



Hewlett Packard
Enterprise

Data Migration using Tape to Tape Copy with HPE StoreEver Tape Libraries

Applications include HPE Data Protector, Symantec NetBackup and Backup Exec, and CommVault Simpana

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Overview

Data is the heart of a business. Without it, things quickly grind to a halt. As the amount of digital data continues to grow at an exponential rate, organizations face tough challenges such as determining if their existing data protection infrastructure can accommodate the needs of their primary data storage growth, whether they can control the operational costs associated with data protection, keeping ever-increasing volumes of business-critical data for longer periods, and whether data stored on older technologies will always be accessible. Hewlett Packard Enterprise understands the challenges of managing your data protection infrastructure while protecting your investment.

HPE StoreEver tape libraries preserve your initial capital investment by offering a single solution that scales seamlessly to accommodate the requirements of ever-growing data. The scale-out architecture of HPE StoreEver tape libraries allow you to pay as you grow—simply add in new modules to boost capacity and performance without investing in a whole new library. When needed, upgrades are fast and non-disruptive. You can effortlessly address both your short-term and long-term storage needs and respond to unpredictable growth, service or changes.

Migrating data from legacy tape technology to a new tape technology offers many advantages such as reducing the complexity of managing multiple devices and media. For example, the number of required media cartridges used can be reduced up to 75% while more than doubling the tape drive performance.¹ This technical whitepaper addresses the challenge of migrating data from legacy tape technology to a new tape technology using HPE StoreEver tape libraries with HPE Data Protector, Symantec NetBackup and Backup Exec, and CommVault Simpana data protection software. The process is hardware independent in that copying can take place between drives in separate libraries, between drives in separate partitions within the same library, or between media in a non-partitioned library.

Test configuration

The following hardware and software components were used for testing all of the scenarios covered in this whitepaper:

TAPE LIBRARY	TAPE DRIVES	LIBRARY OR APPLICATION DEFINED PARTITIONING	Windows® VERSION	Linux® VERSION	HPE DATA PROTECTOR VERSION	Symantec NetBackup VERSION	Symantec Backup Exec 2012 VERSION	Commvault Simpana VERSION
StoreEver ESL G3	LTO-6 Ultrium 6650; LTO-5 Ultrium 3280	Library	2008 R2	Red Hat® 6.4	8.0	7.5.0.6	14 SP2	10 SP3b
StoreEver MSL	LTO-6 Ultrium 6250; LTO-5 Ultrium 3280	Library	2008 R2	Red Hat 6.4	8.0	7.5.0.6	14 SP2	10 SP3b

¹ Based on official specifications for HPE StoreEver LTO-6 Ultrium tape vs. HPE StoreEver LTO-4 Ultrium tape capacity, November 2012

Technology overview

HPE StoreEver Tape key features and benefits

HPE StoreEver Tape products protect your data longer, for less

As the worldwide leader² in tape drives and automation, HPE StoreEver Tape provides tape storage that is critical to comprehensive data protection and archiving. HPE StoreEver also addresses all of your long term retention needs. With the broadest and most advanced portfolio in the industry, HPE StoreEver now features support for LTO-7. HPE StoreEver includes tape media, standalone tape drives, and tape libraries that accommodate more than 180 PB³ in a single system.

HPE StoreEver tape automation libraries include HPE StoreEver ESL G3 and MSL Tape library families.

HPE StoreEver:

- Reduces TCO and management burden—efficiently protect and retain rapidly growing data

With support for LTO-7, HPE StoreEver offers significant cost, energy and footprint advantages. Lowest cost per gigabyte for longer term storage with limited power or energy requirements as the less frequently accessed data is stored or as media become full.

The HPE MSL6480 Tape library offers up to 195 TBs (equivalent to 13 LTO-7 tape cartridges) per 1U of rack space using LTO-7 drives, while providing the highest tape drive density per module of any mid-range tape library, providing flexible options to consider for your business. HPE Command View for Tape Libraries software is a single pane of glass management software which eases data protection with remote management, diagnostics, and configuration of all your ESL G3 and MSL tape libraries through a single console.

- Is reliable—protect and retain data over the long term

With enhanced reliability, extreme durability and proactive monitoring by HPE TapeAssure Advanced technology, you can store essential but less frequently accessed data with confidence.

Tape Assure Advanced makes managing, fine-tuning, and archiving faster and easier with comprehensive reports on status, performance, utilization, and health of all tape drives and media. The advanced analytics feature of TapeAssure Advanced makes use of predictive analytics to predict the likelihood of failures, bottlenecks, and load balancing issues in the tape infrastructure. This data can be exported on demand or at scheduled times through HPE Command View Tape Library software.

HPE StoreEver Tape is ideal for archiving cold or active data with a media shelf-life of up to 30 years in normal ambient conditions.

- Is secure—enable a vital “last line of defense”

Hardware-based data encryption, WORM protection, and removable storage that are offline to threats make HPE StoreEver a highly reliable safety net and an optimal platform for long-term digital archive.

- Delivers enormous scalability and high availability—answer data growth challenges

The HPE StoreEver ESL G3 can scale from 100 to up to 12,006 tape cartridges—from 1 to 96 LTO-4 or newer Ultrium tape drives—and 1 to 16 library frames, with each frame in a standard 19-inch rack form factor which is the smallest enterprise library footprint available.

Support ongoing host and SAN connectivity under varying conditions with library LUN control failover. Achieve near-continuous data access with new dual-robotic capabilities available with the HPE StoreEver ESL G3.

The HPE StoreEver MSL6480 Tape library has scale-out architecture which allows you to pay as you grow—simply add in new modules to boost capacity and performance without investing in a whole new library.

An MSL6480 can scale vertically from 80 to 560 cartridge slots to store up to 8.4 PB in a single 19-inch rack; add in between 1 and 42 LTO-5 or newer half-height SAS or FC drives for speeds of up to 113.4 TB/hour (assumes LTO-7 with 2.5:1 data compression) which can save you lots of time.

² According to the IDC Branded Tape Tracker CQ4 2012, HPE is the worldwide market share leader in total units.

