Setting Up the Dell™ DR Series System on HP Data Protector® 7.0

Dell Engineering
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Table of contents

Executive summary 4

1 Installing and configuring the DR Series system 5

2 Setting up HP Data Protector 13

2.1 Backing up in the Windows environment 13

2.2 Backing up in the Unix/Linux Environment 16

3 Creating a new backup job with the DR Series system as the target 17

4 Setting up DR-native replication and restore from a target container 23

4.1 Building the replication relationship between DR Series systems 23

4.2 Running a backup for the source DR Series system 24

4.3 Preparing a replication target for restore 27

4.4 Restoring from a target DR Series system 32

5 Setting up the DR Series system cleaner 33

6 Monitoring deduplication, compression, and performance 34

A Creating a storage device for CIFS 35

B Creating a storage device for NFS 37

C User commands 38

Executive summary

This document provides information about how to set up the Dell DR Series system as a backup target for HP Data Protector 7.0.

For additional information, see the DR Series system documentation and other data management application best practices whitepapers for your specific DR Series system at:

http://www.dell.com/powervaultmanuals

Note: The build version and screenshots used in this document may vary slightly, depending on the version of the DR Series system/HP Data Protector software version you are using.

1 Installing and configuring the DR Series system

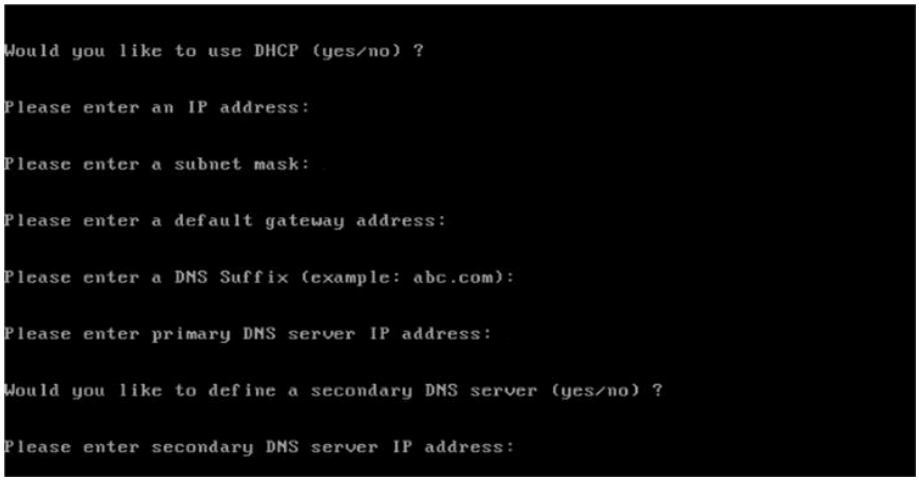
1. Rack and cable the DR Series System, and power it on.
   In the *Dell DR Series System Administrator Guide*, refer to the sections, "iDRAC Connection", "Logging in and Initializing the DR Series System", and "Accessing IDRAC6/Idrac7 Using RACADM" for information about using the iDRAC connection and initializing the appliance.

2. Log on to iDRAC using the default address **192.168.0.120**, or the IP that is assigned to the iDRAC interface. Use user name and password of "**root/calvin**".

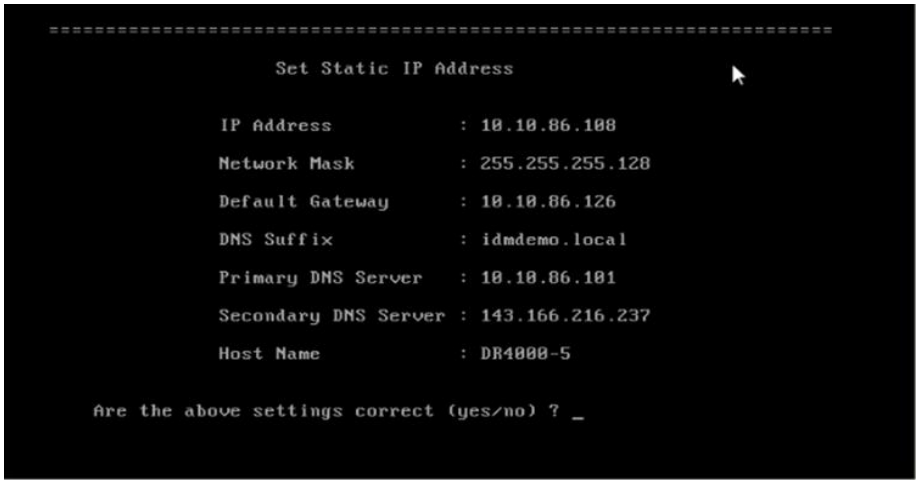
3. Launch the virtual console.

4. When the virtual console is open, log on to the system as the user **administrator** with the password **St0r@ge!** (The "0" in the password is the numeral zero).

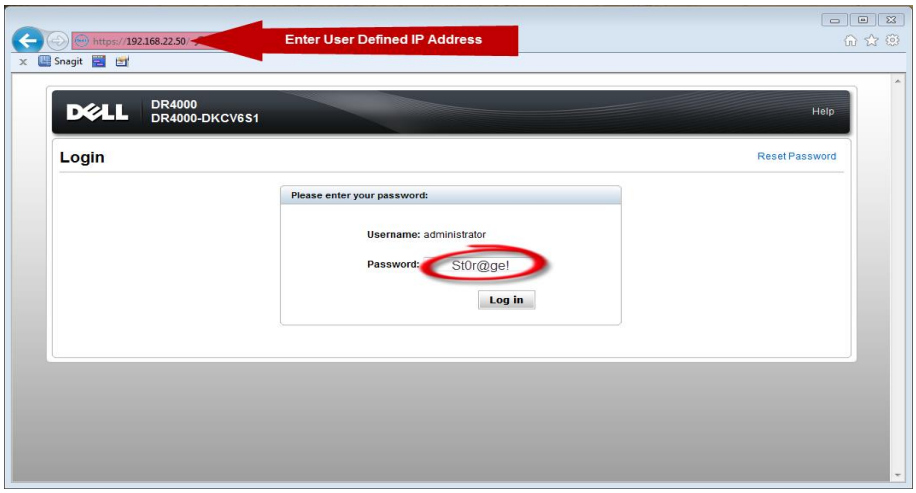
5. Set the user-defined networking preferences.



6. View the summary of preferences and confirm that it is correct.



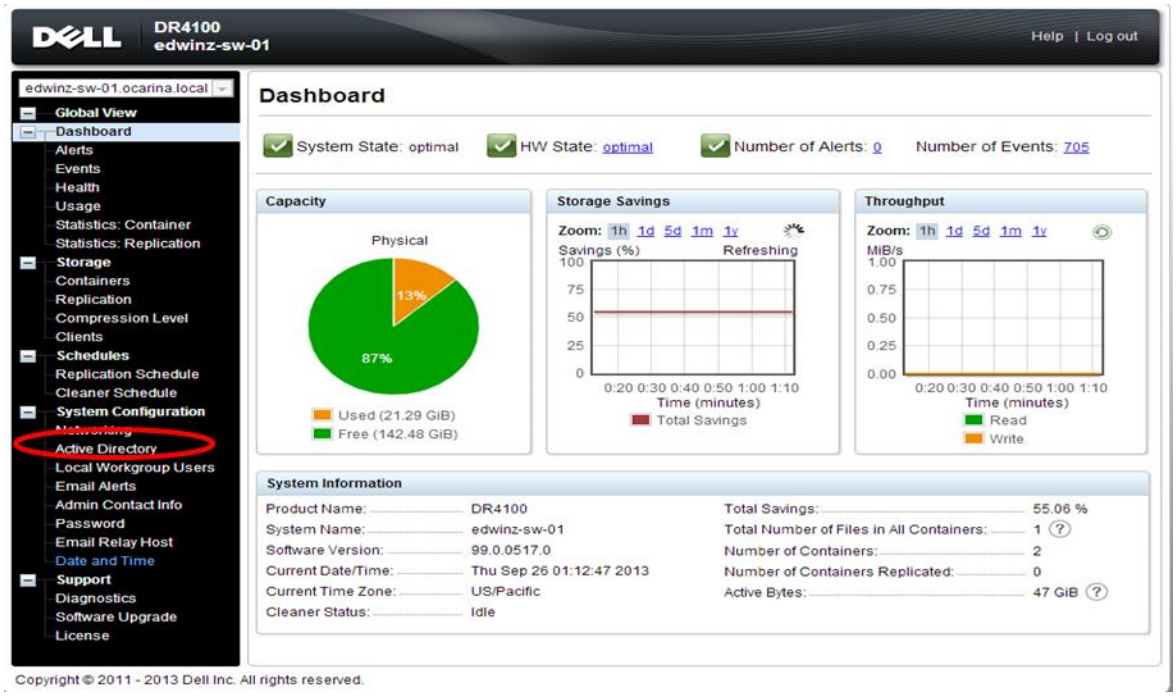
7. Log on to DR Series System administrator console using the IP address with the username **administrator** and password **St0r@ge!** (The "0" in the password is the numeral zero.).



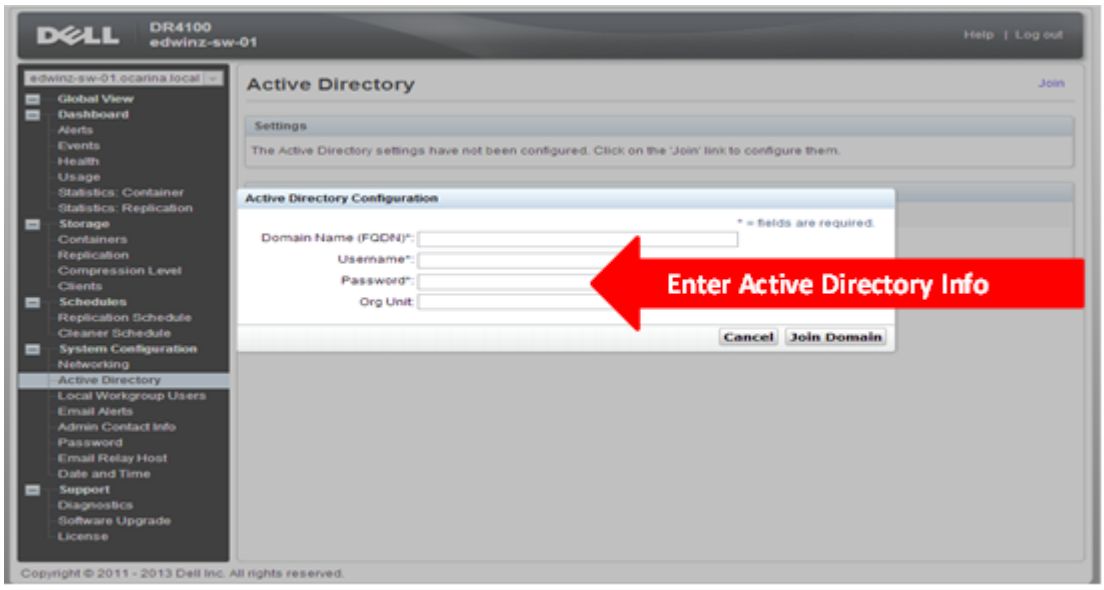
8. Join the DR Series System to Active Directory.

Note: if you do not want to add the DR Series system to Active Directory, see the *DR Series System Owner's Manual* for guest logon instructions.

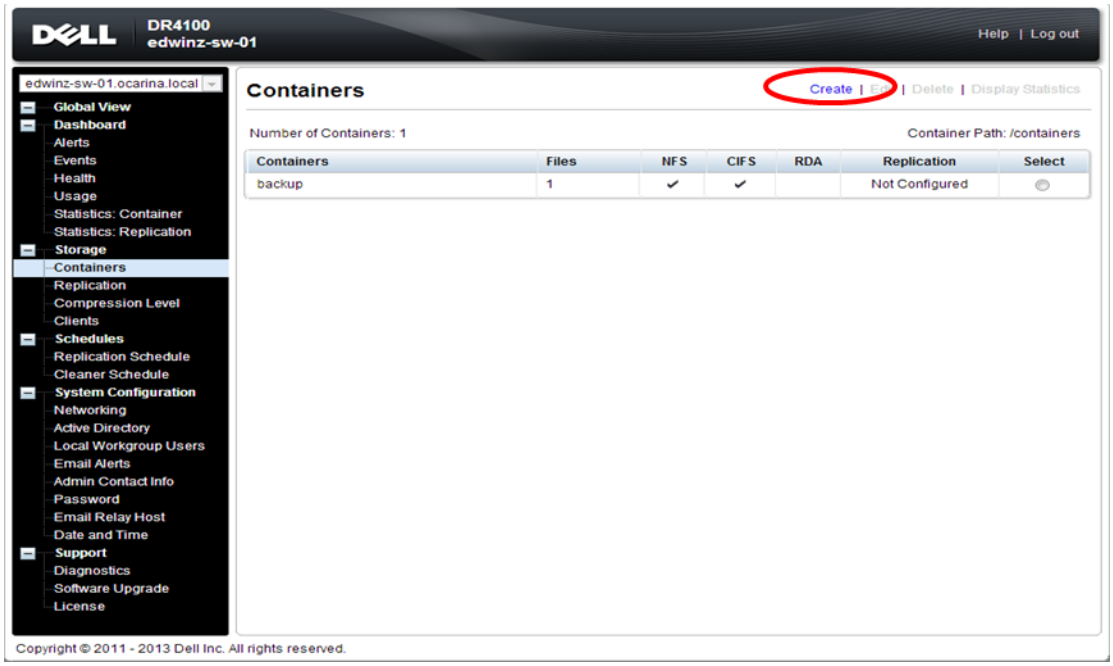
a. Select **Active Directory** from the left navigation area of the DR Series system GUI.



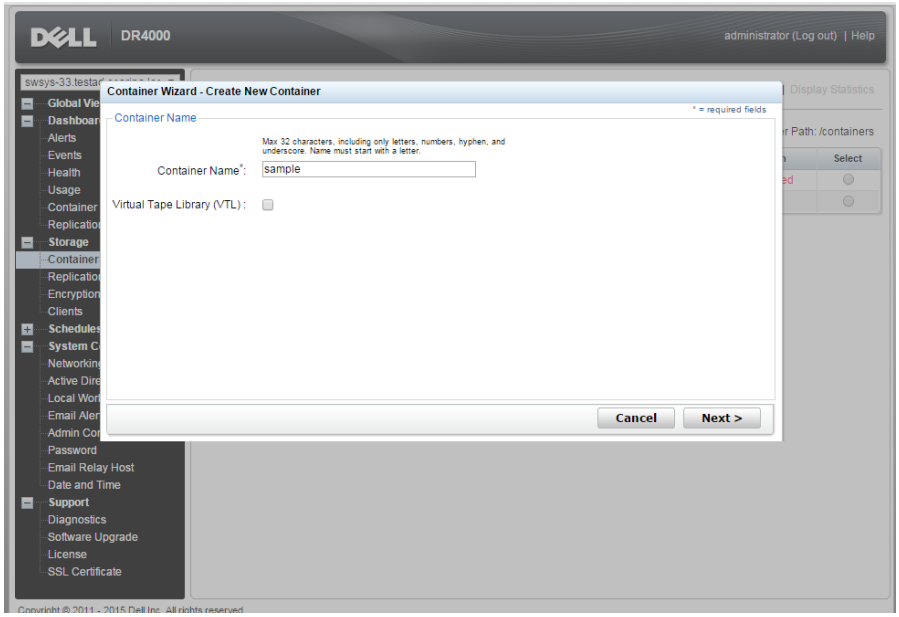
b. Enter your Active Directory credentials.



