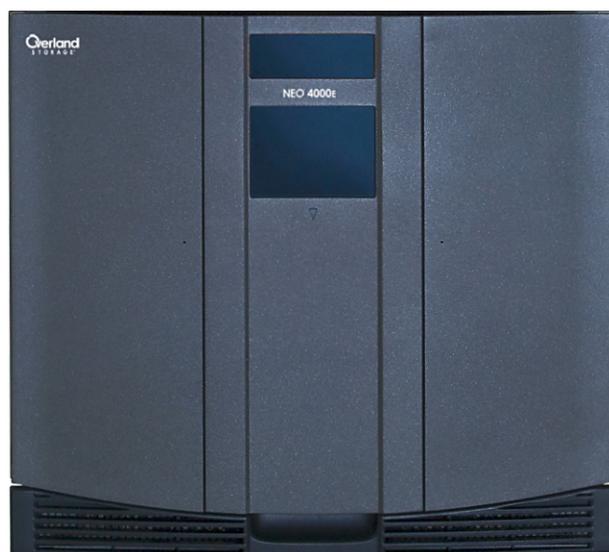


Application Note

October 2013

Configuring a NEO Tape Library using Tivoli Storage Manager



Summary

This Application Note describes how to configure a NEO tape library on Windows Server 2008R2 with IBM Tivoli Storage Manager 6.3.3.0. Upon successful completion of these procedures, the reader will have a general understanding on how to configure the NEO using TSM console and how to create a backup and restore job with the NEO library.

Prerequisites

Prior to performing this procedure, ensure that you have the following:

- The library has already been installed and configured, for more information about basic configuration, please reference the User Guide that came with it.
- In order to configure the NEO E-series library with IBM Tivoli Storage Manager (TSM) 6.3.3, it is required to have the tape device drivers loaded prior to configuring the library in TSM. Use the following link to download the necessary driver files:

<http://support.overlandstorage.com/support/neo-series.htm>

For explicit installation instructions, review *TB-NEO_TapeDeviceDriverInstallation.pdf*:

http://www.overlandstorage.com/pdfs/TIB-NEO_Windows-DriverInstallation_r5.3.pdf

This document assumes the IBM TSM server is already installed and the reader has a general understanding and is familiar with TSM. Any and all additional information can be attained through IBM TSM Redbooks.

Additional Information

Prior to performing these procedures, the following is a list of items the reader should be aware of:

- IBM TSM supports IBM LTO-6 tape drives with TSM versions 6.2.5.0 and 6.3.3.0 with the latest maintenance release. Any earlier versions of TSM are not supported. Also note, configuring IBM LTO-6 tape drives is supported only through the TSM Console. Configuring the library through Tivoli Admin Center is not currently supported by IBM. Please use the following link for additional information:

<http://www-01.ibm.com/support/docview.wss?rs=663&uid=swg21612814>

- IBM TSM does not support IBM LTO-6 tape drives on Windows 2003. The LTO-6 is certified for Windows Server 2008 and higher:

<http://www-01.ibm.com/support/docview.wss?uid=swg21633872>

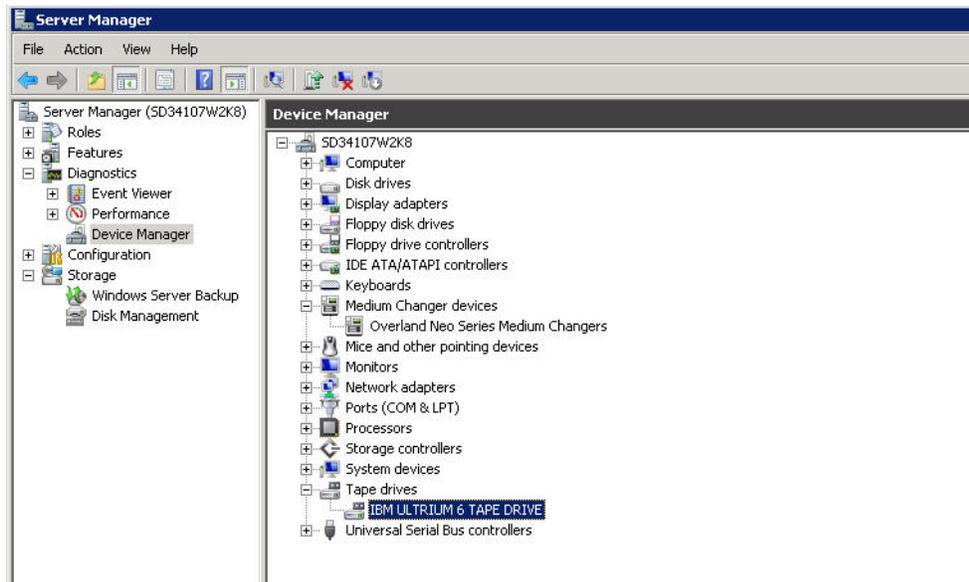
Versions

The test environments used for illustration in this document are as follows:

- NEO 4000E (FC) FW 2.01.026 / IBM LTO-6 FW D2DE
- IBM Tivoli Storage Manager Server Version 6.3 Level 3.0
- Windows Server 2008R2SP1 x64
- LTO-6 IBM Driver 6.2.3.6x64/6.2.3.8x64 (ibmtp2k8.sys/ibmtpft2k8.sys)
- Tape Library Driver (TSM) 6.3.3.0 (tsmscsi64.sys)

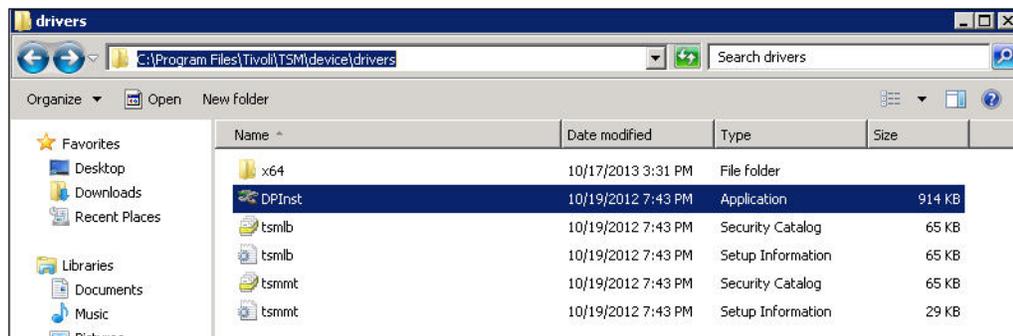
Verifying the Tape and Library Devices in Windows Device Manager

After meeting the prerequisites of having the IBM tape driver installed, the following should appear in Windows Device Manager. The devices are an Overland NEO Series Medium Changers and an IBM ULTRIUM 6 Tape Drive.



In order to configure the Overland devices with TSM, the TSM driver must be used for the medium changer device. Use the following steps to install the TSM driver.

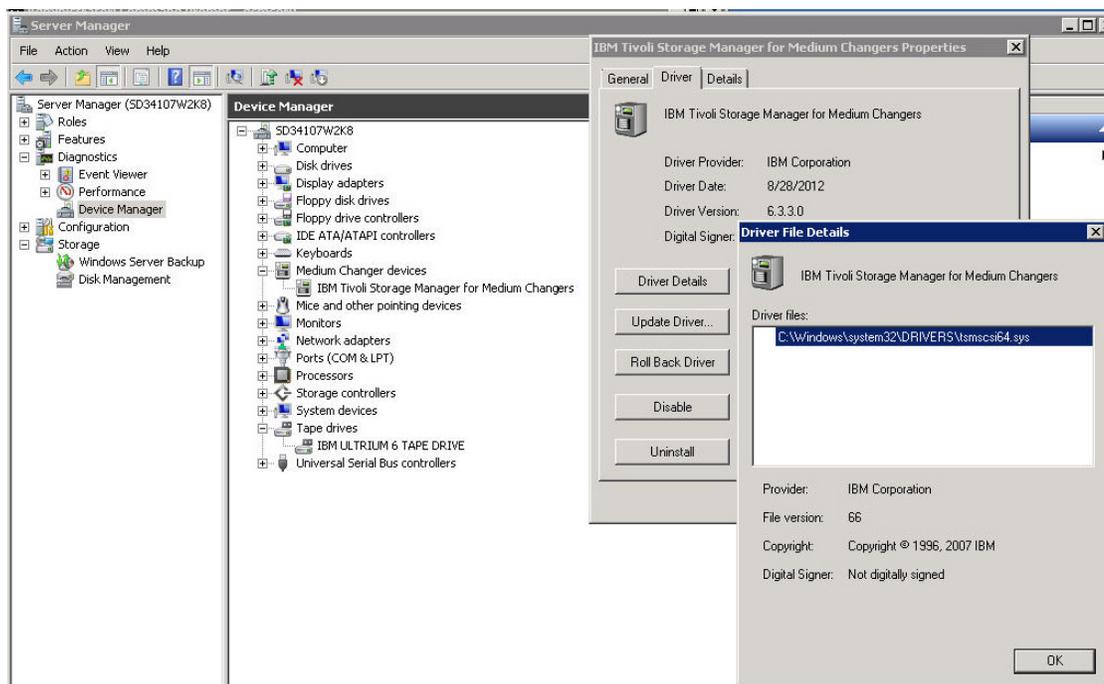
1. In the *C:\Program Files\Tivoli\TSM\device* folder, double-click **DPInst.exe**. This will install the TSM drivers.