³ Using 2.5:1 compression and a fully populated 16 frame ESL G3 tape library.

HPE Data Protector

HPE Data Protector is an enterprise-class data protection application. Its architecture is designed to protect your data from edge to datacenter and across physical, virtual, and cloud environments. HPE Data Protector features extensive HPE Storage system and third party device support, broad application support, native VMware® vCloud Director integration, granular application specific single file recovery and integrated secondary backup to the cloud (via HPE LiveVault).

Symantec NetBackup

Symantec NetBackup is an Enterprise class data protection application. Its architecture is designed for a large and complex distributed computing environment. NetBackup provides scalable storage servers that can be configured for a variety of tasks such as backup, recovery, archiving, and file migration. NetBackup provides a variety of client agents for different operating systems and applications. NetBackup Media Servers support disk and tape for storage targets.

Symantec Backup Exec

Symantec Backup Exec is a backup and recovery solution for small and medium-sized businesses. Its architecture is designed for virtual and physical environments and recovers data or systems at any scale, from an individual item to an entire server. Backup Exec delivers disk and tape data protection for Windows, VMware, Hyper-V, Linux and Mac environments. Sophisticated application protection is also available, with support for Exchange, SharePoint, SQL Server, Active Directory, Oracle, and others.

CommVault Simpana

CommVault Simpana is an Enterprise class backup and recovery solution. CommVault Simpana software can be used to analyze, back up and recover, replicate, archive, and search data and information across your enterprise and across any storage devices—from data centers to desktops to laptops and in the cloud. CommVault delivers disk and tape data protection for any operating system, database, and application.

HPE Data Protector

Migrating data using Object Copy

Copying a single backup

To copy an individual session or dataset from one tape to another tape, you can do the following:

1. From the HPE Data Protector Manager drop-down menu, select “Object Operations”.
2. Under “Copy”, expand “Object copy” then expand “Interactive”.
3. The available choices for selection are: Media, Objects and Sessions. An individual backup job for a server can be restored by selecting any of the three options available but for this section, “Object” was selected.

4. "Filesystem" and "WinFS" will be listed. Expanding Filesystem will list all servers that do not have a Windows operating system installed. Expanding WinFS will list all servers with a Windows operating system installed. For this example, WinFS was expanded and a Windows Server® was selected. A list of all backup sessions by date and time for the selected server will be displayed. Click on the arrow to expand the session to be copied then click the box next to the object to select that object for copy. Refer to figure 1 as an example. Click on "Next" to continue.

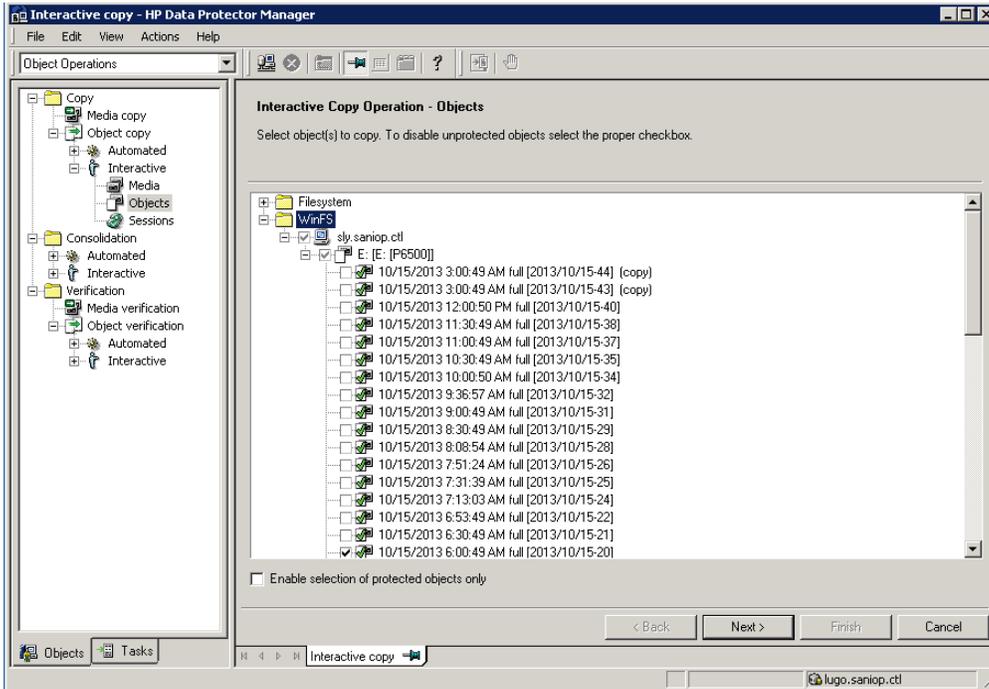


Figure 1. Interactive copy operation—selecting the object to be copied

5. The next screen will be “Source Devices” for the interactive copy operation. Specify which device will be the source device to read the original tape. “Automatic device selection” is recommended and is selected by default. Click “Next” to continue.
6. The following screen will be “Destination Devices” for the interactive copy operation. Specify which device will write to the destination tape. Select the tape drive to be used and with that drive highlighted, click on properties to verify the settings for the drive specifically that the correct media pool and CRC check are selected. For more details on any of the possible options, click on the “Help” tab. Refer to figure 2 as an example. Click on “Next” to continue.