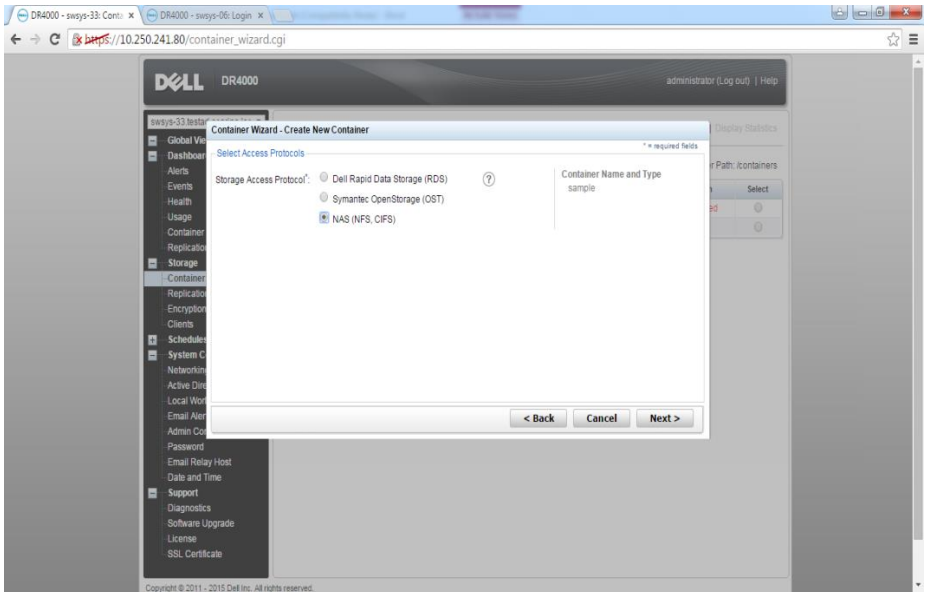
9. You now need to create and mount the container. Select **Containers** in the left navigation area, and then click **Create** at the top of the page.



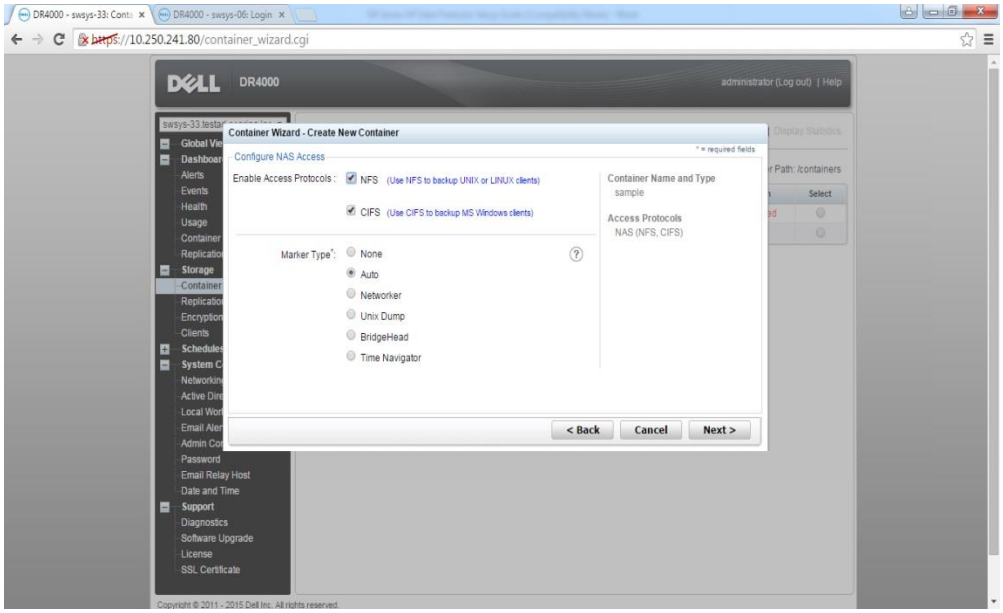
10. Enter a **Container** Name and click **Next**.



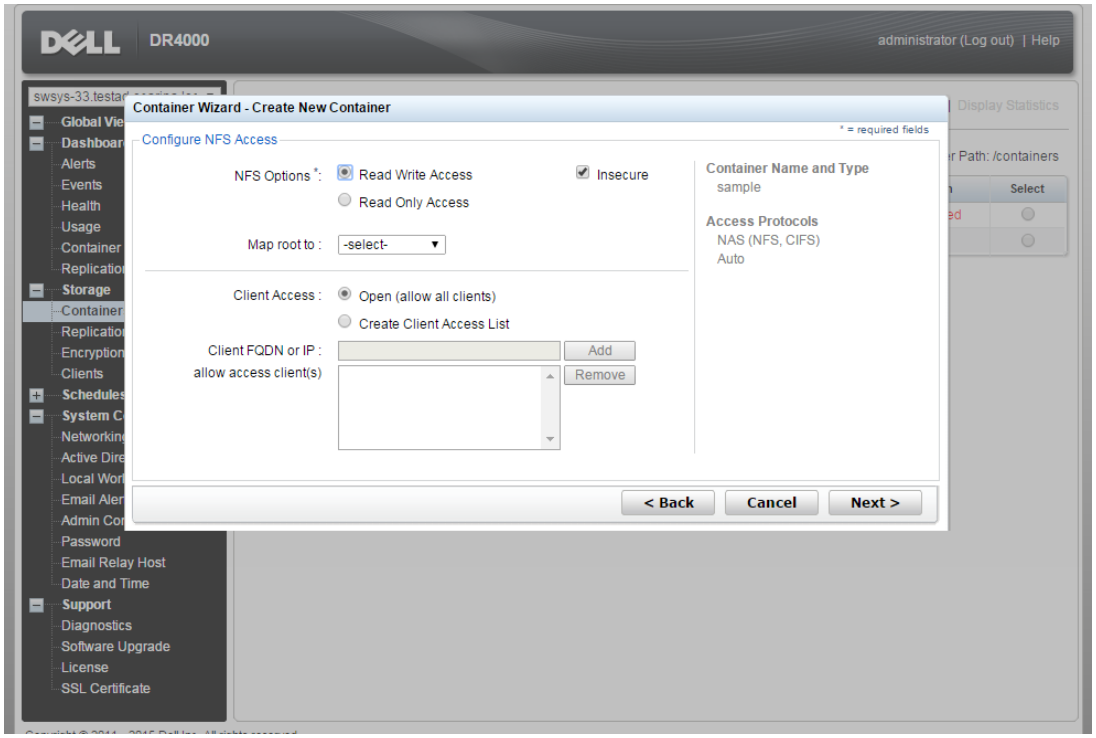
11. Select NAS (NFS, CIFS) and click Next. (HP Data Protector supports both CIFS and NFS protocols.)



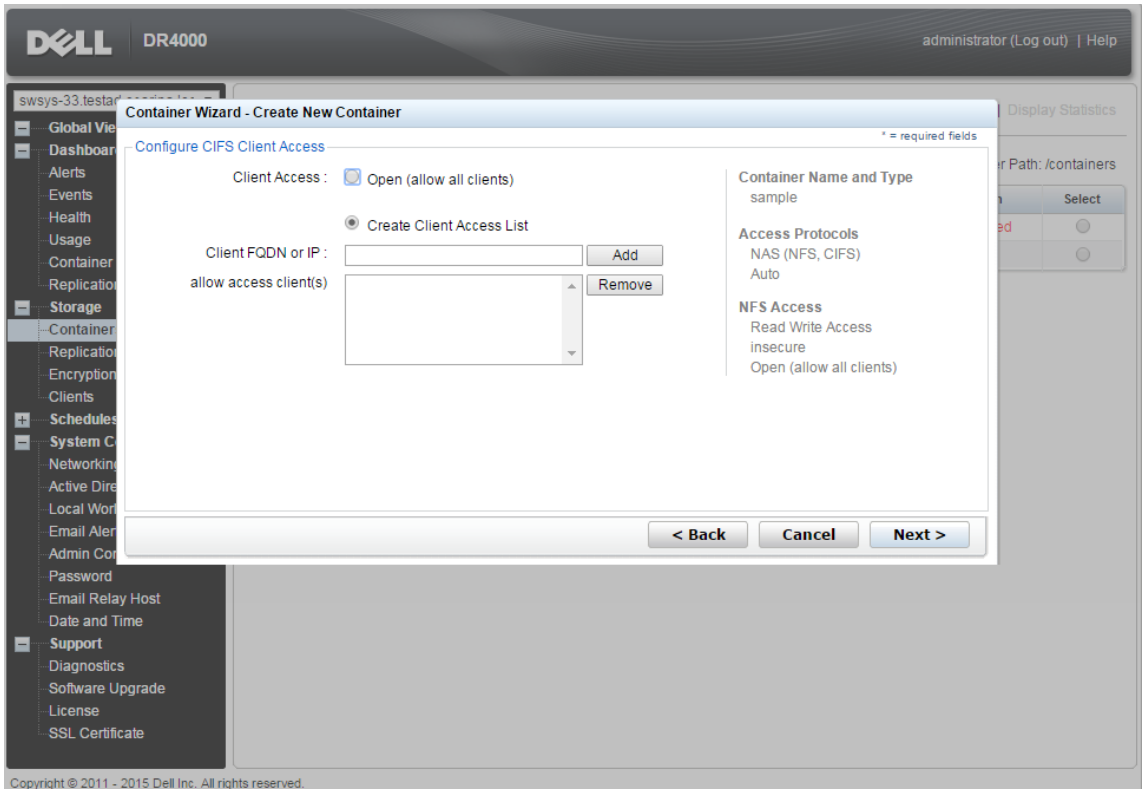
12. Select the NFS/CIFS protocol(s) as appropriate and click **Next**.



13. For NFS, set the client access credentials and click **Next**.

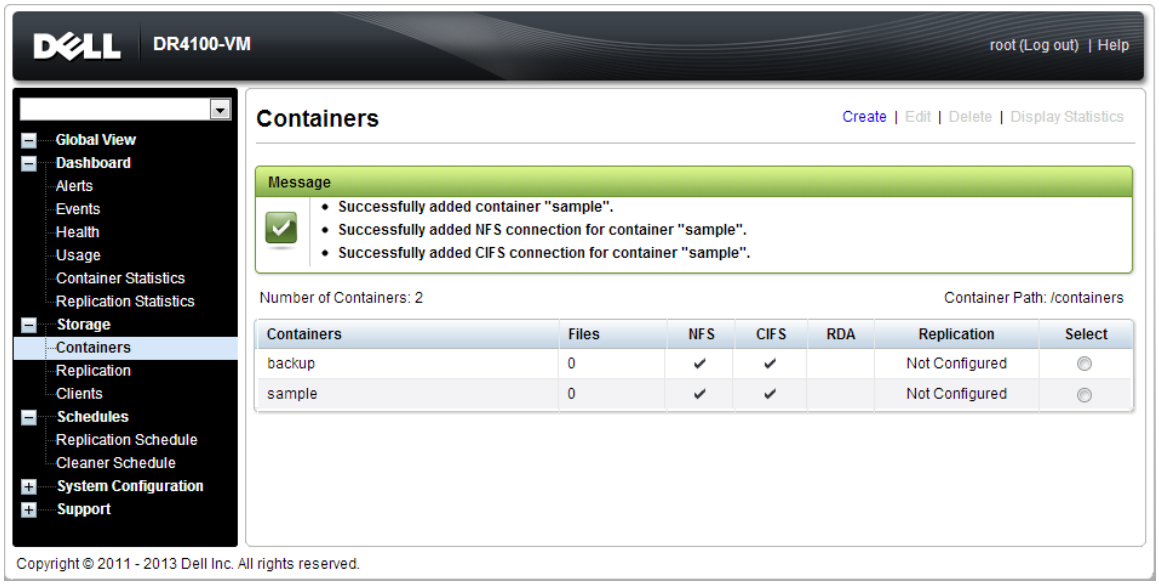


14. For CIFS, set the client access credentials and click **Next**.

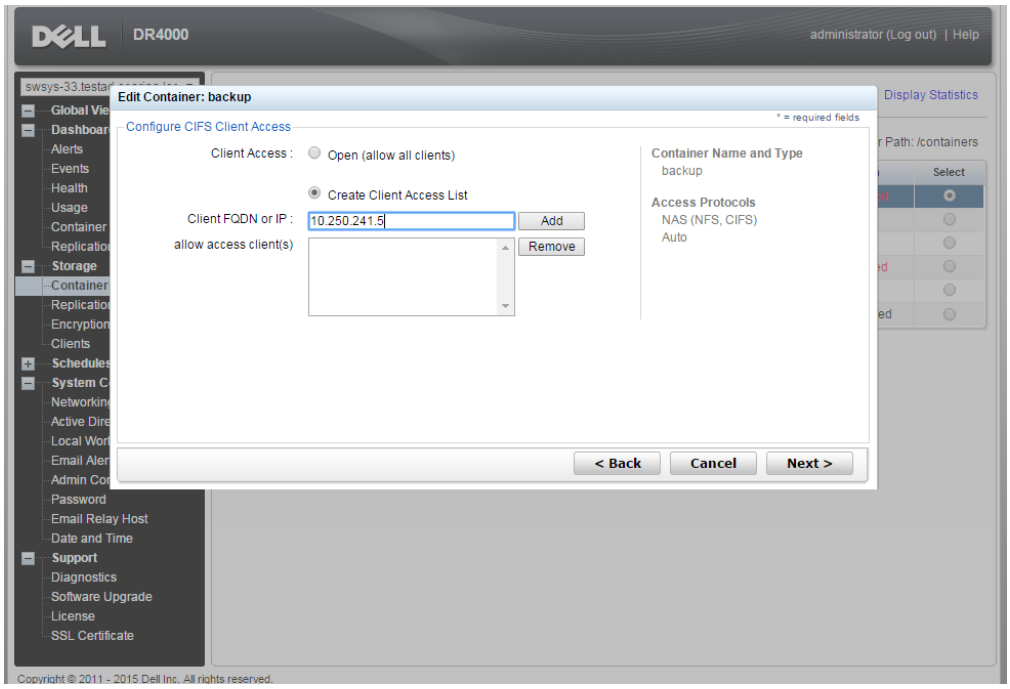


Note: For improved security, Dell recommends adding IP addresses for the following (Not all environments will have all components):
Backup console (HP Data Protector Server, HP Data Protector Clients)

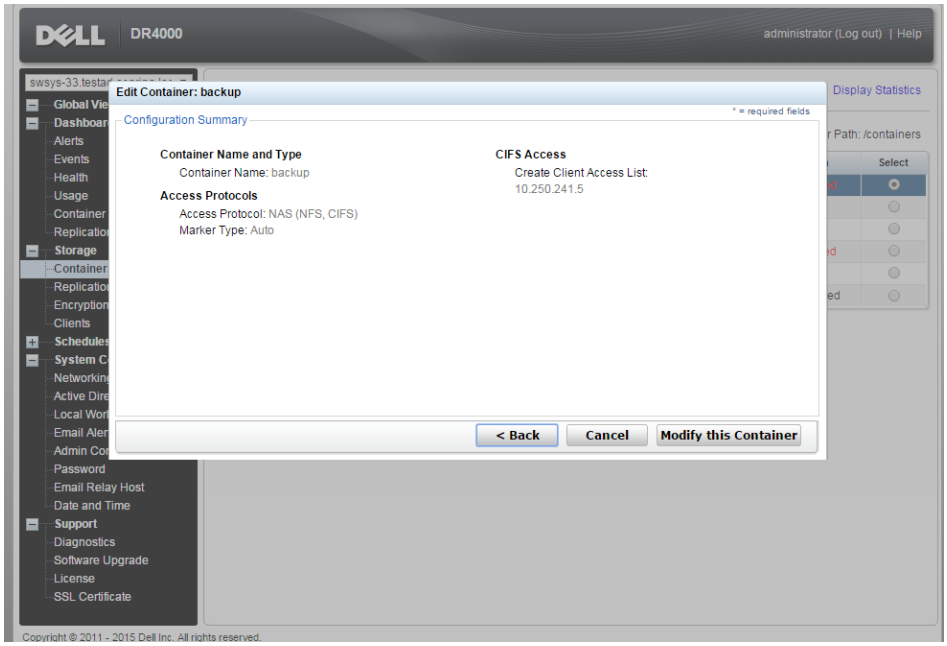
15. Click **Create a New Container**. Confirm that the container is added.



