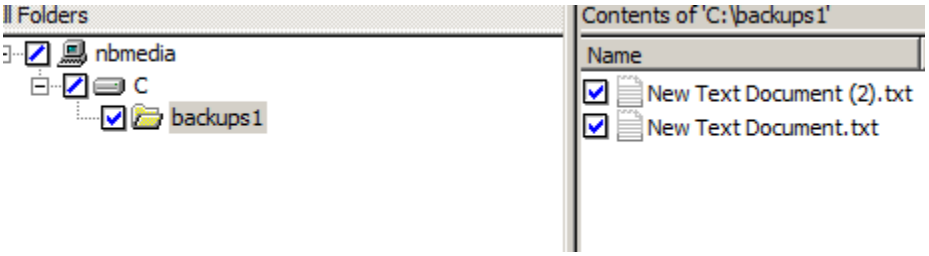
5. Choose the source and destination drop down as **nbmedia** and select "Restore from Normal Backup to view the history of the data.



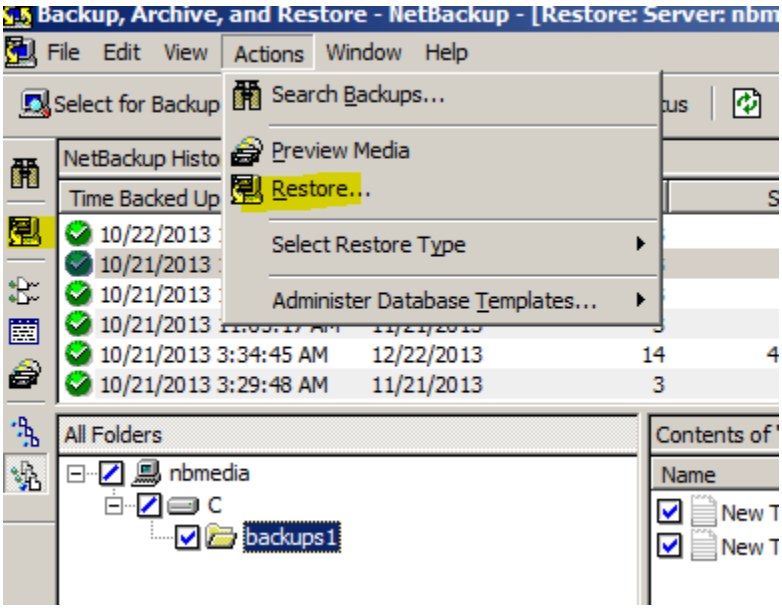




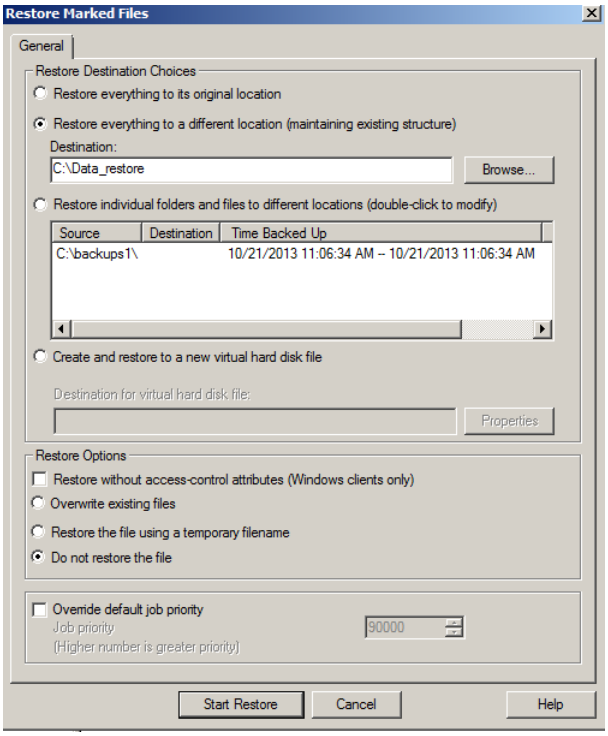
6. Make sure that the files required for restore are selected:



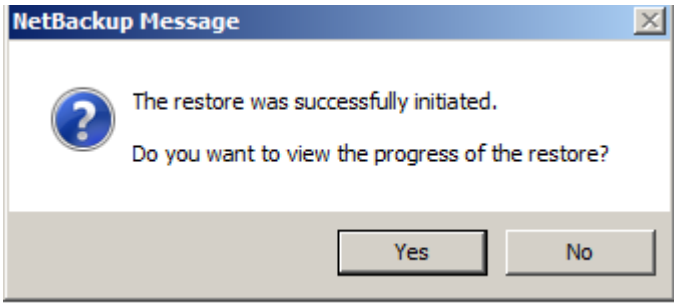
7. Two way for restoration:

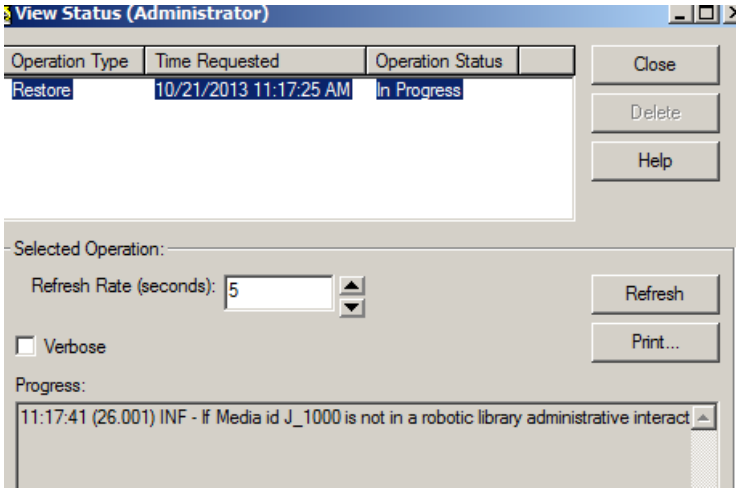


8. Enter the destination path where you need to restore. Here , it is a folder on the same server→ C:\Data_restore

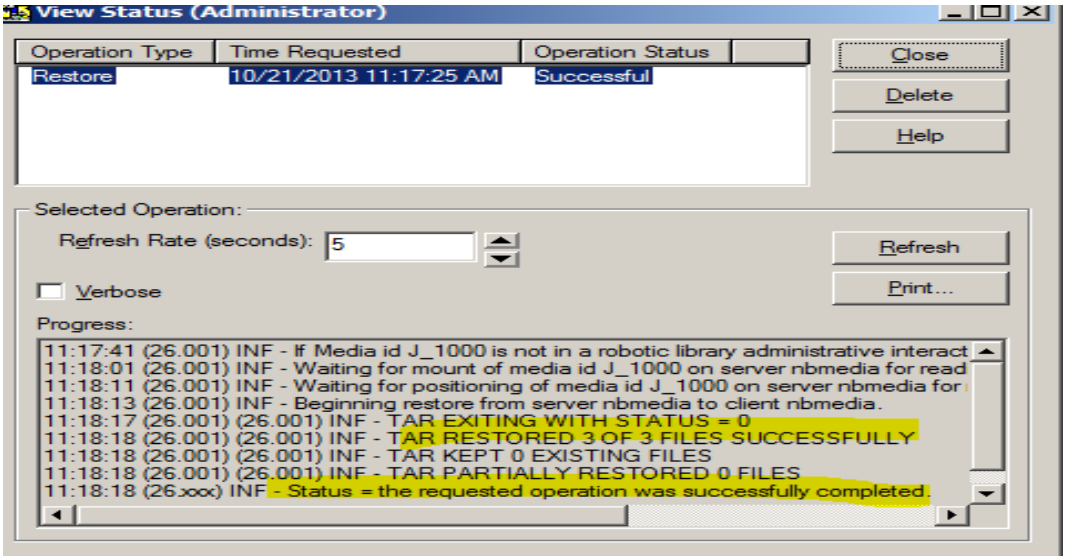


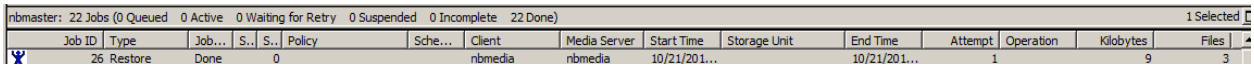
9. The restore initiated message pops up, along with asking if one would like to view the progress of it.





10. The initiated restore is complete and same appears in the restore job as Done.





11. Navigate to the destination location and check for the restored file.