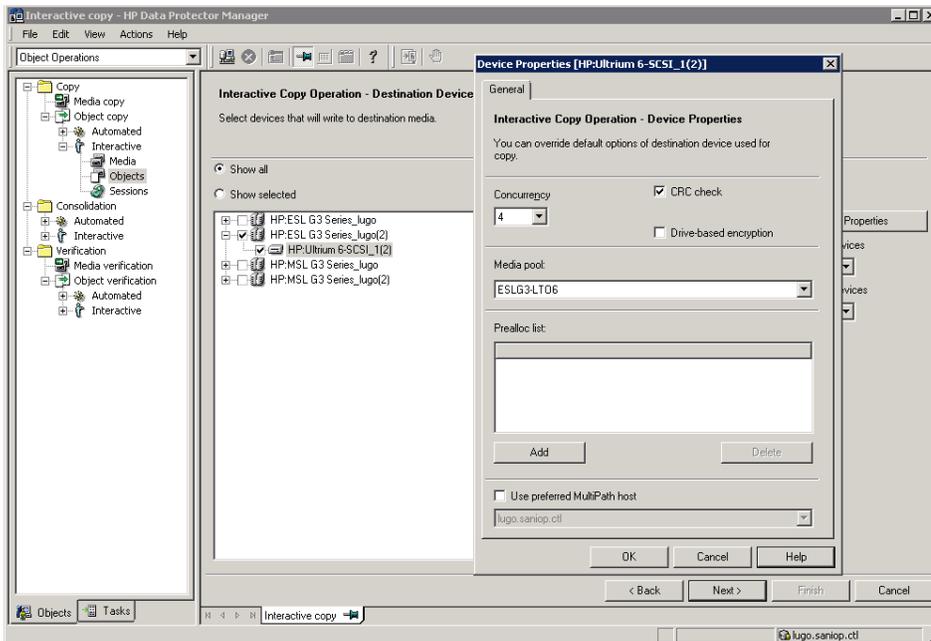


Figure 2. Interactive copy operation—verifying the properties for the destination device

7. Now the “Options” screen for the interactive copy operation is displayed. Using the default options will work for most interactive copy operations. If you need to modify or understand the available options, click on the “?” icon in the HPE Data Protector Manager tool bar to the right of the drop-down menu. Click on “Next” to continue.
8. The following screen will be “Media” for the interactive copy operation. By clicking on “All media”, you can view the media that will be used. Click on the “?” to understand the available options if necessary, otherwise click on “Next” to continue.
9. The final screen will be the “Summary” for the interactive copy operation. Click on the object name then properties to view the options and source for the interactive copy operation if you find it necessary to confirm the options previously selected. Otherwise, click on “Finish” to start the interactive copy operation.

10. A new tab will open to view the progress for the interactive copy operation. See figure 3 as an example.

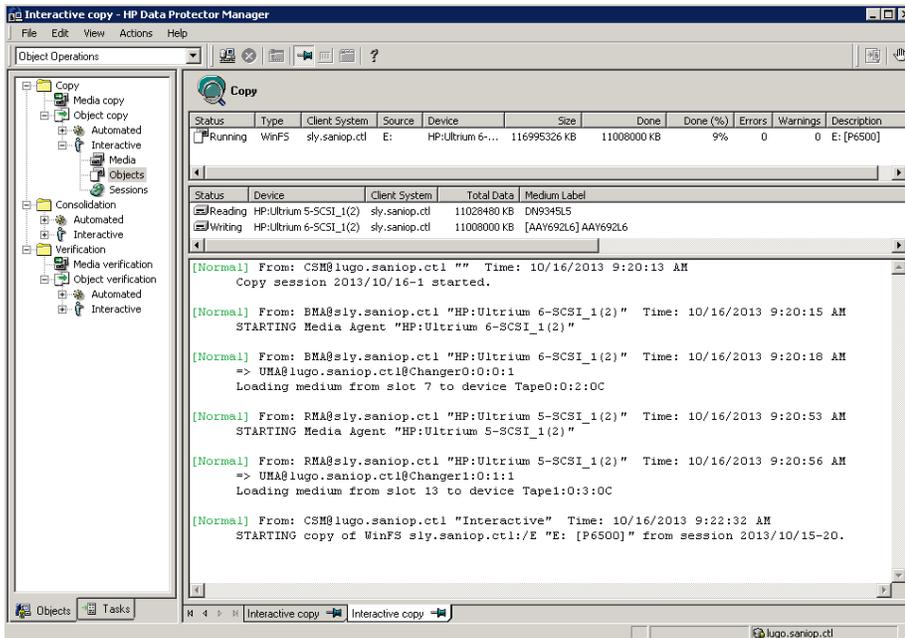


Figure 3. Interactive copy operation—view the progress of the copy operation

Copying multiple backups

To copy multiple sessions or datasets from one tape to another tape, you can do the following:

1. Follow the steps listed in the previous section for Data Protector, copying a single backup, to view and expand the backup sessions to be copied for a server.
2. Next, click the box for all of the backup sessions to be copied then click “Next” to continue the interactive copy operation.
3. Specify the remaining settings for the interactive copy operation by following the steps from the previous section for Data Protector, copying a single backup, specifically that the destination storage device the backup sessions will be copied to has been selected.
4. Once the settings for the interactive copy operation have been verified and finish is selected, a new tab will open to view the progress for the interactive copy operation.

Copying all media content

To copy all of the sessions from a single tape or multiple tapes to another tape, you can do the following:

1. From the HPE Data Protector Manager drop-down menu, select “Object Operations”.
2. Under “Copy”, expand “Object copy” then expand “Interactive”.
3. The available choices for selection are: Media, Objects and Sessions. Select “Media”.
4. All of the media pools for Data Protector will be listed. Expand the desired media pool to list all of the tapes within that media pool. Select the box for the tape or tapes to be copied to another tape. To view the backup sessions contained on each tape, click on the plus to expand any tapes. See figure 4 as an example. When the desired tape or tapes have been selected, click on “Next” to continue.