16. Select the Container and click **Edit**. Reconfigure client access permissions if required and click **Next**.



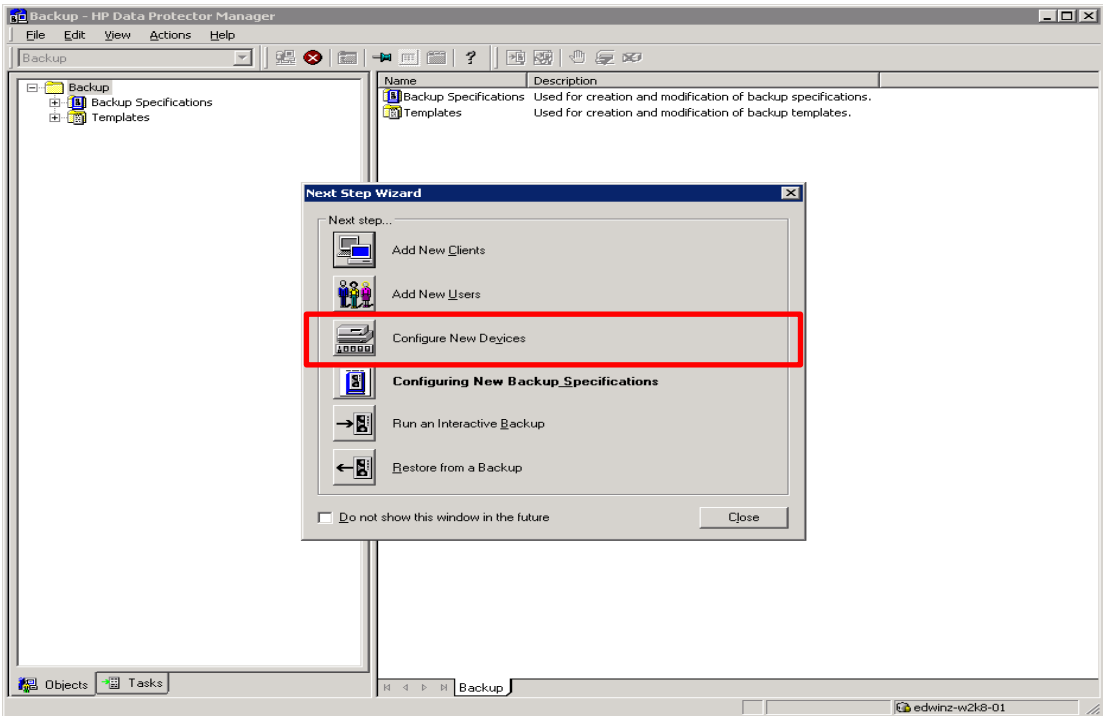
17. Click **Modify this container** to save any changes or click **Cancel** to exit.



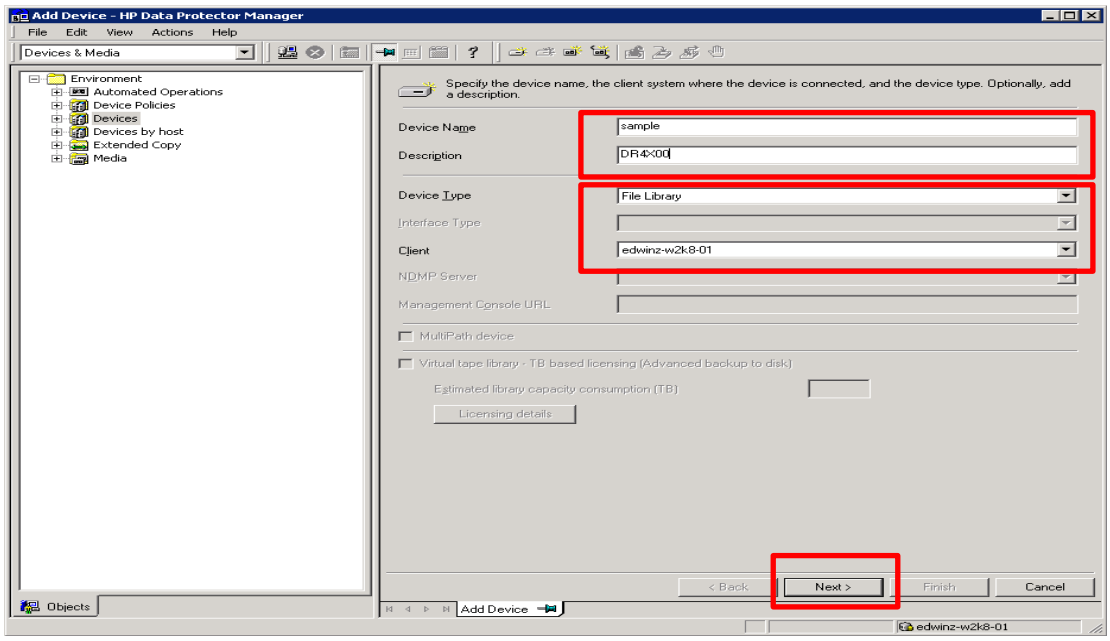
2 Setting up HP Data Protector

2.1 Backing up in the Windows environment

1. Open **HP Data Protector Manager**. Click **Configure New Devices**, which opens the **Devices & Media** menu.

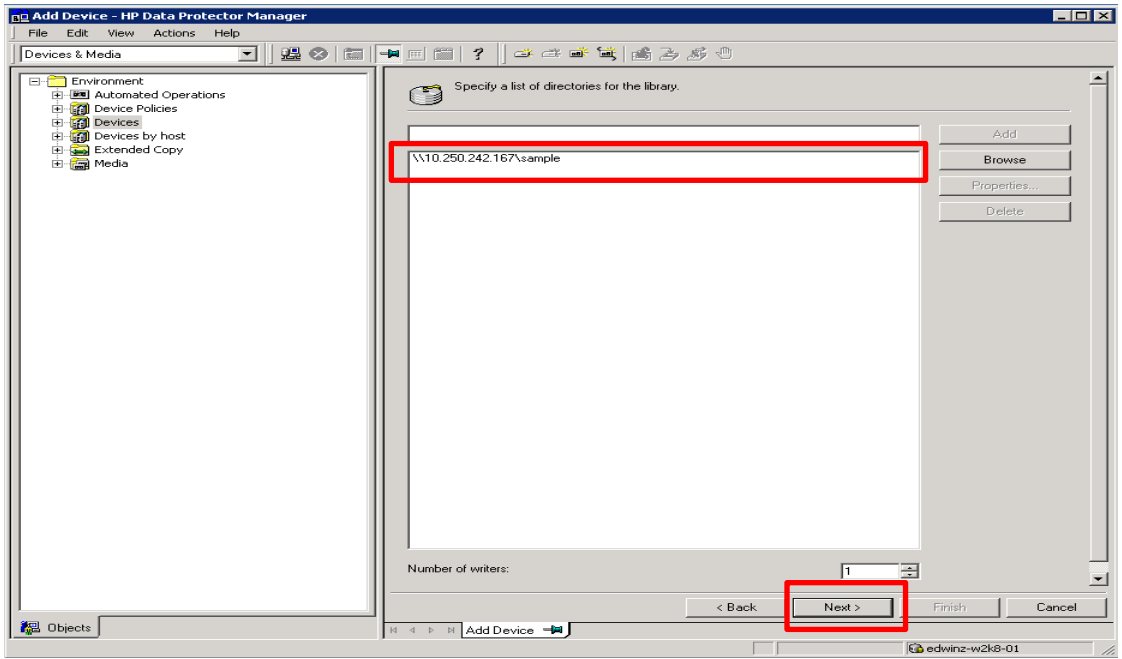


2. Right-click **Devices** and choose **Add Device**. In the next window, specify the **Device Name** and **Description** that identifies the **File Library Device**. Select **File Library** for the **Device Type**, and enter the information for the **Client**. Click **Next**.

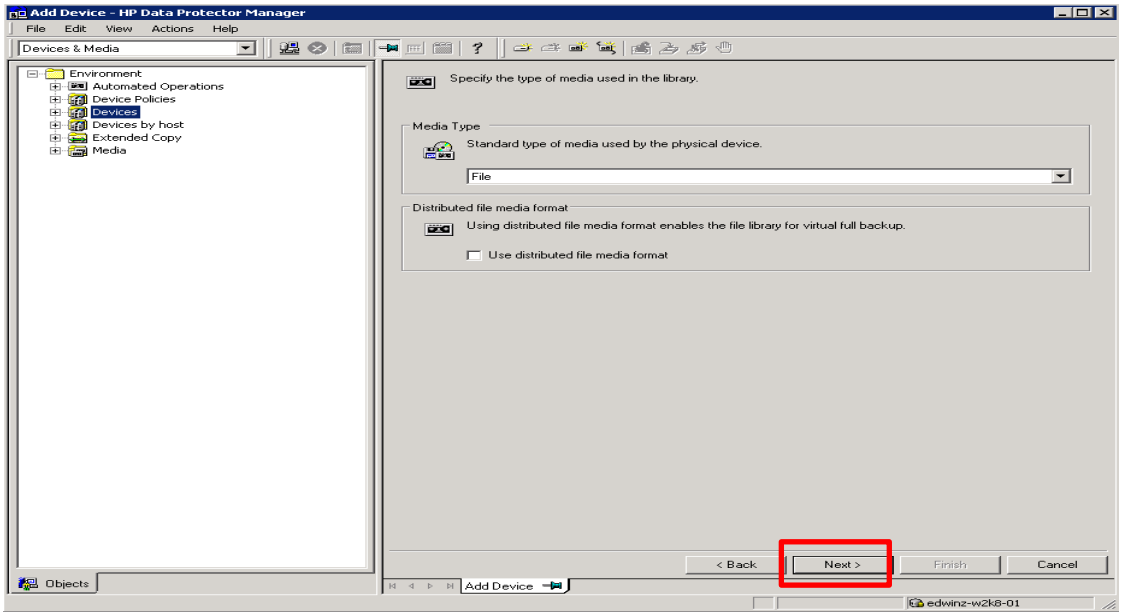


Note: The Windows service account for HP Data Protector requires appropriate permissions to the DR container share for the step below to complete successfully. See **Appendix A** for information about setting up the HP Data Protector service account correctly. This should be done before the next step.

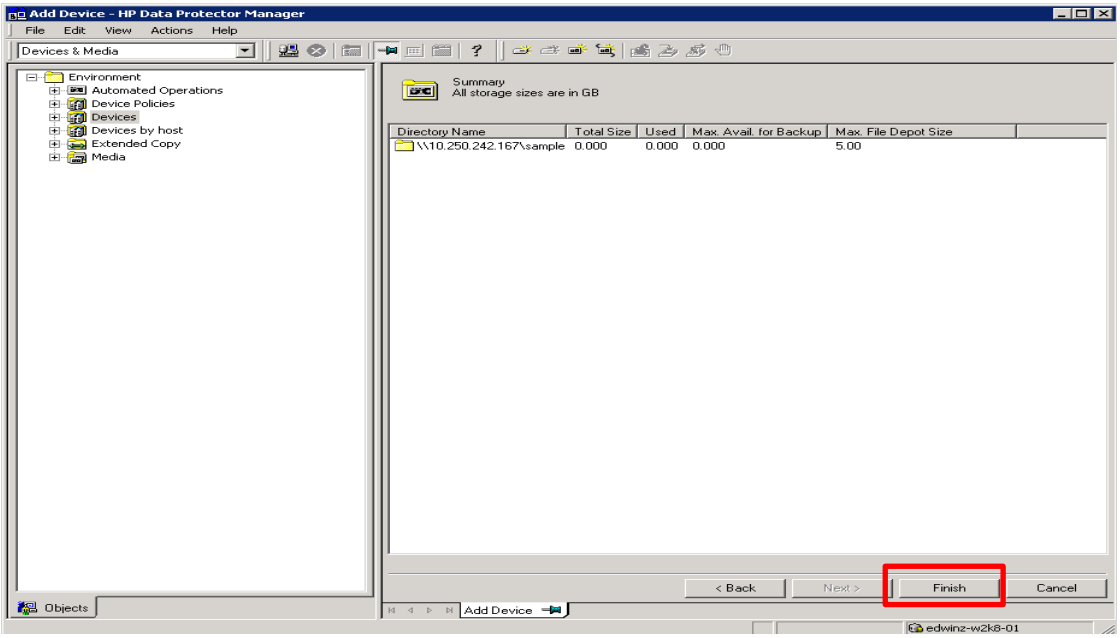
3. The next window asks for the path to the library that is the UNC path to the DR container share. Specify a list of directories for the library. You can also specify the number of writers for the library; it defaults to 1. Click **Properties** to assign proper values to the file library parameters, including **Maximal File Depot Size**. Click **Next**.



4. The **Media Type** default is **File**. Click **Next**.



5. Click **Next**. The **Summary** window shows the total physical storage size of that particular File Library Device on the DR container.



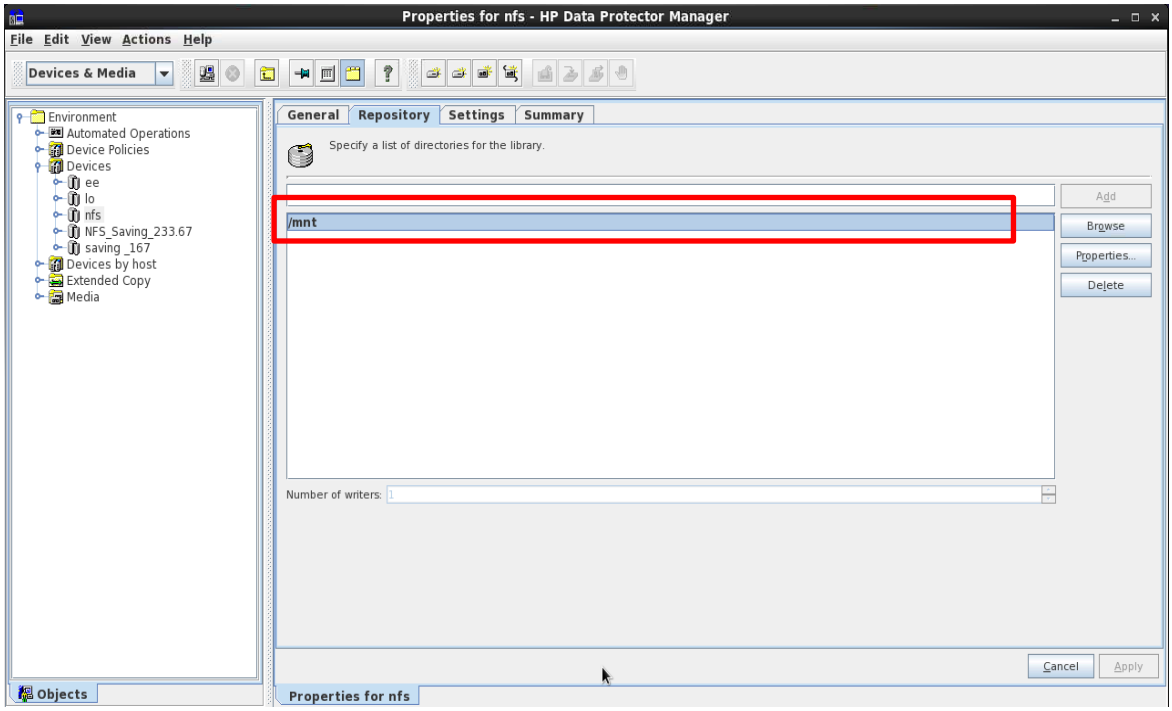
6. Click **Finish**. In the next window, click **Close** to close it.