2. Follow the **wizard** instructions:



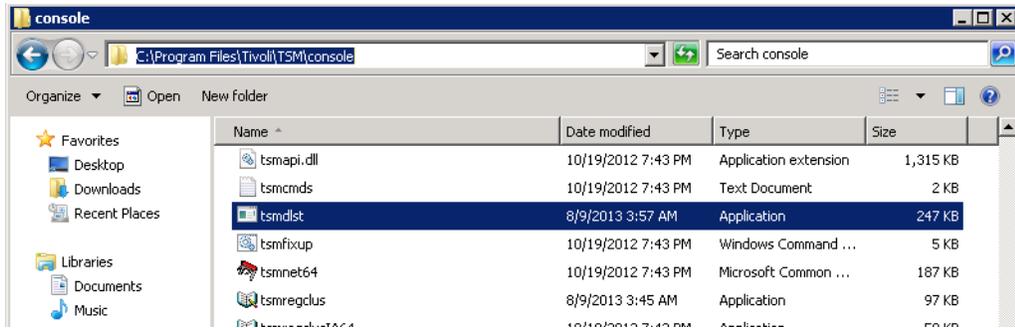
3. Verify the Overland NEO-Series Medium Changers driver now appears as an *IBM Tivoli Storage Manager for Medium Changers* driver.



Collecting information

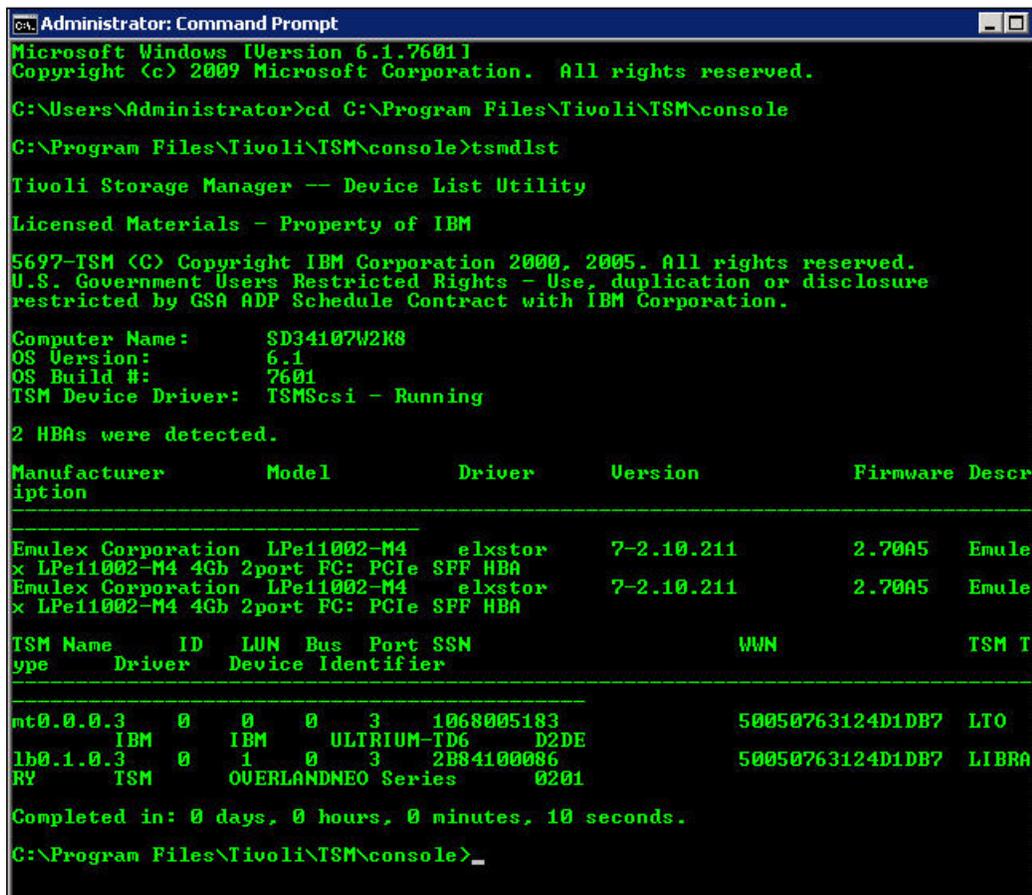
Use the following section to collect the TSM device information for both library and drive. The TSM utility **tsmdlst.exe** is run in DOS and displays the output of the TSM devices known to the TSM backup server. Collect the output displayed as the information will be used in the following sections.