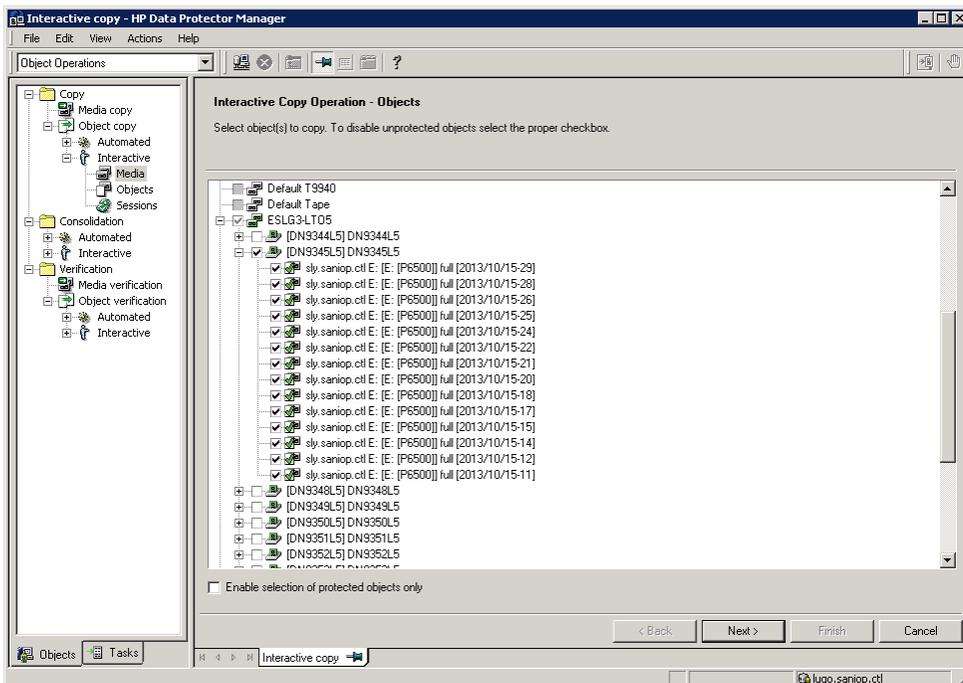


Figure 4. Interactive copy operation—selecting all of the content on the media for copying

5. Specify the remaining settings for the interactive copy operation by following the steps from the previous section for Data Protector, copying multiple backups, specifically that the destination storage device the source tapes will be copied to has been selected. Verify on the screen “Media” for the interactive copy job that when “All media” is selected, the tapes initially selected to be copied are all listed. If additional tapes are also listed, this is likely because backup sessions on the tapes selected to be copied spanned to another tape(s) while completing the final backup session written to that tape. On the “Summary” screen for the interactive copy operation, all of the backup sessions that will be copied from the selected tapes to a new tape (or tapes) will be listed for verification.
6. Once the settings for the interactive copy operation have been verified and finish is selected, a new tab will open to view the progress for the interactive copy operation.

Verification

Once any object copy operation completes, confirmation that the data was successfully copied to another tape can be verified as follows:

1. From the HPE Data Protector Manager drop-down menu, select “Object Operations”.
2. Under “Verification”, expand “Object verification” then expand “Interactive”.
3. The available choices for selection are: Media, Objects and Sessions. Select “Media”.
4. All of the media pools for Data Protector will be listed. Expand the media pool that backup sessions from one or multiple tapes were copied to which will list all of the tapes within that media pool. Select the box for the tape or tapes to be verified. To view the backup sessions contained on each tape, click on the plus to expand any tapes. See figure 5 as an example. When the desired tape or tapes have been selected, click on “Next” to continue.

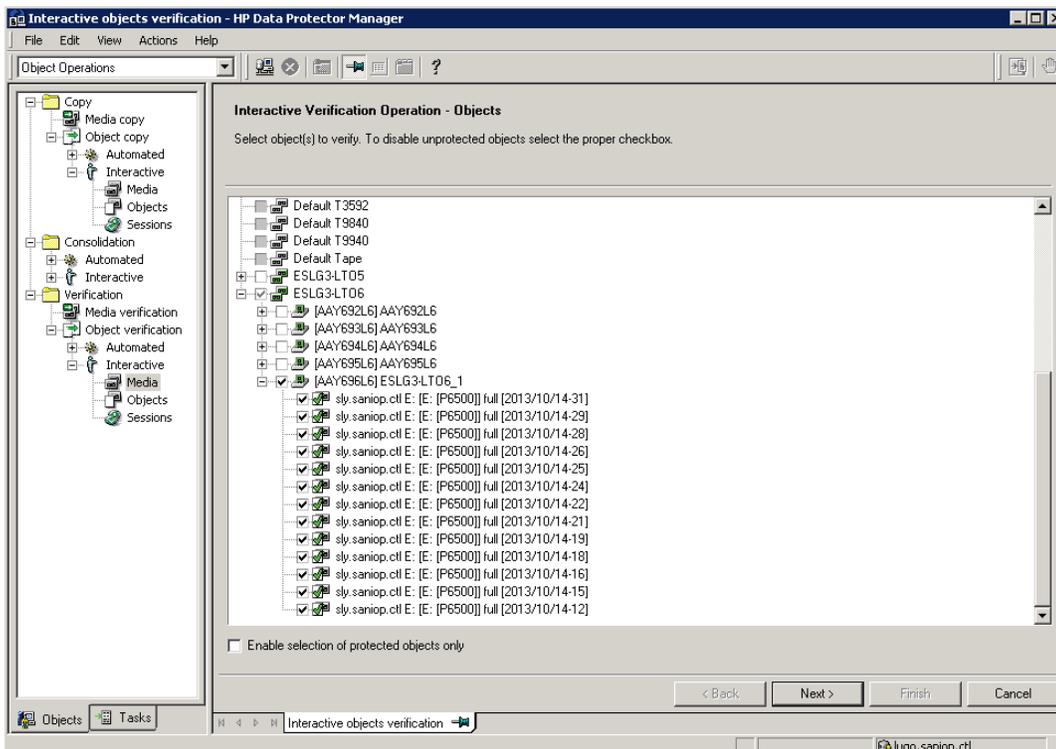


Figure 5. Interactive verification operation—selecting the media to be verified

5. The next screen will be “Source Devices” for the interactive verification operation. Specify which device will be the source device to read the original tape or tapes. “Automatic device selection” is recommended and is selected by default. Click “Next” to continue.
6. The following screen will be “Verification target” for the interactive verification operation. Specify which host will verify the media. The source host is selected by default. To use settings other than the defaults for an interactive verification operation, click on the “?” icon in the HPE Data Protector Manager tool bar to the right of the drop-down menu. Click on “Next” to continue.
7. The following screen will be “Media” for the interactive verification operation. By clicking on “All media”, you can view the media that will be verified.
8. The final screen will be the “Summary” for the interactive verification operation. All objects/backup sessions to be verified will be listed. Click on “Finish” to start the interactive verification operation.