2.2 Backing up in the Unix/Linux Environment

The procedure for the Unix/Linux environment is similar to the procedure for the Windows environment described in the previous section. One difference is that in **Step#3**, you need to enter the UNIX path of the DR container export instead of a UNC path, as described below.

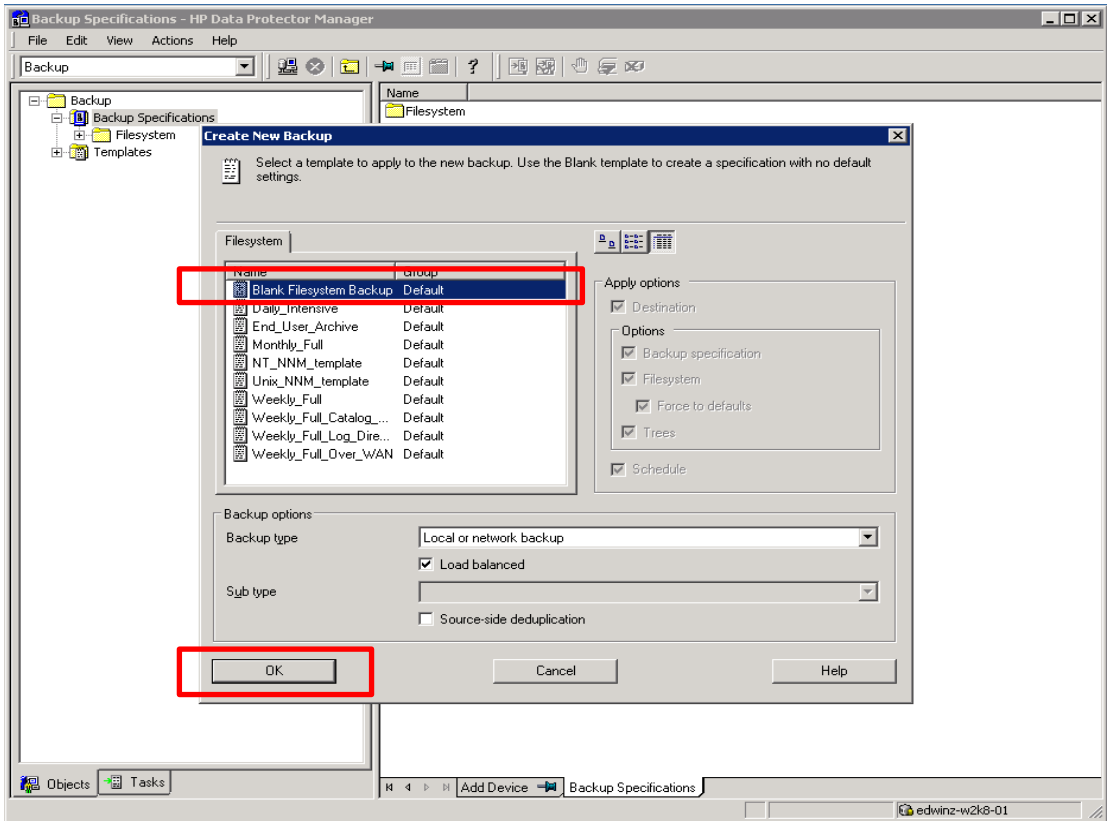
For other details, please refer to the procedure for backing up Windows Environment.

NOTE: Before proceeding with this procedure, make sure that you can mount/verify the NFS share from the UNIX/Linux client system. Please see **Appendix B** for how to mount/verify the NFS share.

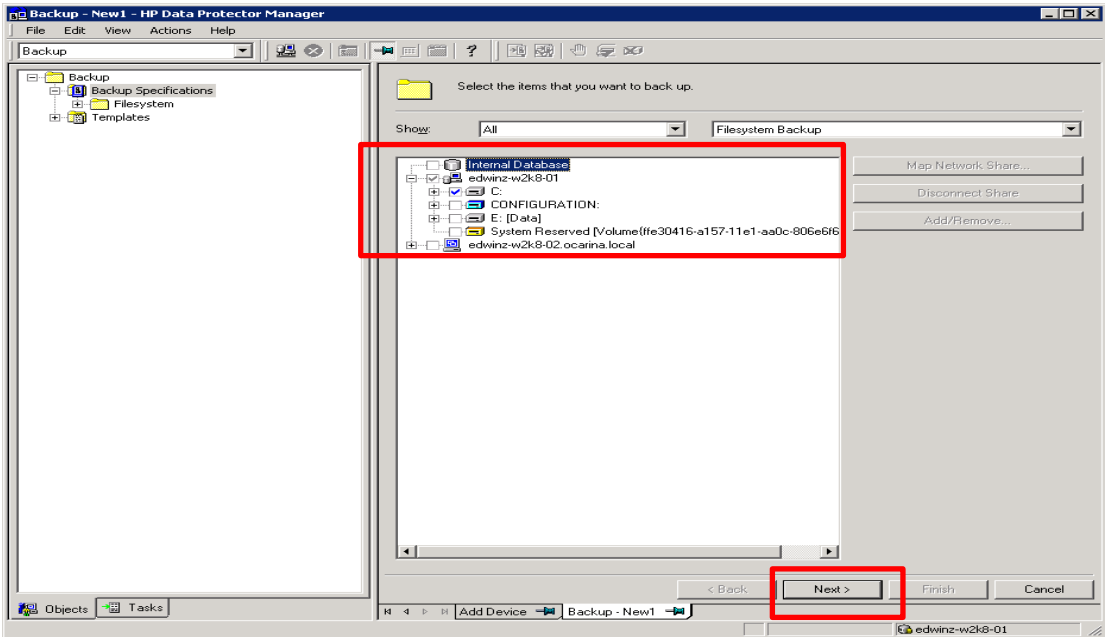


3 Creating a new backup job with the DR Series system as the target

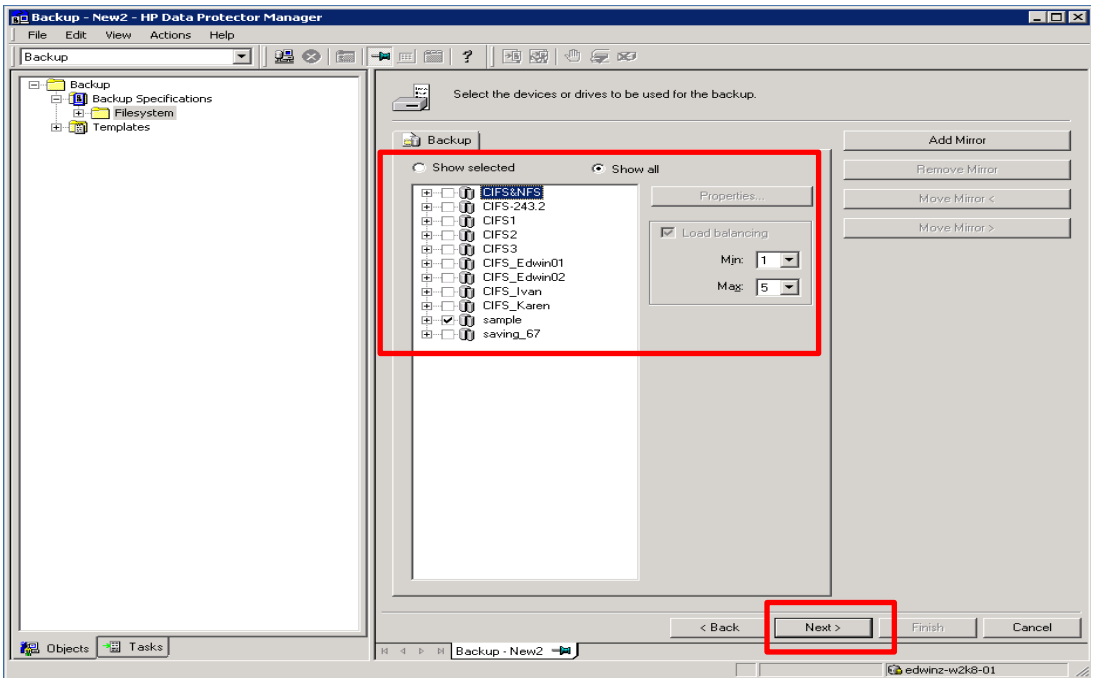
1. In the HP Data Protector Manager, in the **Context List** drop-down menu, click **Backup**. In the **Scoping Pane**, expand **Backup** and then click **Backup Specifications**. In the expanded sub-tree view, right-click the **Filesystem** item and select **Add Backup**.
2. Select the **Blank File system Backup** template and click **OK**.



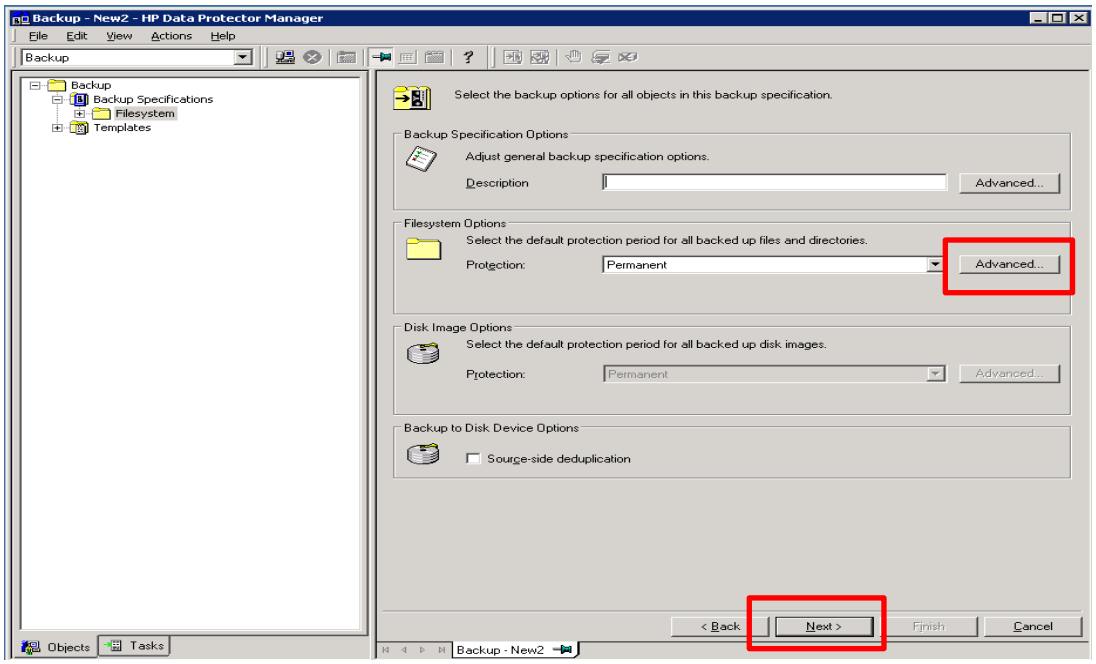
3. Check any source data set that needs to be backed up. In this example, it's the whole local "C:\" drive. Then click **Next**.



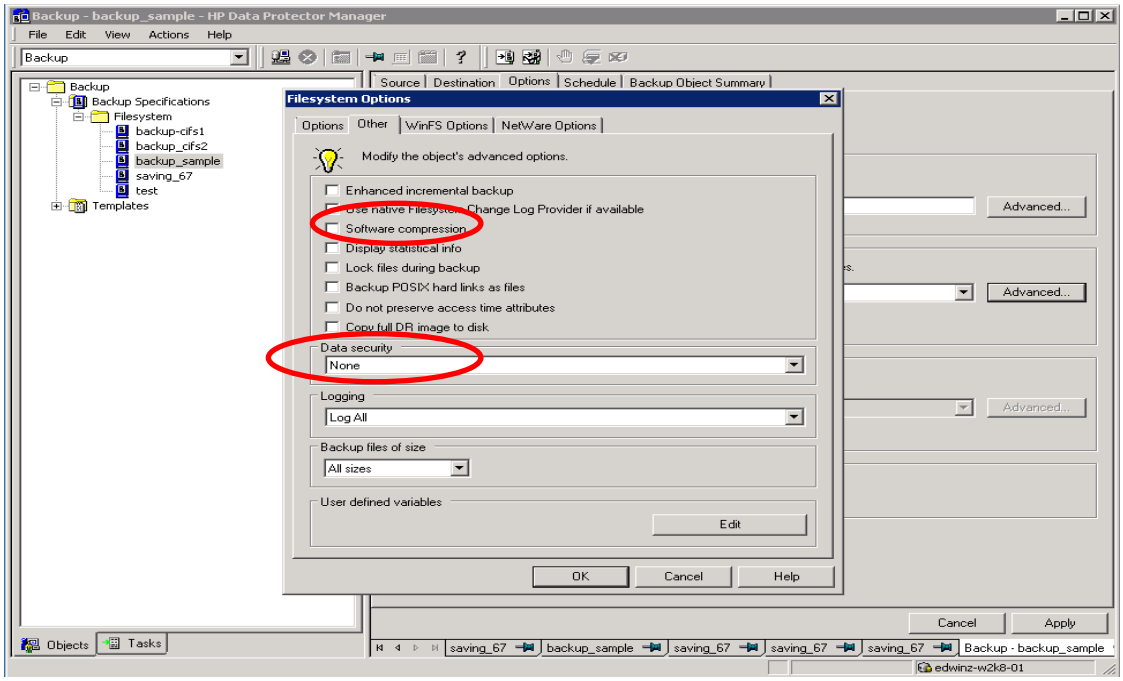
4. Select the devices or drives to be used as the backup target. In this example, it's the DR container share/export created in previous section. Check the **Properties** and define other parameters as needed, and then click **Next**.



5. Check and verify the **Backup Specification Options** using the **Advanced** button. Then, in the **Filesystem Options** section, click **Advanced**.



6. In **Filesystem Options**, click the **Other** tab. Make sure **Software compression** is not selected, and that **Data security** is set to **None**.

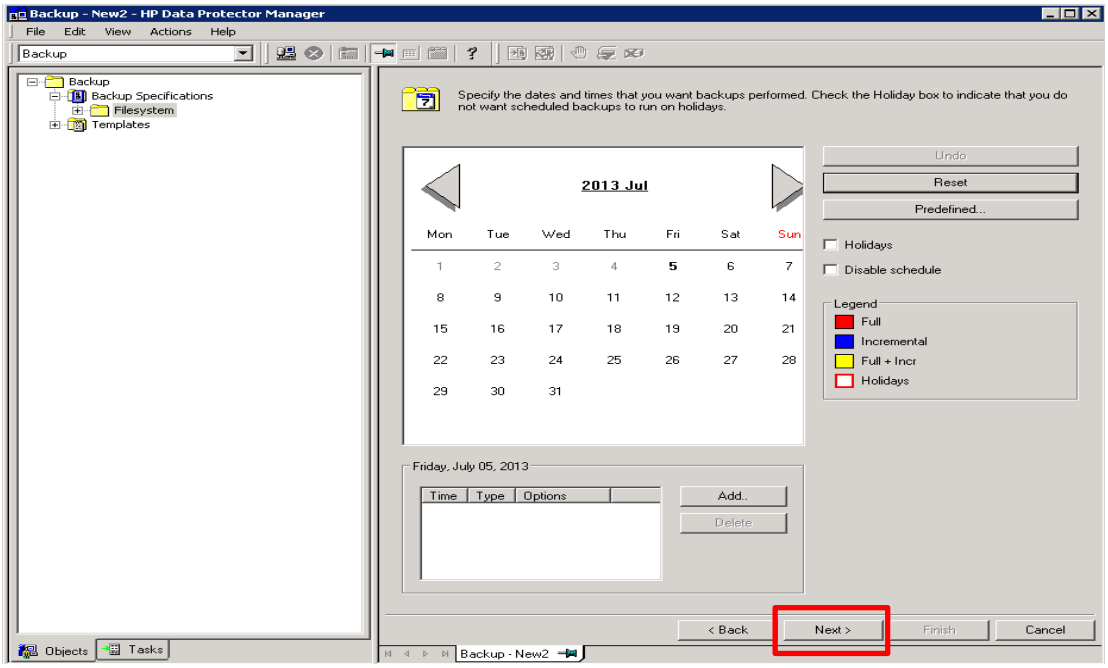


Note: Always disable **Software compression**, as the DR Series system has compression built-in and does not require additional compression on HP Data Protector. In general, additional data compression on backup software will have a negative impact on the total savings of the DR Series system.