1. In a DOS shell, change to the *C:\Program Files\Tivoli\TSM\console* folder and execute **tsmdlst.exe**.



2. The following output displays the **device names** to use.

Make careful note of the device output highlighted here. The LTO-6 device is *mt0.0.0.3* and the NEO library is *lb0.1.0.3*. These will be used during the configuration of the device in TSM.



Configuring the NEO with TSM Console

Use these procedures to configure the NEO tape library and LTO-6 tape drive using TSM Console.

1. Use these TSM commands to create a **library** and **drive**..:

- `def libr neo libt=scsi`
- `def drive neo drive1`

- Use these TSM commands to create the **paths** for the new device, using the information gathered from the previous steps to enter as the device path.:
 - `def path SD34107W2K8 neo srctype=server desttype=libr device=lb0.1.0.3`
 - `def path`
 - `SD34107W2K8 drive1 srctype=server desttype=drive device=mt0.1.0.3 libr=neo`

The following is the output of the TSM commands used.

- `q libr`
- `q drive`
- `q path`

```
TSM:SD34107W2K8>
Storage Management Server for Windows - Version 6, Release 3, Level 3.0

TSM:SD34107W2K8>
def path SD34107W2K8 drive1 srctype=server desttype=drive device=mt0.0.0.3 libr=
neo
ANR2017I Administrator SERVER_CONSOLE issued command: DEFINE PATH SD34107W2K8
drive1 srctype=server desttype=drive device=mt0.0.0.3 libr=neo
ANR8955I Drive DRIVE1 in library NEO with serial number is updated with the
newly discovered serial number 1068005183.
ANR1720I A path from SD34107W2K8 to NEO DRIVE1 has been defined.
TSM:SD34107W2K8>
q libr
ANR2017I Administrator SERVER_CONSOLE issued command: QUERY LIBRARY

Library Name: NEO
Library Type: SCSI
ACS Id:
Private Category:
Scratch Category:
WORM Scratch Category:
External Manager:
RSM Media Type:
Shared: No
LanFree:
ObeyMountRetention:

TSM:SD34107W2K8>
q drive
ANR2017I Administrator SERVER_CONSOLE issued command: QUERY DRIVE

Library Name      Drive Name      Device Type      On-Line
-----
NEO                DRIVE1          LTO              Yes

TSM:SD34107W2K8>
q path
ANR2017I Administrator SERVER_CONSOLE issued command: QUERY PATH

Source Name      Source Type      Destination      Destination      On-Line
-----
SD34107W2K8     SERVER          NEO              LIBRARY         Yes
SD34107W2K8     SERVER          DRIVE1           DRIVE           Yes
```

- Use this TSM command to create the **device class** for the NEO device.:
 - `def devc neoc devtype=lto libr=neo format=drive`
- Use these TSM commands to create the **stagepool** for the NEO device and update the stagepool so that the backups go straight to tape.:
 - `def stgpool neop classname maxscratch=100 dataformat=native`
 - `update stgpool backuppool nextstgpool=neop`

Display the new device class and stagepool with the following **commands**:

 - `q devc`
 - `q stgpool`

```
TSM:SD34107W2K8>
q devc
ANR2017I Administrator SERVER_CONSOLE issued command: QUERY DEUCLASS
```