- The date, time, policy name, schedule, server and media ID should be listed for each backup ID. See figure 7 as an example. Select the “Backup ID” to be duplicated then right-click on that backup ID and select “Duplicate”.

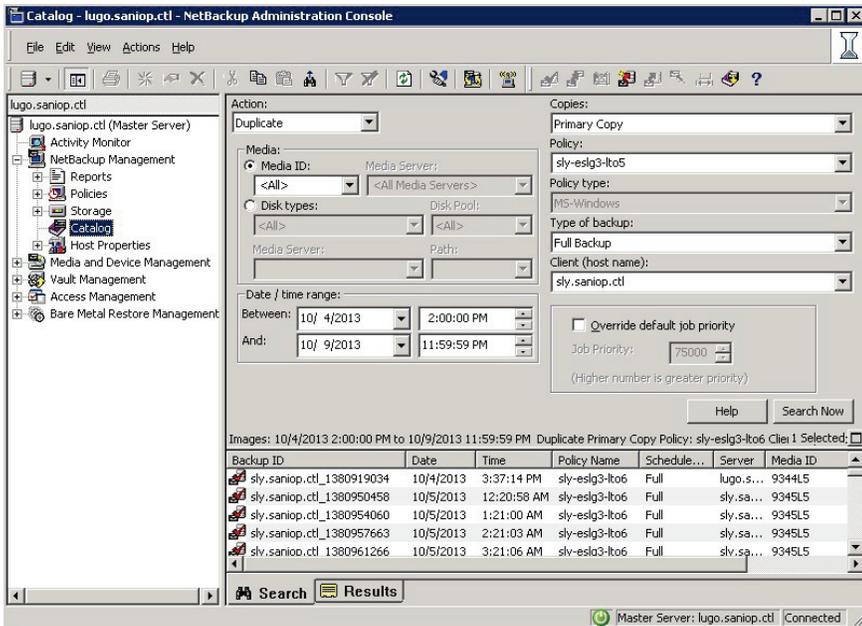


Figure 7. Catalog search-specifying the search criteria for duplicating a backup image

- The “Setup Duplication Variables” interface should open. See figure 8 as an example.

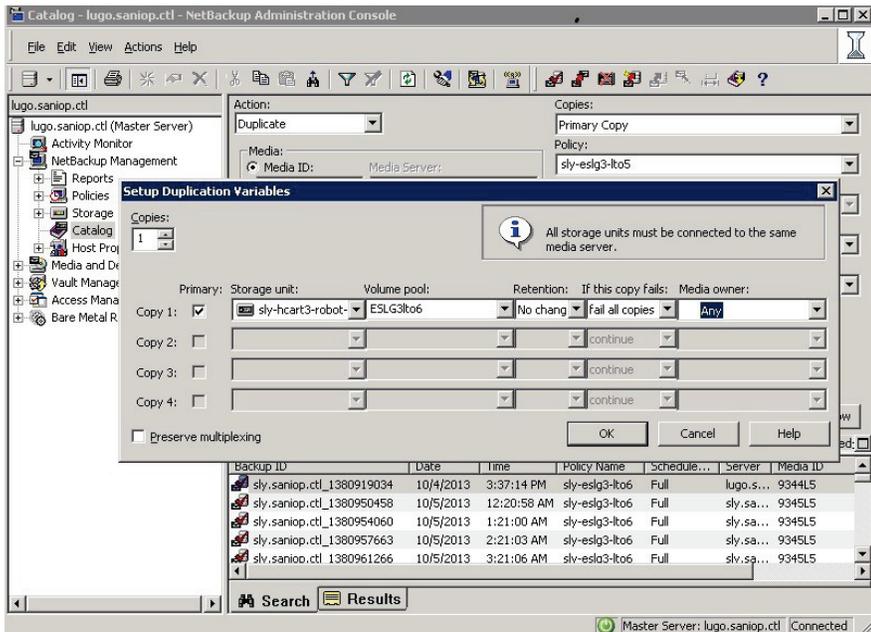


Figure 8. Duplicating backup images-specifying the variables for the duplication job

10. Select the number of copies and if multiple copies are being made, select which copy will be the primary copy.
11. Modify the storage unit and volume pool to be used to store the duplicate of the backup ID.
12. “Retention” period can be modified but typically should be set to “no change” to retain the same retention period as the source tape.
13. Modify “If this copy fails” to “fail all copies” if ensuring every image is successfully duplicated is preferred.
14. Selecting “Any” for the “Media Owner” lets NetBackup select the media owner while selecting “None” specifies that the media server that writes to the media owns the media.
15. Preserve multiplexing should not be selected unless the multiple scenarios for creating and duplicating backups in multiplex format are thoroughly understood. For detailed information on each configurable field, click on the “Help” button. For additional information regarding multiplexing, click on the “Search” tab in the left pane of the Symantec NetBackup Administration Console Help, and enter “preserve multiplexing”. Among the listed topics should be **Duplicating backup images** which when selected lists the backup duplication scenarios including multiplexing.
16. Select “OK” when ready to start the duplication job.
17. The progress of the duplication job can be viewed by selecting the “Results” tab within the Catalog pane. See figure 9 as an example.