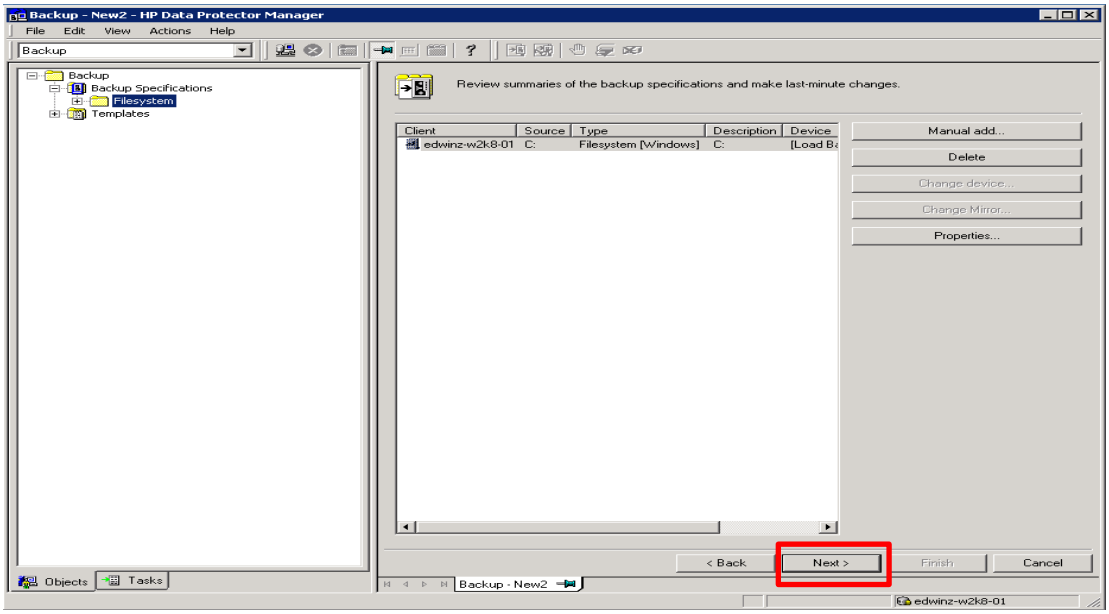
Also, setting **Data security** to **None** is recommended, as enabling encryption before the data stream is sent

to the DR Series system device prevents the data from being able to be deduplicated, which would have a significant negative impact on total savings of the DR Series system.

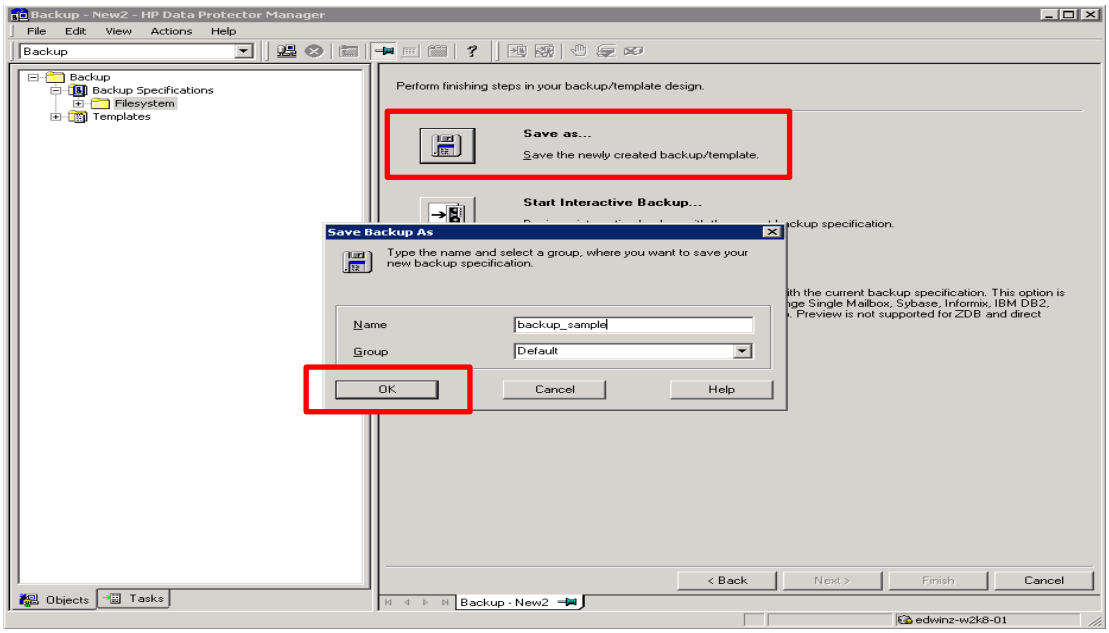
7. Define Backup Job Schedule options and click **Next**.



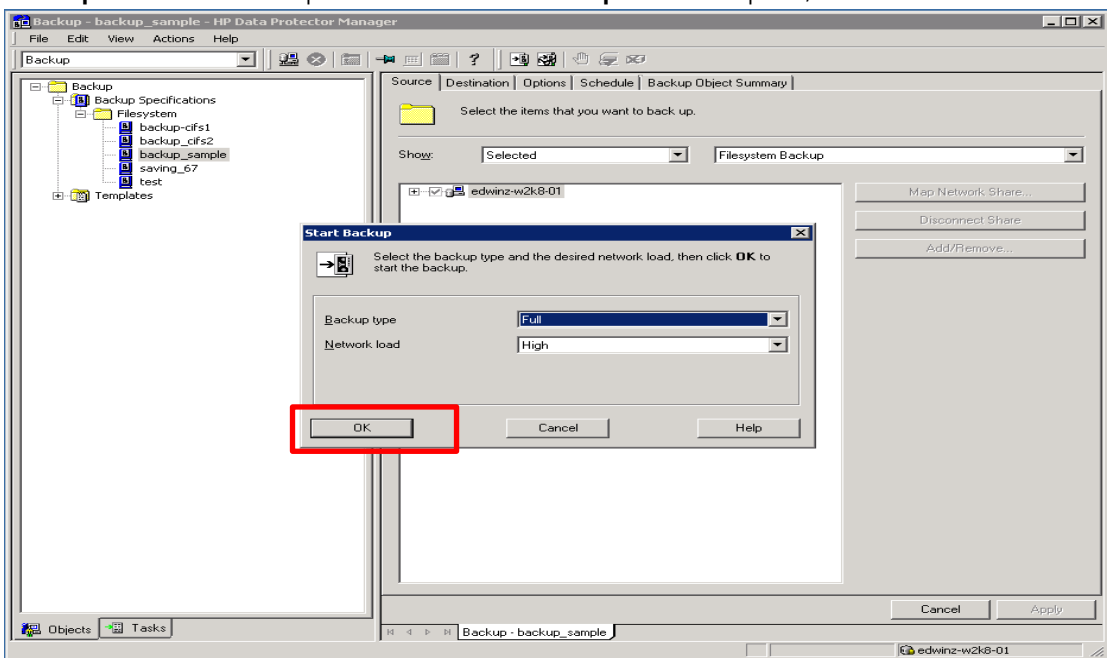
8. Review the Backup Job Summary. Click **Next**.



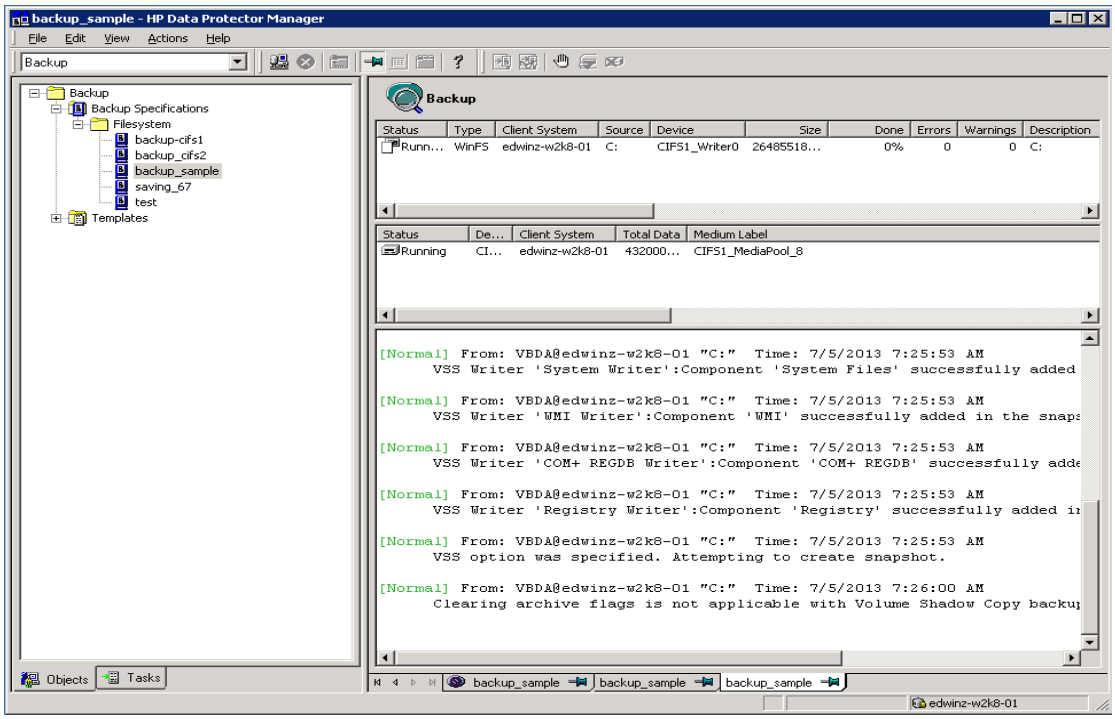
9. Specify a name for the Backup Job. Click **Save As** to save the newly configured backup specification.



10. (This step is **Optional**, or it can be completed when the scheduled backup completes.) Click **Start Backup** to run the backup. When the **Start Backup** window opens, click **OK** to start the backup.



The **Backup** window displays the progress of the backup session. The Session Information window will tell you when the backup is completed.

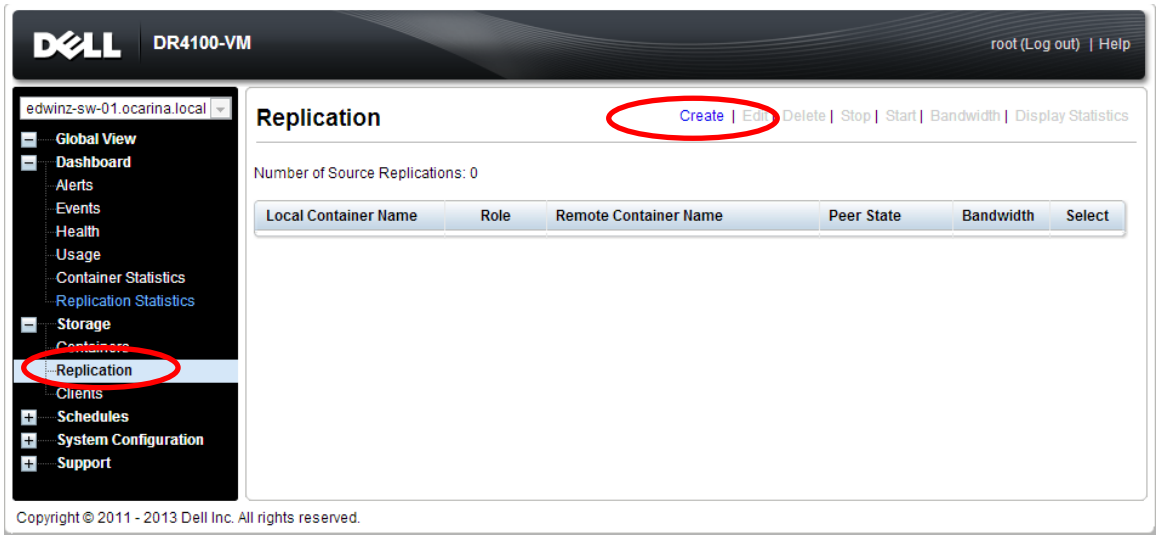

backup_sample - HP Data Protector Manager
File Edit View Actions Help
Backup
Backup
Backup Specifications
Filesystem
backup-cifs1
backup_cifs2
backup_sample
saving_67
test
Templates
Objects
Tasks
Backup
Status Type Client System Source Device Size Done Errors Warnings Description
Runn... WinFS edwinz-w2k8-01 C: CIFS1_Writer0 26485518... 0% 0 0 C:
Status De... Client System Total Data Medium Label
Running CI... edwinz-w2k8-01 432000... CIFS1_MediaPool_8
[Normal] From: VBDA@edwinz-w2k8-01 "C:" Time: 7/5/2013 7:25:53 AM
VSS Writer 'System Writer':Component 'System Files' successfully added
[Normal] From: VBDA@edwinz-w2k8-01 "C:" Time: 7/5/2013 7:25:53 AM
VSS Writer 'WMI Writer':Component 'WMI' successfully added in the snaps
[Normal] From: VBDA@edwinz-w2k8-01 "C:" Time: 7/5/2013 7:25:53 AM
VSS Writer 'COM+ REGDB Writer':Component 'COM+ REGDB' successfully adde
[Normal] From: VBDA@edwinz-w2k8-01 "C:" Time: 7/5/2013 7:25:53 AM
VSS Writer 'Registry Writer':Component 'Registry' successfully added i
[Normal] From: VBDA@edwinz-w2k8-01 "C:" Time: 7/5/2013 7:25:53 AM
VSS option was specified. Attempting to create snapshot.
[Normal] From: VBDA@edwinz-w2k8-01 "C:" Time: 7/5/2013 7:26:00 AM
Clearing archive flags is not applicable with Volume Shadow Copy backu
backup_sample
backup_sample
backup_sample
edwinz-w2k8-01

4 Setting up DR-native replication and restore from a target container

4.1 Building the replication relationship between DR Series systems

This procedure assumes that on both the source and target DR Series system, a container has already been created for each of them. In this example, this container is called "backup". Also, the target container should not be used for anything else and should be empty, with the same **Connection Type** as the source container.