Device Class Name	Device Access Strategy	Storage Pool Count	Device Type	Format	Est/Max Capacity (MB)	Mount Limit
DISK	Random	3				
NEOC	Sequential	0	LTO	DRIVE		DRIVES

```
TSM:SD34107W2K8>
```

```
TSM:SD34107W2K8>
update stgpool backuppool nextstgpool=neop
ANR2017I Administrator SERVER_CONSOLE issued command: UPDATE STGPOOL backuppool
nextstgpool=neop
ANR2202I Storage pool BACKUPPOOL updated.
TSM:SD34107W2K8>
```

Storage Management Server for Windows - Version 6, Release 3, Level 3.0

```
TSM:SD34107W2K8>
q stgpool
ANR2017I Administrator SERVER_CONSOLE issued command: QUERY STGPOOL
```

Storage Pool Name	Device Class Name	Estimated Capacity	Pct Util	Pct Migr	High Mig Pct	Low Mig Pct	Next Storage Pool
ARCHIVEPOOL	DISK	0.0 M	0.0	0.0	90	70	
BACKUPPOOL	DISK	0.0 M	0.0	0.0	90	70	NEOP
NEOP	NEOC	0.0 M	0.0	0.0	90	70	
SPACEMPOOL	DISK	0.0 M	0.0	0.0	90	70	

- Use this TSM command to permit the NEO tape library to **label and check-in** the media so that the tapes can be used in it:

- label libv neo search=yes labelsource=barc overwrite=yes checkin=scr

Display the tape medias in the NEO:

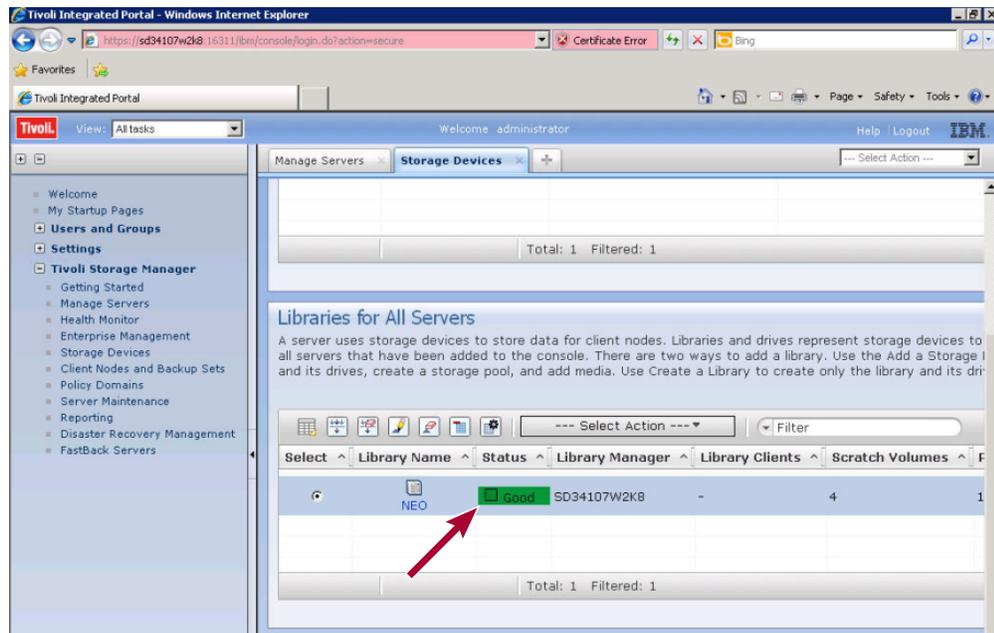
- q libv

```
TSM:SD34107W2K8>
q libv
ANR2017I Administrator SERVER_CONSOLE issued command: QUERY LIBVOLUME
```

Library Name	Volume Name	Status	Owner	Last Use	Home Element	Device Type
NEO	AAB068L5	Scratch			32	
NEO	AAB210L5	Scratch			36	
NEO	0U0011L6	Scratch			35	
NEO	0U0015L6	Scratch			33	
NEO	PH5503L5	Scratch			34	