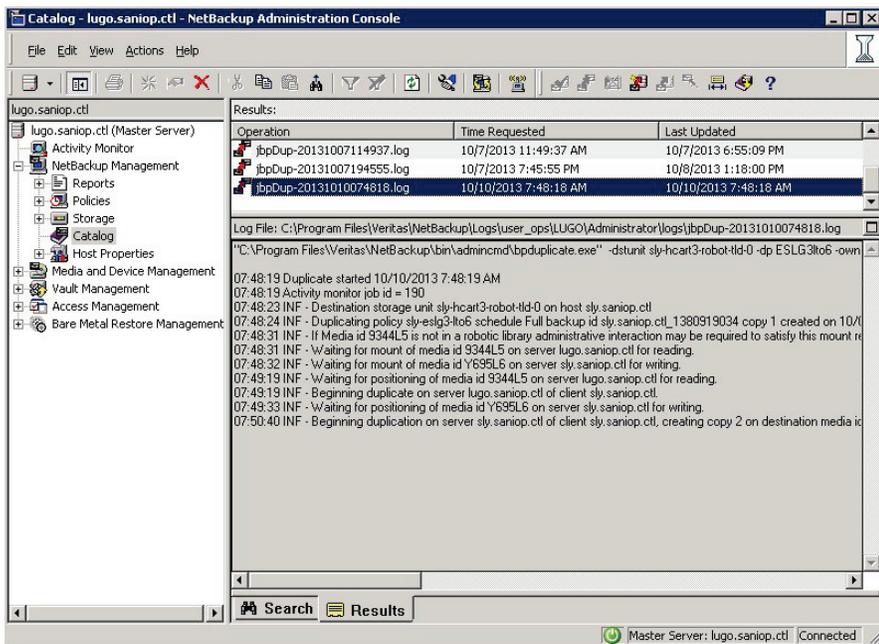


Figure 9. Duplicating backup images-view the progress of the duplicate job

Copying multiple backups

To copy multiple backup IDs or datasets from one tape to another tape, you can do the following:

1. Follow the steps listed in the previous section for NetBackup, copying a single backup, and modify the “Catalog” search criteria to list and view the backup IDs (jobs) and/or media IDs to be duplicated.
2. Next, hold the CTRL key while clicking on the multiple backup IDs to be copied then right-click and select “Duplicate” to launch the “Setup Duplication Variables” interface to specify the settings for the duplicate job.
3. Modify each of the fields for the duplicate job by following the guidelines outlined in the previous section for NetBackup, copying a single backup.
4. Click on OK to start the duplicate job when satisfied with the settings. View the progress of the duplication job by selecting the Results tab or by clicking on Activity Monitor.

Copying all media content

To copy all of the backup IDs from a single tape or multiple tapes to another tape, you can do the following:

1. Follow the same steps outlined above for copying multiple backups.
2. When copying all of the data from more than one tape to another tape, be certain to modify the “Media ID” from a single tape ID to “<All>”. This ensures that all of the media containing backup IDs (jobs) matching the specified search criteria will be listed for each of the backup IDs which allows for sorting by Media ID if desired. The backup IDs can then be viewed either by date and time or by media ID.
3. Once the desired backup IDs or media IDs have been identified, hold the CTRL key to select multiple individual jobs one at a time or hold the SHIFT key to highlight several jobs simultaneously.
4. Next, right-click and select “Duplicate” to launch the “Setup Duplication Variables” interface to specify the settings for the duplicate job. Follow steps 9-15 listed in the first section for NetBackup, copying a single backup, to modify the duplication variables.
5. Click on OK to start the duplicate job when satisfied with the settings. View the progress of the duplication job by selecting the Results tab or by clicking on Activity Monitor.
6. Once the duplication job completes, the status should indicate that all backup images were successfully duplicated. See figure 10 as an example.

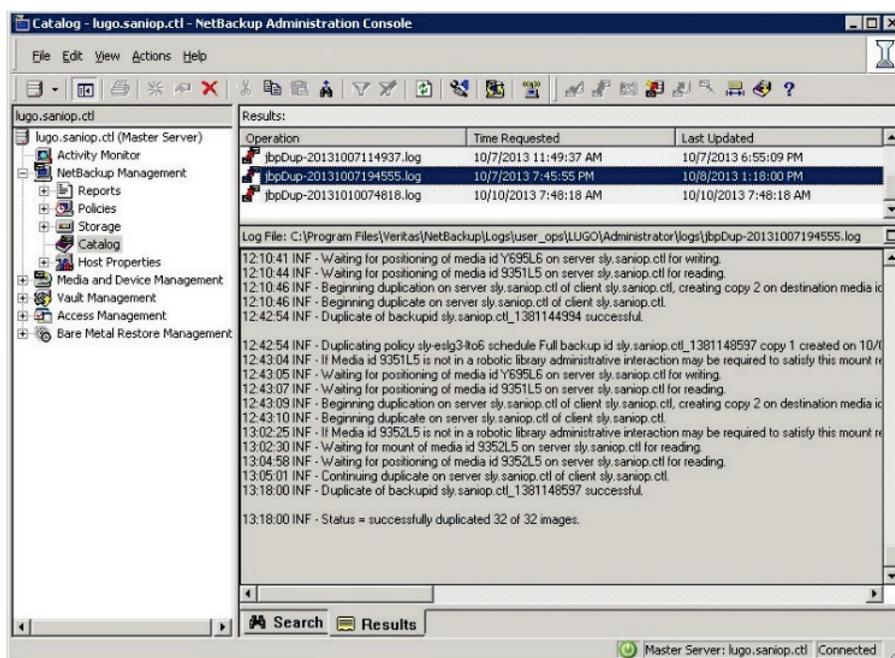


Figure 10. Duplicating backup images—verify that all images were successfully duplicated

Verification

Once any duplicate job completes, confirmation that the data was successfully copied to another tape can be verified as follows:

1. In the left pane of the Symantec NetBackup Administration Console expand the “NetBackup Management” icon and select “Catalog”. In the right pane, set up the search criteria for the duplicated image to be verified.
2. From the drop down menu under “Action”, select “Verify”.
3. Select the ID of the tape to be verified, or select “<All>” if uncertain which tape is desired, from the “Media ID” drop down menu.
4. Modify the “Date / time range” criteria to include the day and time the duplication was created.
5. In the “Copies” drop down menu, “Copy 2” or any copies after Copy 2 should be selected for viewing duplicate copies. The remaining criteria, such as policy, type of backup, etc., can also be modified to further refine the search if necessary.
6. Click on “Search Now”.
7. After selecting “Search Now”, a list of all copies found using the search criteria specified will be displayed.
8. The date, time, policy name, schedule, server and media ID should be listed for each backup ID. Make sure that under the category “Copy Number” that the listed number is 2 (or greater) indicating that backup ID is a copy of the original image. See Figure 11 as an example. Select the “Media ID” to be verified then right-click on that media ID and select “Verify”. Similar to duplicating many or all backup IDs on a tape, multiple or all copies can be verified by holding the CTRL key while clicking on all of the copies to be verified then right-click and select “Verify”.