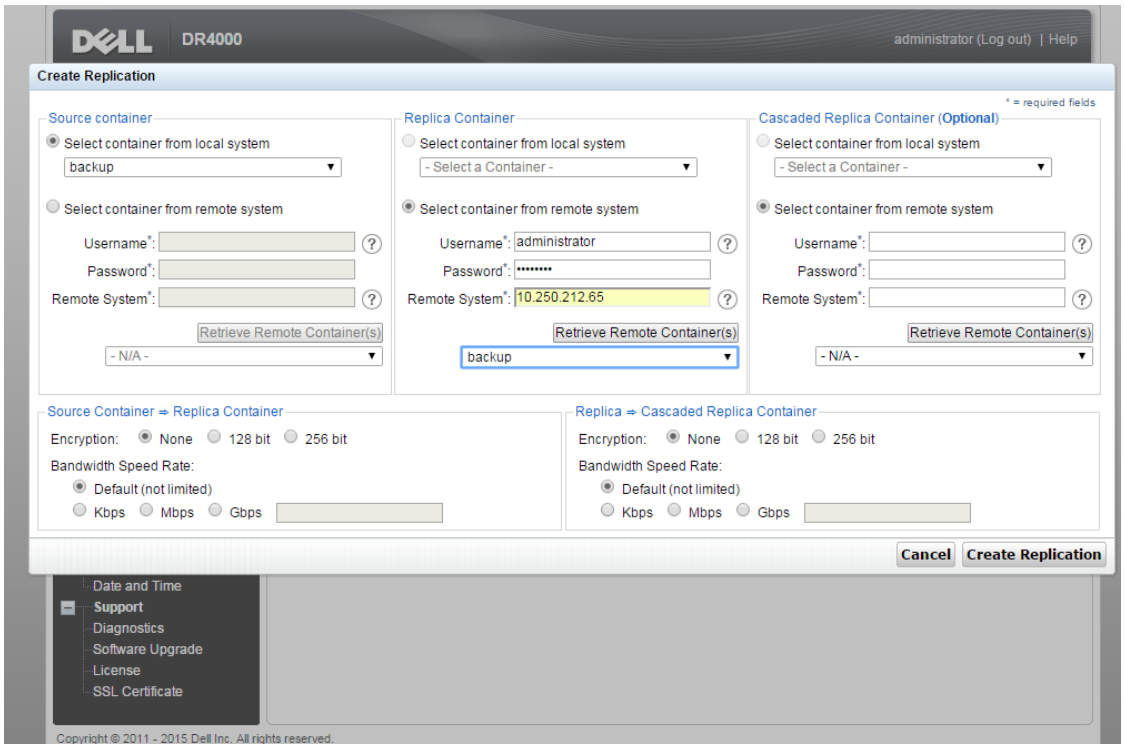
1. On the source DR Series system, select **Replication** in the left navigation area, and then click **Create**.



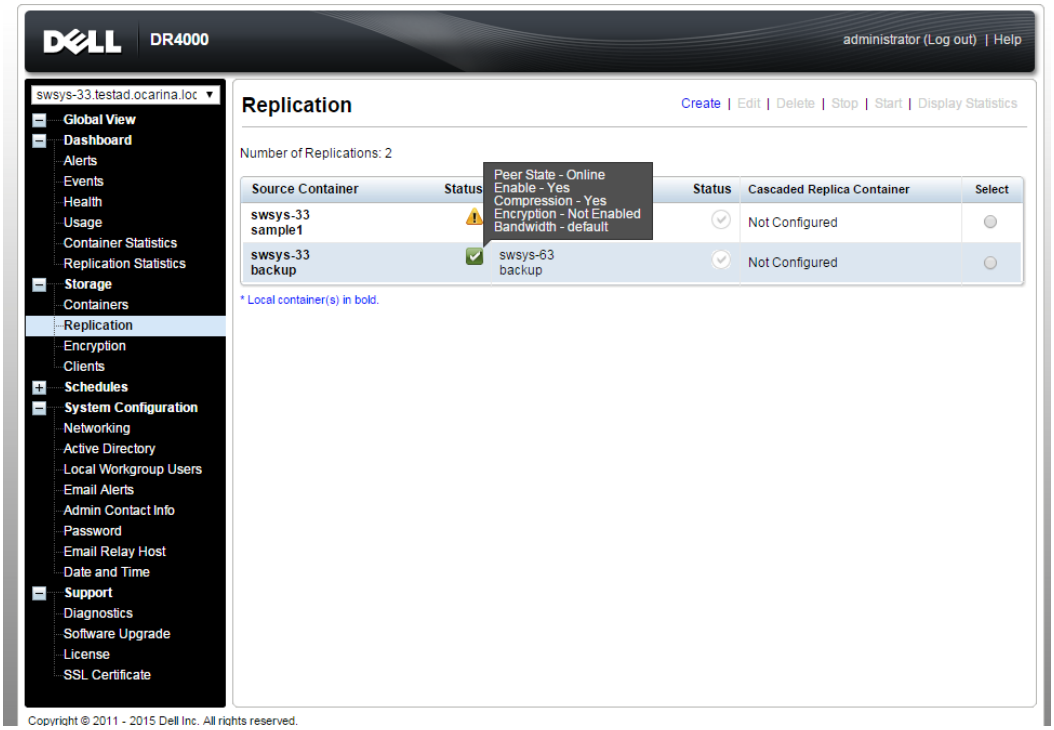
2. In the Create Replication dialog box, select a local container as the source container.
3. Select a Container on the Remote system.

> **Note**: Enter credentials to authenticate to the target DR Series system (default is "Administrator/St0r@ge!), and then click **Retrieve Containers** and select the target container in the list.

4. Click **Create Replication**.



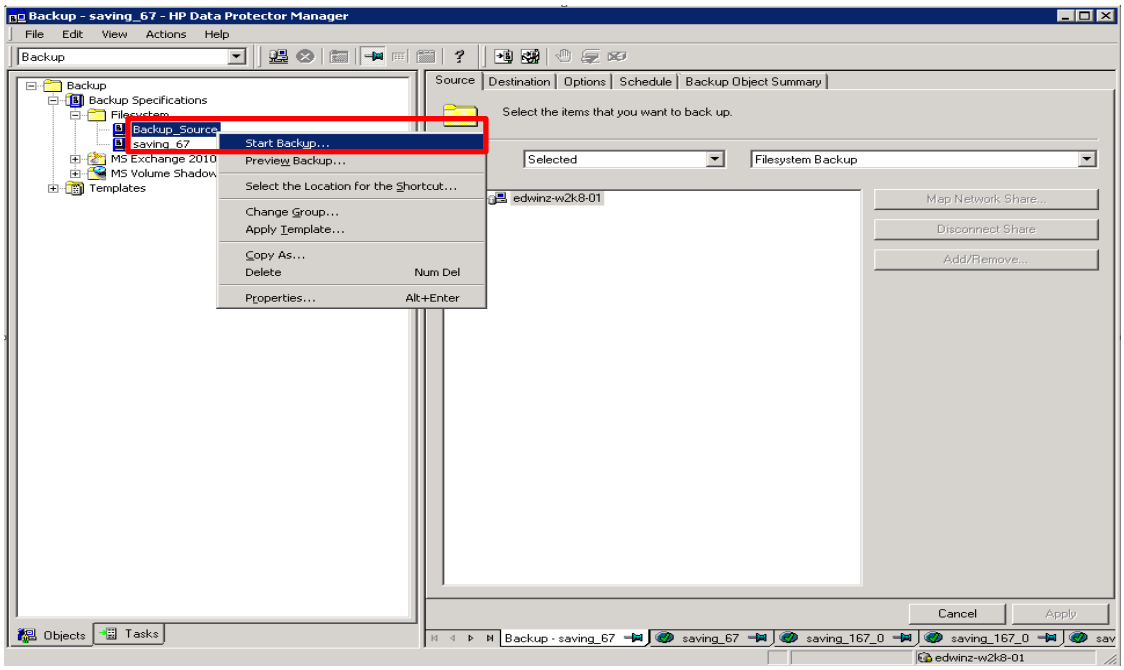
5. Verify that the replication session is created which will display the **Peer State** as **Online**.
6. Monitor the replication progress under **Replication Statistics**, and make sure the replication **Status** is **INSYNC.**



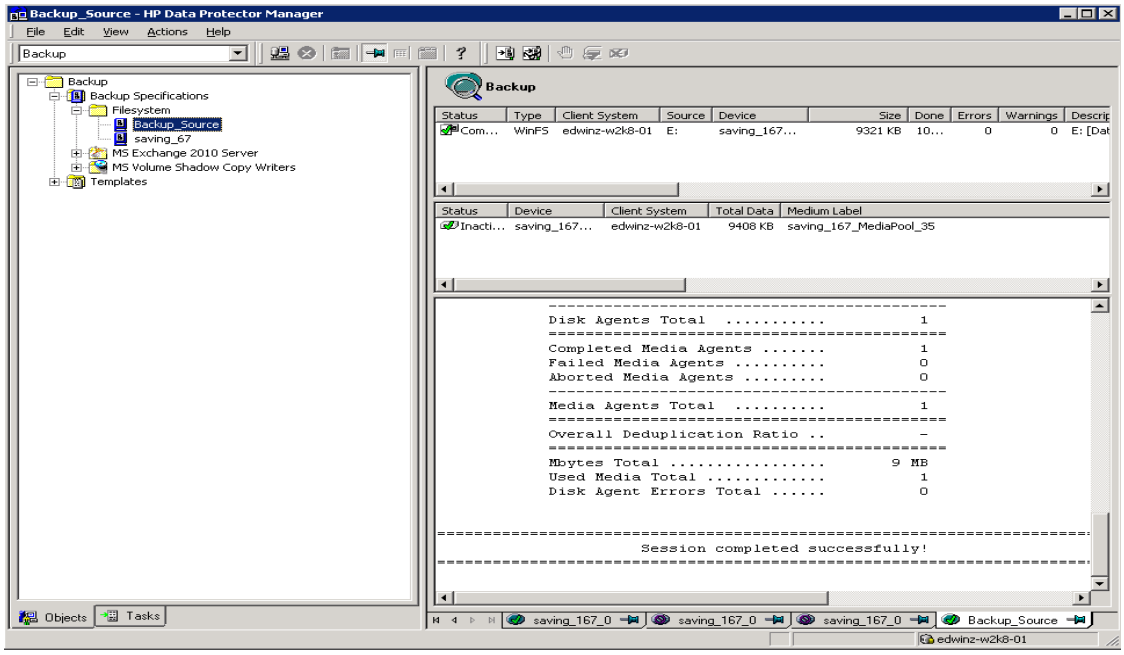
4.2 Running a backup for the source DR Series system

This procedure is optional, that is, it is only for when there is no backup data on the source DR container.

1. Add both a source DR Series system and target DR Series system as devices on HP Data Protector. Then, create a New Backup Job with the source DR Series system as the target.

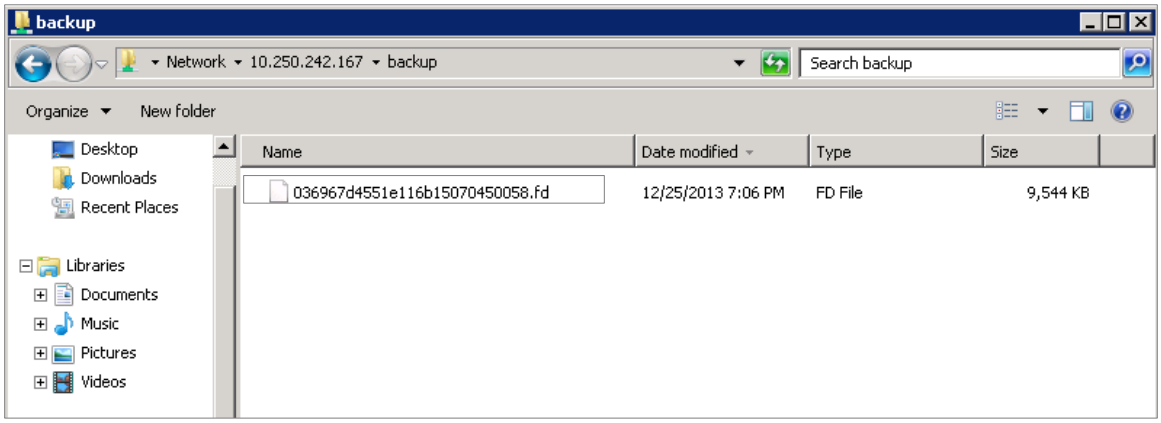


2. In the **Start Backup** window, click **OK** to start the backup using the appropriate settings. Monitor job status.

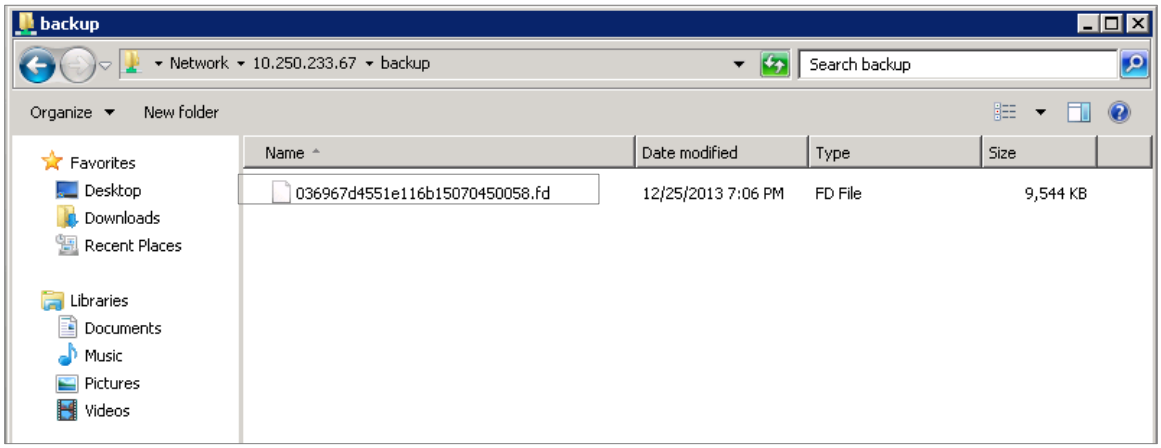


3. When the backup job is completed, HP Data Protector creates backup files using the suffix **'.fd'** on the source DR, and the **'.fd'** files will be replicated to the target DR Series system.