Verifying the device in Tivoli Admin Center

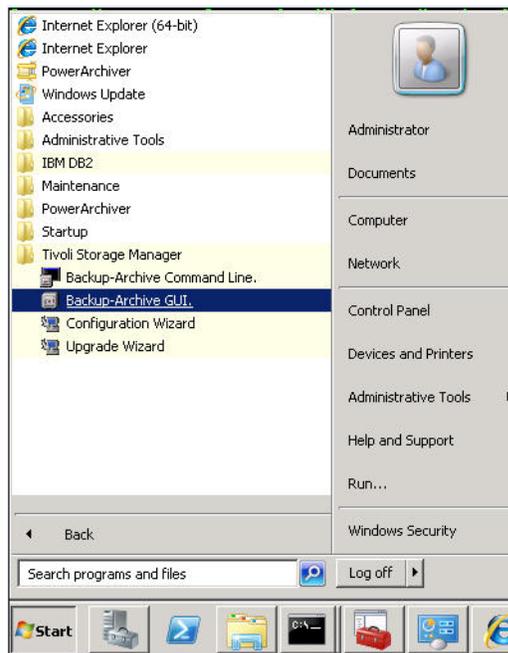
Login to Tivoli Admin Center and verify the new library device is shown with a status of **Good**.



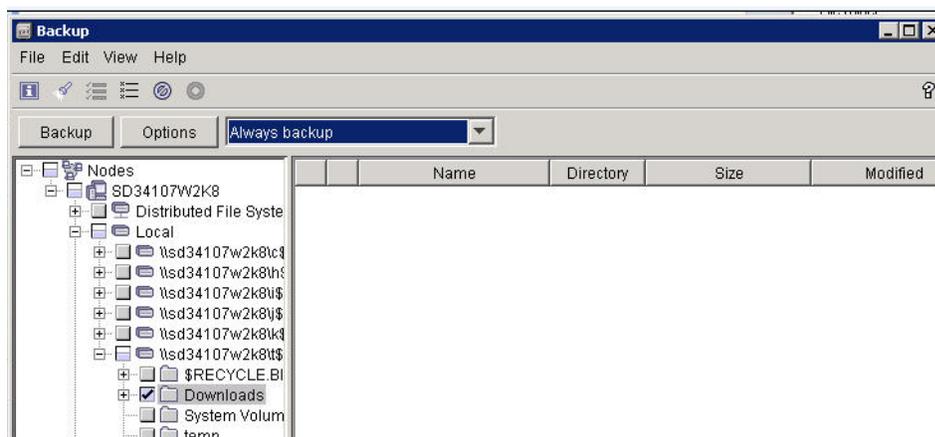
Creating a backup job

Use the TSM Backup-Archive GUI applet to configure a backup job.

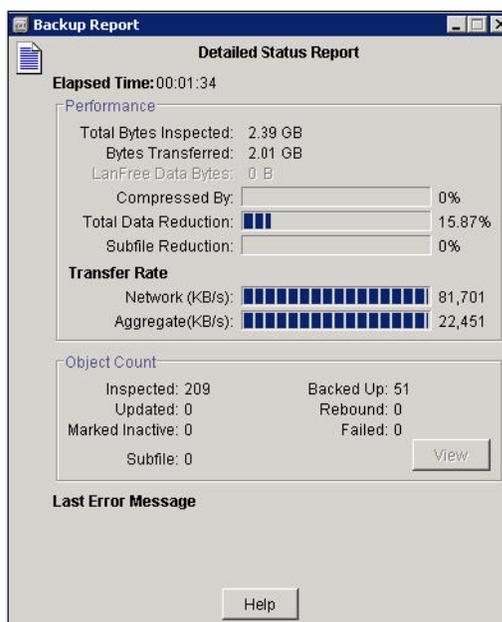
1. In the Tivoli Storage Manager group, select **Backup-Archive GUI**.



2. Select the Backup options, choose the source for backup, and click **Backup**.



The following is the active status report while the backup is running.