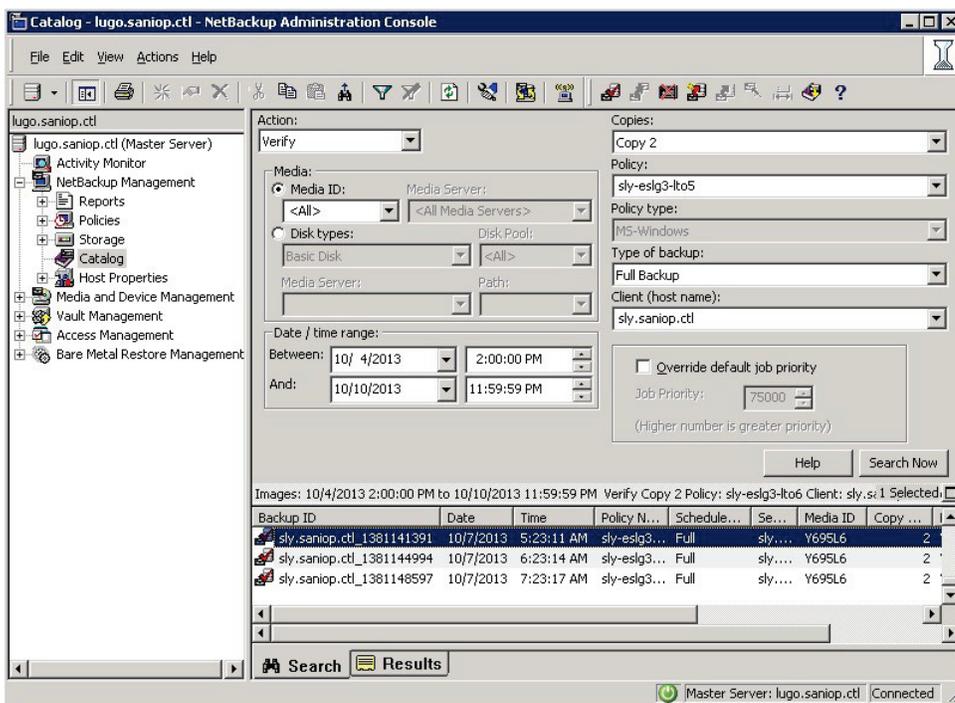


Figure 11. Catalog search—modifying the “Copies” field to not include original images ensuring that the copied content will be verified

9. Status of the verification job can be viewed by selecting the “Results” tab within the Catalog pane or by clicking on “Activity Monitor” in the left pane of the NetBackup Administration Console.

Symantec Backup Exec

Migrating data using DirectCopy to Tape

Copying a single backup

To copy an individual backup set or dataset from one tape to another tape, you can do the following:

1. Select the “Backup and Restore” tab at the top of the Symantec Backup Exec graphical user interface (GUI). All servers configured to use Backup Exec will be listed.
2. Double-click on the Backup Exec server whose data will be duplicated from one tape to another tape. There will be a list of selections to the far left, click on “Backup Sets” to list all of the backup jobs by date created for the selected server.
3. Click on the arrow to the left of the Backup Source’s date to expand and view the backup set. The contents and properties of the backup set can be viewed by double-clicking on the backup set.
4. Right-click on the backup set then select “Duplicate” to launch the interface to specify the settings for the duplicate job which will copy data from one tape to another tape. See figure 12 as an example.