Source DR

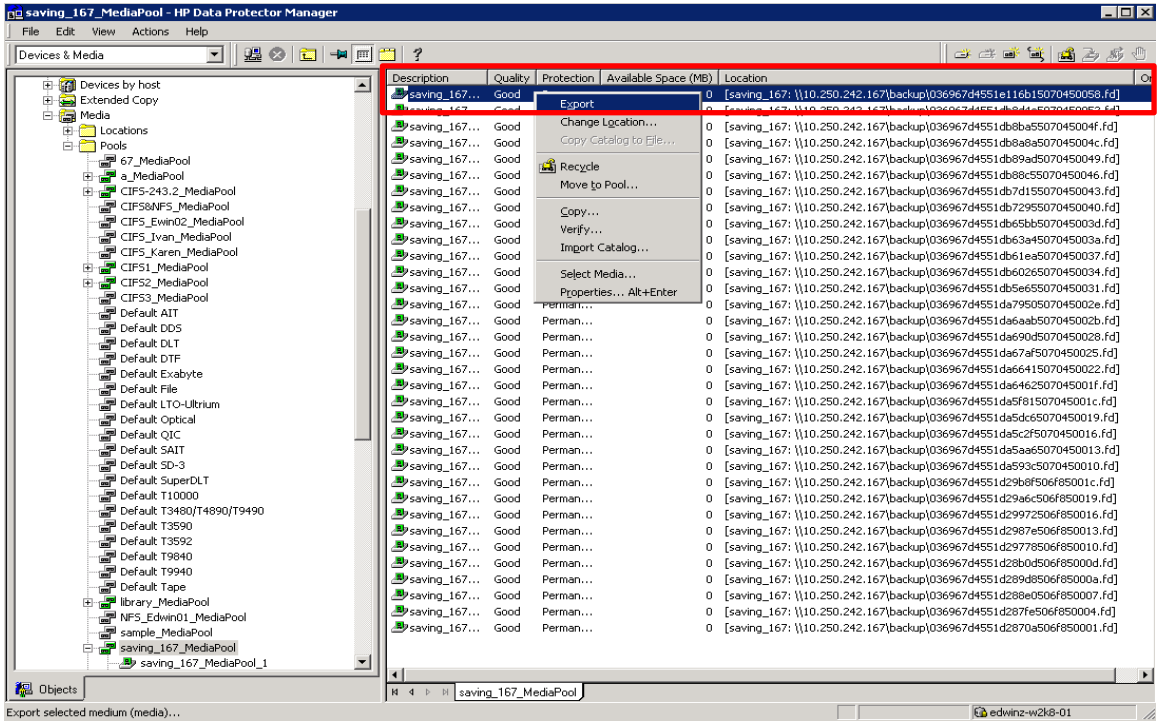


Target DR



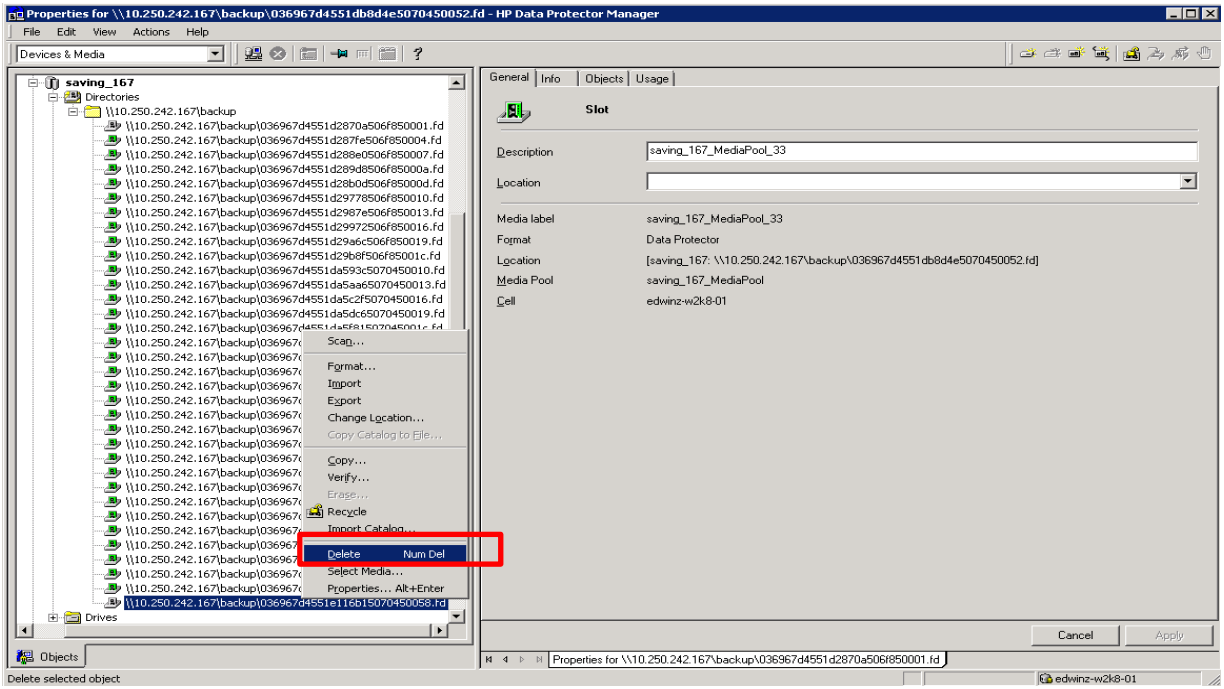
4.3 Preparing a replication target for restore

1. In HP Data Protector, go to **Devices & Media** > **Media** > **Pools**, and right-click the Media Pool associated with the source container device and the backup set that needs to be restored. Click **Export**.

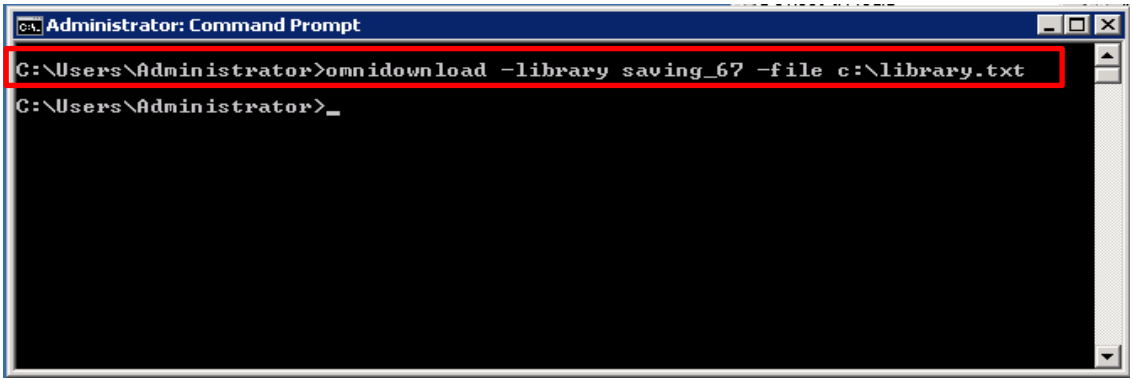


NOTE: If the media pool is protected and cannot be exported, you should perform a **Recycle** before **Export.**

2. Under **Devices & Media** > **Devices**, expand the source container device node, and delete the device object that is associated with the backup set.

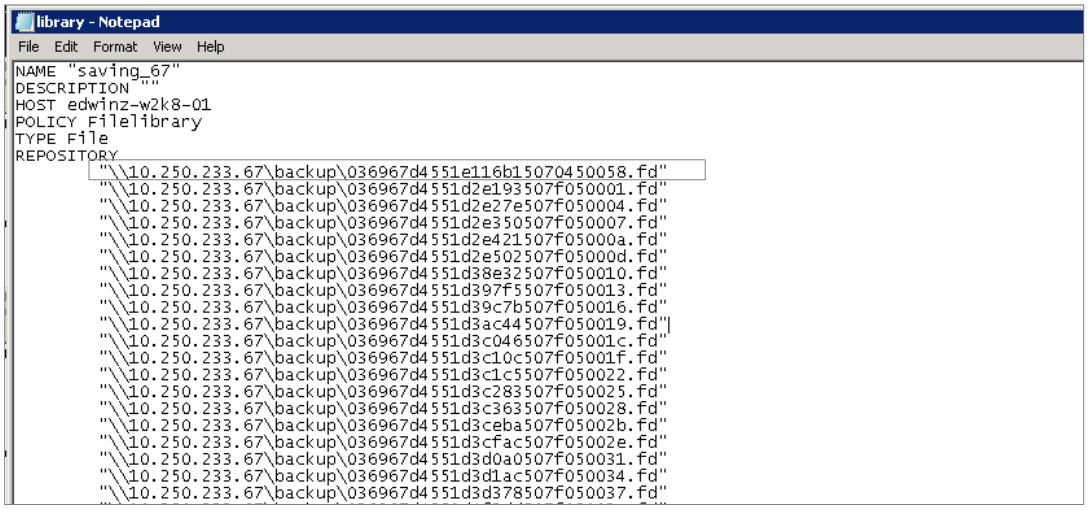


3. Open the HP Data Protector CLI console, and then use the command utility **"omnidownload"** to download the source container library configuration from IDB.

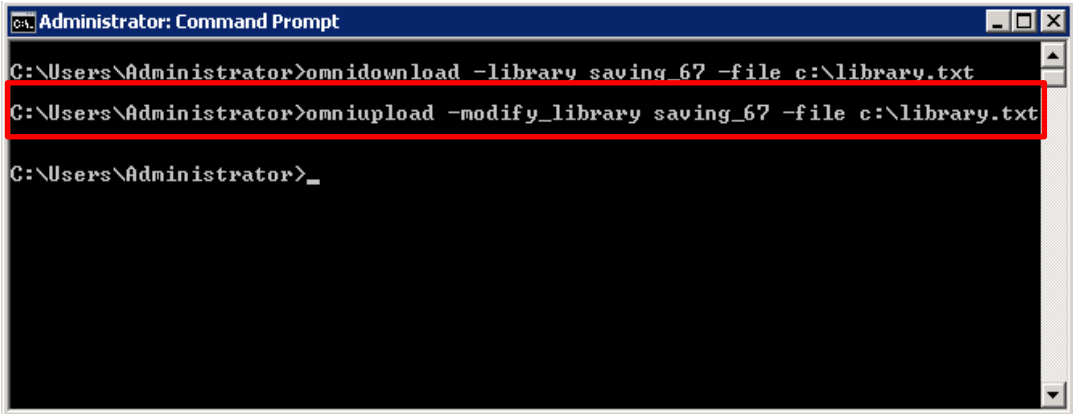


NOTE: Refer to Appendix C for information about how to use the command "**omnidownload**".

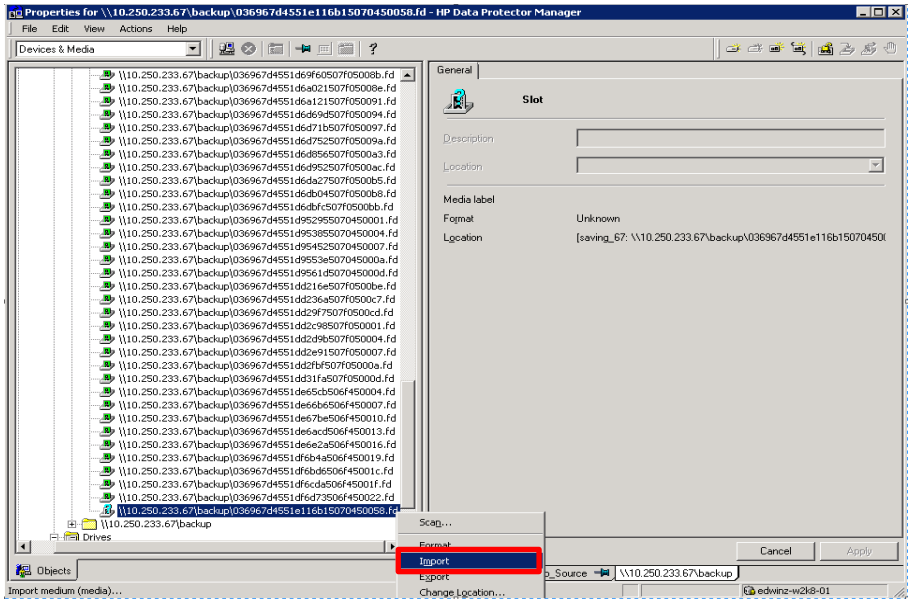
4. Edit the file, modify or add the object information to point to the target DR Series system, and save this file.



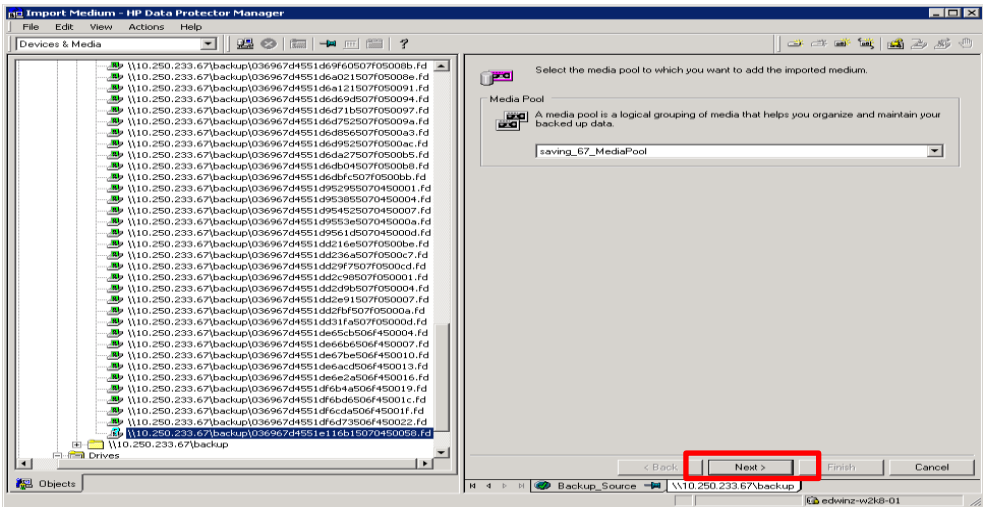
5. Upload this modified configuration file to IDB using the command, **omniupload**.



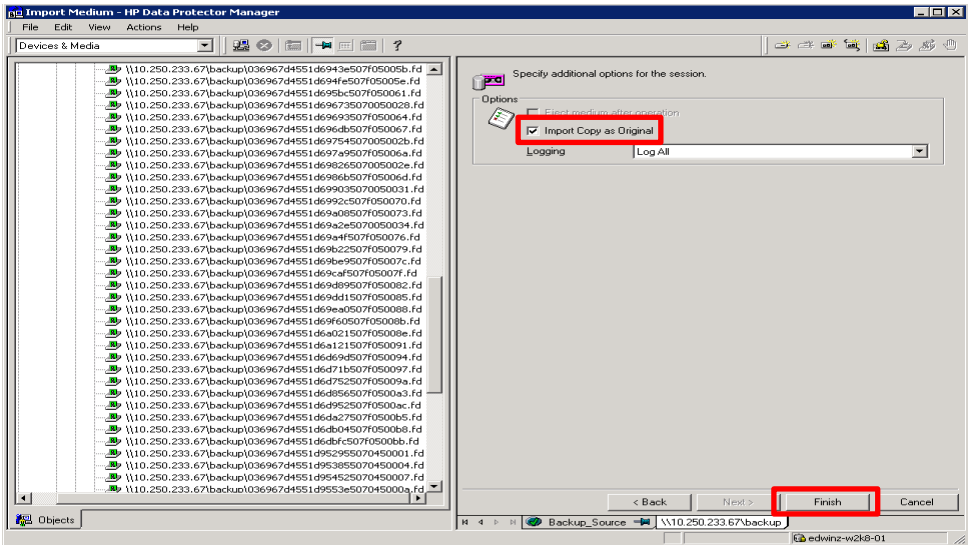
6. Expand the device node, and **Import** the device object from the target device.



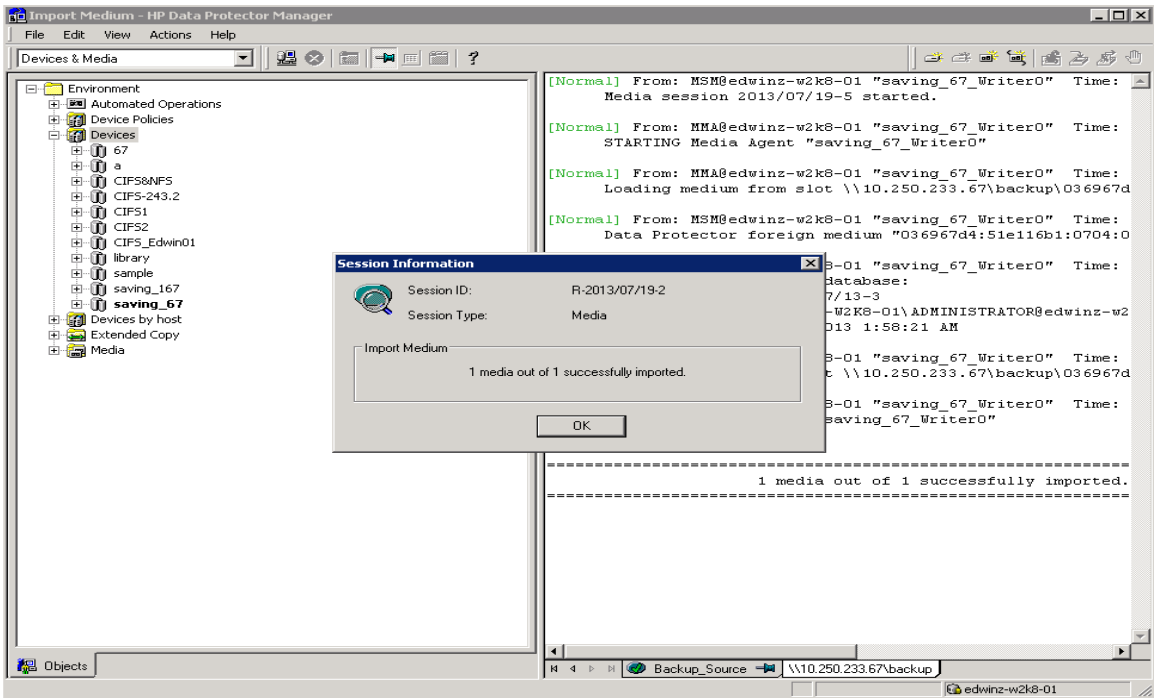
7. Click **Next**.