The following active backup can be seen from the TSM Console.

```

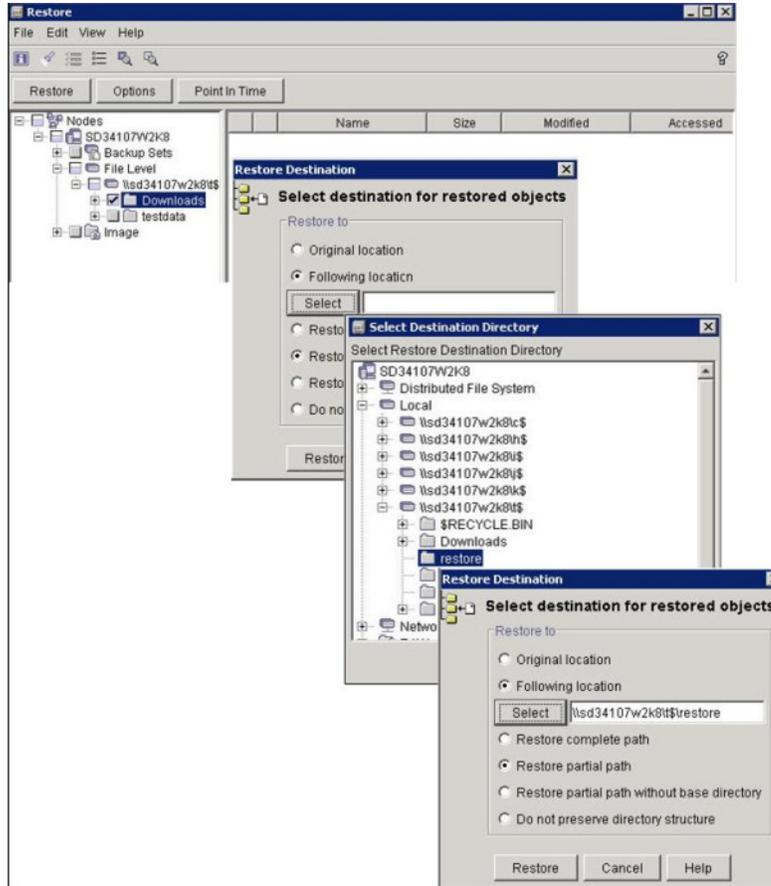
TSM:SD34107W2K8>
ANR8337I LTO volume AAB068L5 mounted in drive DRIVE1 (mt0.0.0.3).
ANR0511I Session 4 opened output volume AAB068L5.
q vol
ANR2017I Administrator SERVER_CONSOLE issued command: QUERY VOLUME
Volume Name           Storage Pool Name     Device Class Name     Estimated Capacity     Pct Util     Volume Status
-----
AAB068L5              NEOP                 NEOC                  2.9 T                 0.2         Filling

TSM:SD34107W2K8>
q mount
ANR2017I Administrator SERVER_CONSOLE issued command: QUERY MOUNT
ANR8330I LTO volume AAB068L5 is mounted R/W in drive DRIVE1 (mt0.0.0.3),
status: IN USE.
ANR8334I          1 matches found.
TSM:SD34107W2K8>
    
```

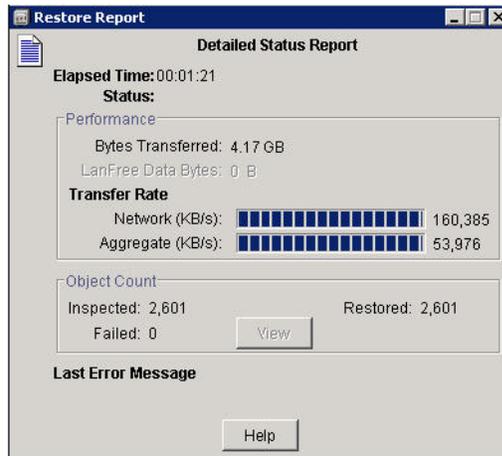
Creating a restore job

Use the TSM Backup-Archive GUI applet to configure a restore job.

1. Use the following steps to configure a restore job.
 - a. Select the **source** for recovery.
 - b. Select the second option to restore to an **alternate location**.
 - c. Select the restore **destination**.
 - d. Click **Restore** to start the recovery.