9. Select the **Import Copy as Original** checkbox, and then click **Finish**.

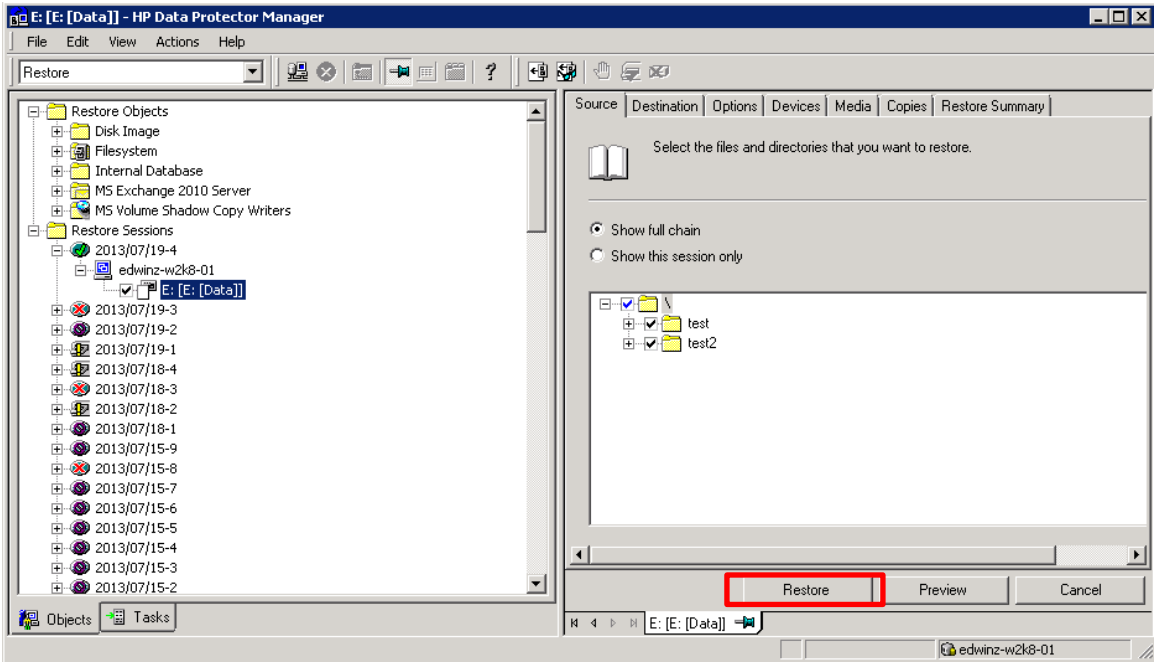


10. Verify that the import is done successfully.

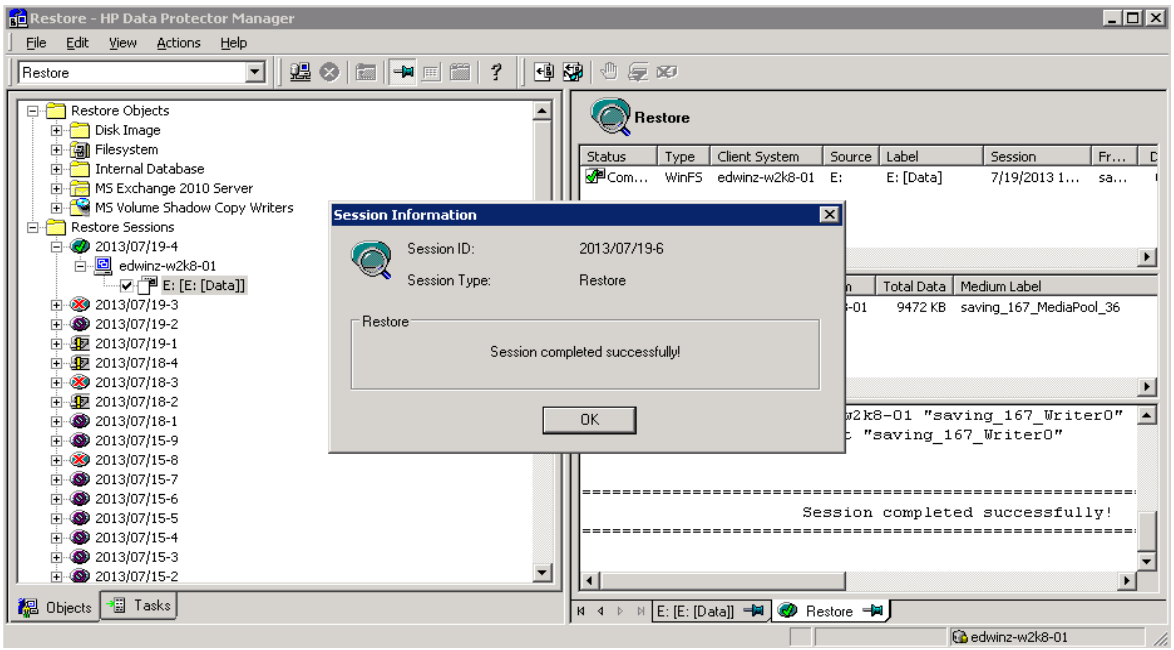


4.4 Restoring from a target DR Series system

1. In the HP Data Protector Manager, in the **Context List** drop-down menu, select **Restore**. Run the restore session that is associated to the backup set, click **Restore**.



2. Verify that the restore is done successfully.

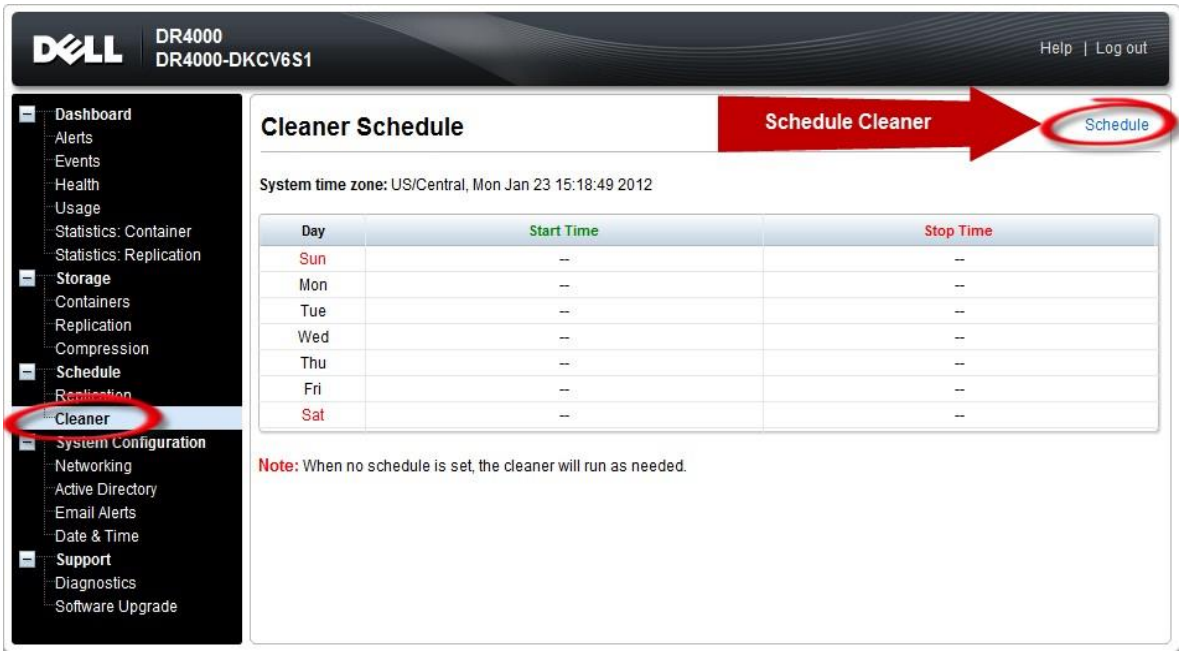


5 Setting up the DR Series system cleaner

Performing scheduled disk space reclamation operations are recommended as a method for recovering disk space from system containers in which files were deleted as a result of deduplication.

The cleaner runs during idle time. If your workflow does not have a sufficient amount of idle time on a daily basis, then you should consider scheduling the cleaner to force it to run during a scheduled time.

If necessary, you can perform the procedure shown in the following screenshot to force the cleaner to run. After all of the backup jobs are set up, the DR Series system cleaner can be scheduled. The DR Series system cleaner should run at least 40 hours per week when backups are not taking place, and generally after a backup job has completed.



6 Monitoring deduplication, compression, and performance

After backup jobs have run, the DR Series system tracks capacity, storage savings, and throughput on the DR Series system dashboard. This information is valuable in understanding the benefits of the DR Series system.

Note: Deduplication ratios increase over time. It is not uncommon to see a 2-4x reduction (25-50% total savings) on the initial backup. As additional full backup jobs are completed, the ratios will increase. Backup jobs with a 12-week retention will average a 15x ratio, in most cases.

A Creating a storage device for CIFS

There are two options for HP Data Protector to authenticate to the DR Series system through CIFS.

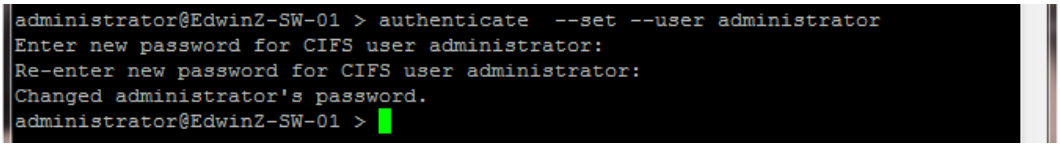
- **DR joined into domain**: Integrate HP Data Protector Server and DR Series System with Active Directory
  - Ensure the AD user has appropriate ACLs to the DR Series System Container share
  - Set the HP Data Protector service to run with this AD user <Domain\User>

- **DR is standalone CIFS server**: Make sure HP Data Protector Inet service and CRS service use the same Log On user. DR Series System also has the same username and password defined in Local Workgroup Users.

  Also make sure this CIFS user has appropriate access permission to the DR Series System container share. HP Data Protector services will use this user to authenticate to DR Series System share in Workgroup mode.

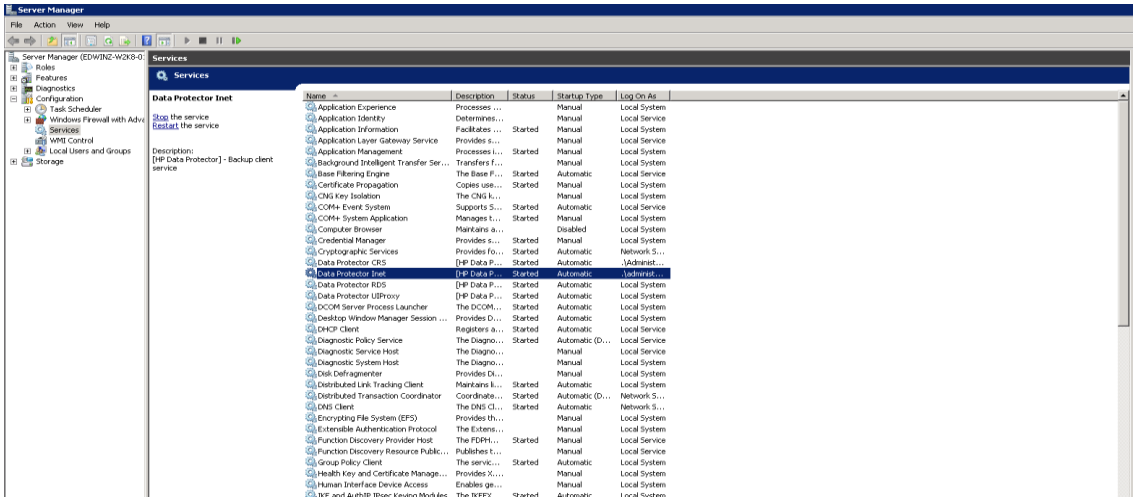
1. To set the password for local CIFS administrator on the DR Series System, log on to the DR using SSH.
   a. Log on with username Administrator and password St0r@ge!
   b. Run the following command:

   ```
   authenticate --set --user administrator
   ```



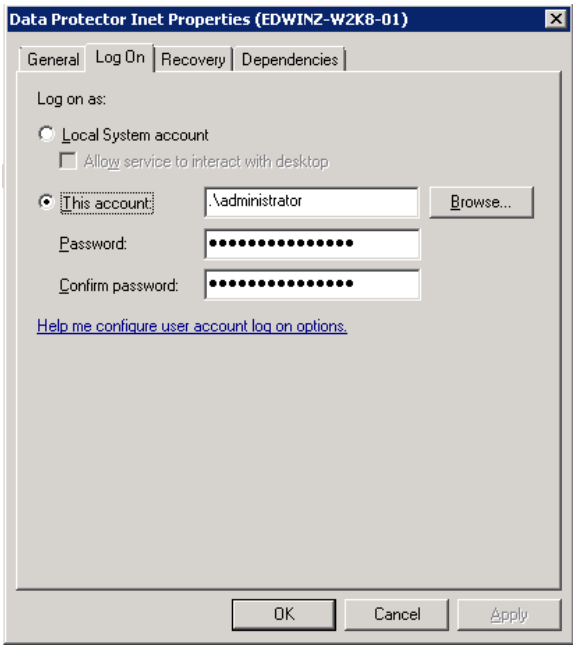
NOTE: The CIFS administrator account is a separate account from the administrator account used to administer the appliance. After an authentication method is chosen, set the HP Data Protector Service account to use the CIFS administrator account.

2. Launch the Microsoft Services Snap-in by clicking **Start > Run > Services.msc > Enter**.
3. Locate the Data Protector Inet and Data Protector CRS Service. Right-click **Properties** and click the Log On tab.



NOTE: Do this step only when no backups are currently running, as restarting the services causes backup jobs to fail. Double-click the services one at a time.

If you are using local synced accounts rather than the AD account, make sure that there is a ".\"in front of the user name.



4. Click **OK**.
5. After changing both services for HP Data Protector, select **Stop/Start** to restart the two services.

B Creating a storage device for NFS

For NFS backup using the HP Data Protector, a target folder needs to be created as NFS share directory. This is the location to which backup objects will be written. This is not required while adding CIFS share.

1. Mount the DR Series System NFS share onto the NFS share directory which backup objects will be written in the HP Data Protector environment.
2. Verify the NFS share. One way is to try using the Linux command “cat /proc/mounts”. The rsize and wsize of the nfs mount should be 512K.

C User commands

Omnidownload

- Downloads information about a backup device and a library from the Data Protector internal Database (IDB).
- This command is available on systems with the Data Protector User Interface component installed.

  Examples:

  To review the information about a virtual tape library named "VTL" in ASCII format that will be saved as the file "libVTL.txt" to the directory "C:\Temp", run:

  ```
  omnidownload -library VTL -file C:\Temp\libVTL.txt
  ```

Omniupload

- Uploads information about a backup device from an ASCII file to the Data Protector internal database(IDB).
- This command is available on systems with the Data Protector User Interface component installed.

  Examples:

  To modify library"Exabyte1" using the information in the file "/tmp/EXA", run:

  ```
  omniupload -modify_library Exabyte1 -file /tmp/EXA
  ```