2. Review the output of **Restore Report**:

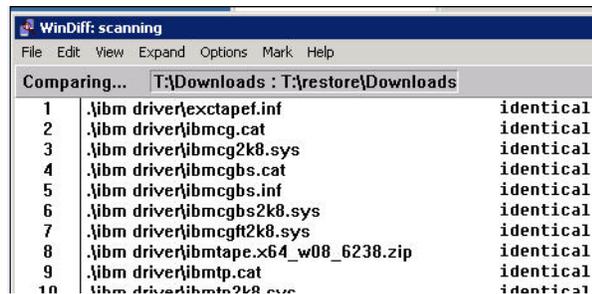
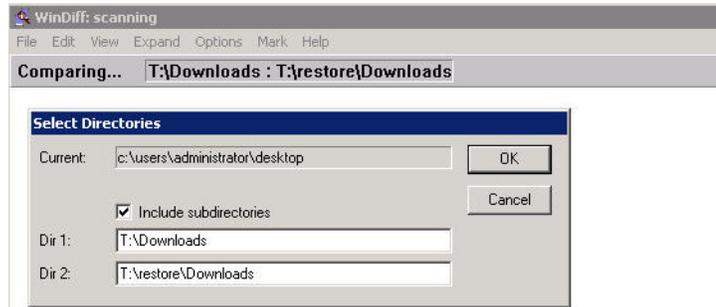


These are an example of the outputs from TSM Console during an active restore:

```

ANR0403I Session 9 ended for node SD34107W2K8 <WinNT>.
ANR1182I Removable volume AAB068L5 is required for a restore request from
session 8.
ANR1183I Initial determination of removable volumes required for a restore
request from session 8 is complete. Additional volumes may still be required.
ANR0510I Session 8 opened input volume AAB068L5.
ANR0514I Session 8 closed volume AAB068L5.
ANR0403I Session 8 ended for node SD34107W2K8 <WinNT>.
    
```

3. Run **WinDiff** to verify the data is **consistent**.



Additional TSM Console outputs

You can use the TSM console to get further details of the devices:

- q drive f=d
- q libr f=d

```

ISM:SD34107W2K0>
q drive f=d
ANR2017I Administrator SERVER_CONSOLE issued command: QUERY DRIVE f=d

      Library Name: NEO
      Drive Name: DRIVE1
      Device Type: LTO
      On-Line: Yes
      Read Formats: ULTRIUM6C,ULTRIUM6,ULTRIUM5C,ULTRIUM5,ULTRIUM4C,ULTRIUM4
      Write Formats: ULTRIUM6C,ULTRIUM6,ULTRIUM5C,ULTRIUM5
      Element: 576
      Drive State: LOADED
      Volume Name: AAB068L5
      Allocated to:
      WWN: 50050763120D1DB7
      Serial Number: 1068005183
      Last Update by (administrator): SERVER_CONSOLE
      Last Update Date/Time: 10/17/2013 16:32:21
      Cleaning Frequency (Gigabytes/ASNEEDED/NONE): NONE

ISM:SD34107W2K0>
q libr f=d
ANR2017I Administrator SERVER_CONSOLE issued command: QUERY LIBRARY f=d

      Library Name: NEO
      Library Type: SCSI
      ACS Id:
      Private Category:
      Scratch Category:
      WORM Scratch Category:
      External Manager:
      RSM Media Type:
      Shared: No
      LanFree:
      ObeyMountRetention:
      Primary Library Manager:
      WWN: 00900D0716920056
      Serial Number: 2B84100086
      AutoLabel: No
      Reset Drives: No
      Relabel Scratch: No
      ZosMedia:
      Last Update by (administrator): SERVER_CONSOLE
      Last Update Date/Time: 10/17/2013 16:29:47
  
```

Use TSM Console to get further details of the paths for both NEO library and LTO-6 tape drive.

- `q path f=d`

```
TSM:SD34107W2K8>
q path f=d
ANR2017I Administrator SERVER_CONSOLE issued command: QUERY PATH f=d

      Source Name: SD34107W2K8
      Source Type: SERVER
      Destination Name: NEO
      Destination Type: LIBRARY
      Library:
      Node Name:
      Device: 1b0.1.0.3
      External Manager:
      ZOS Media Server:
      Comm. Method:
      LUN:
      Initiator: 0
      Directory:
      On-Line: Yes
Last Update by (administrator): SERVER_CONSOLE
      Last Update Date/Time: 10/17/2013 16:29:43

      Source Name: SD34107W2K8
      Source Type: SERVER
      Destination Name: DRIVE1
      Destination Type: DRIVE
      Library: NEO
      Node Name:
      Device: mt0.0.0.3
      External Manager:
      ZOS Media Server:
      Comm. Method:
      LUN:
      Initiator: 0
      Directory:
      On-Line: Yes
Last Update by (administrator): SERVER_CONSOLE
      Last Update Date/Time: 10/17/2013 16:32:21

TSM:SD34107W2K8>
```