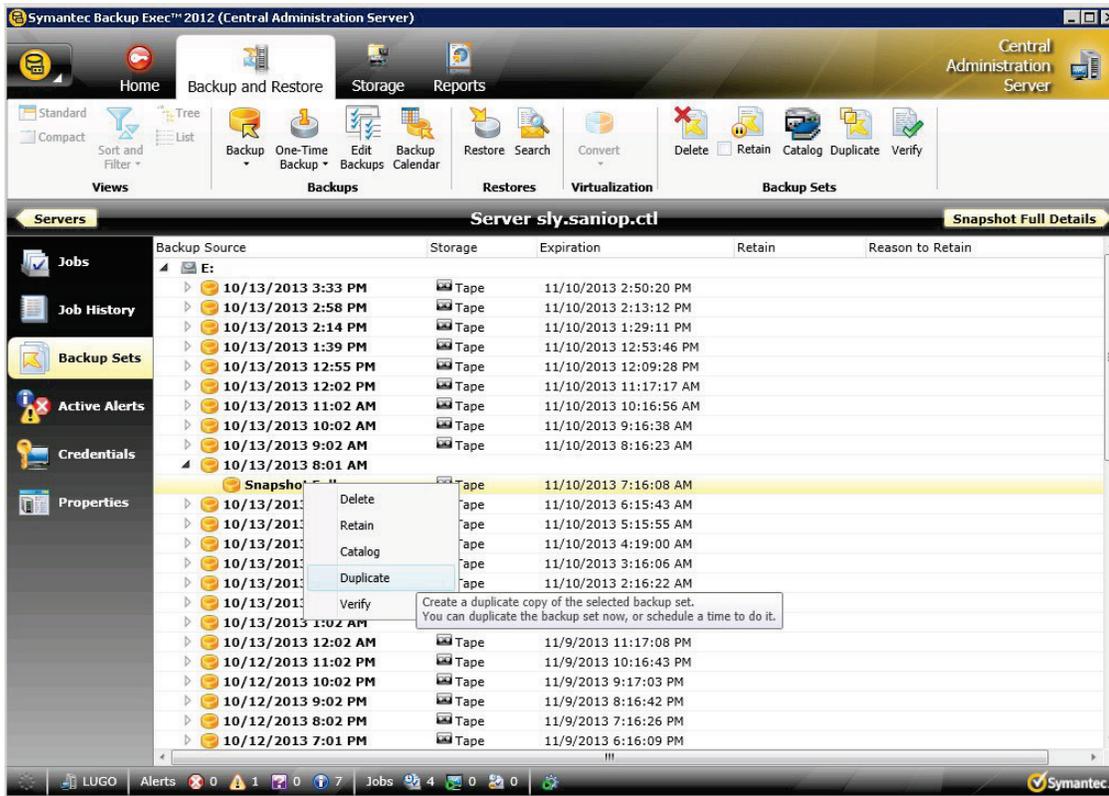


Figure 12. Duplicating backup sets—selecting a backup source to be duplicated

- 5. In the “Duplicate Job” interface that opens after selecting a backup set, verify all listed settings specifically that the storage device containing the tape to be copied to is selected and “Enable DirectCopy to Tape” is selected. See figure 13 as an example.

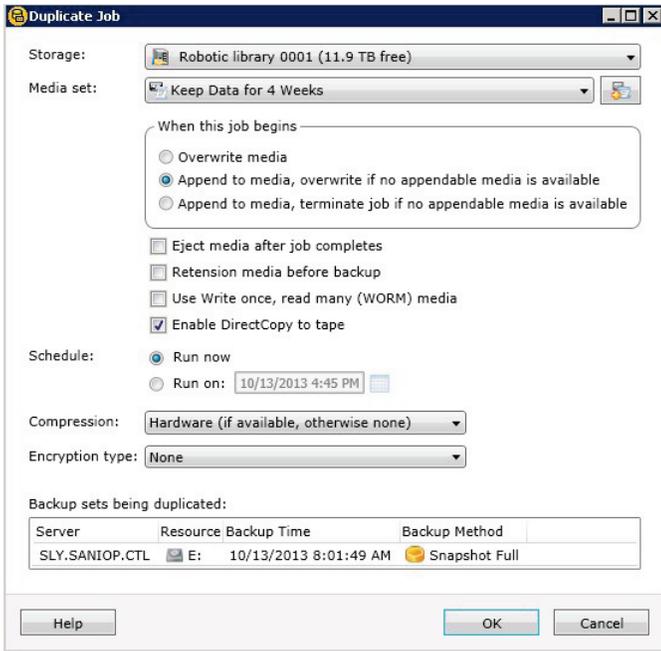


Figure 13. Duplicating backup sets—verifying settings for the duplicate job specifically enabling DirectCopy to Tape

6. Once OK is selected, the duplicate to tape job will begin.
7. You can view the status of the duplicate backup set by selecting “Jobs” from the list of options to the far left. See figure 14 as an example. Double-click on the duplicate backup set to view details of that job.

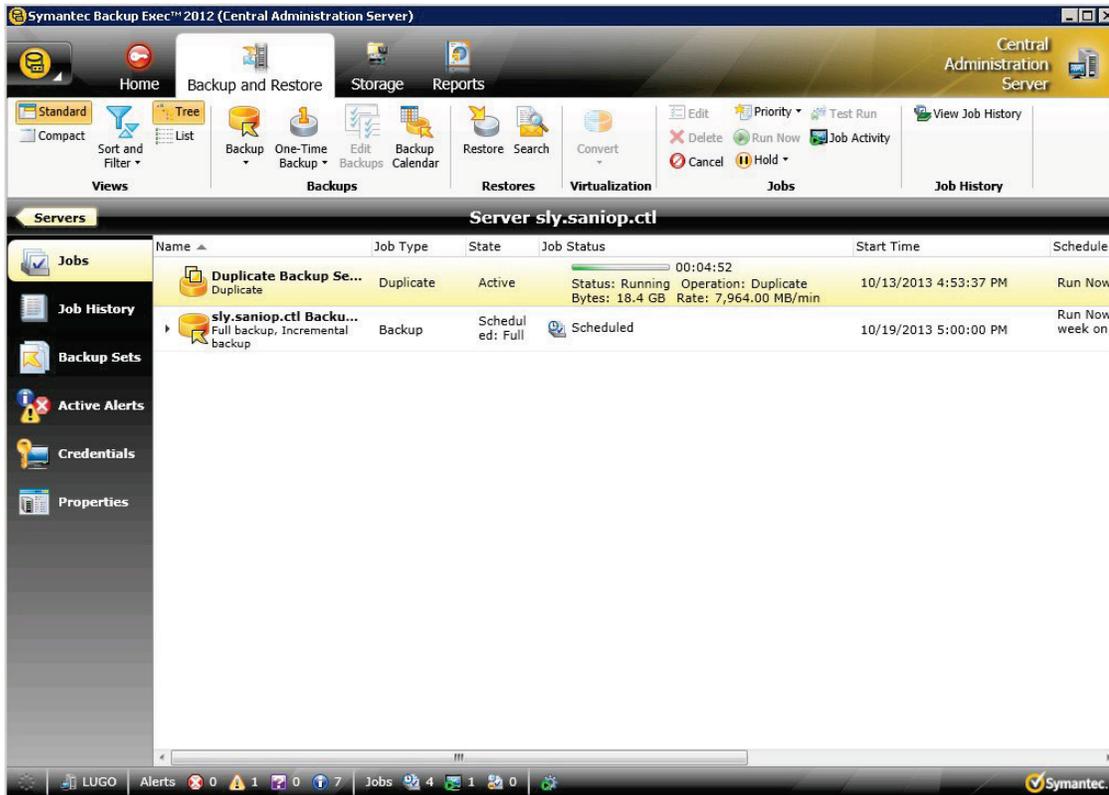


Figure 14. Duplicating backup sets—view the progress of the duplicate job

8. Alternatively, by selecting the “Storage” tab at the top of the Backup Exec GUI, the storage device, or devices, specified when configuring the duplicate job should each have tape drives with tapes loaded and a state of active. The tape barcodes or labels, if configured, will also be listed allowing verification that the tape containing the backup set to be duplicated is being used and which tape that backup set is being duplicated to.

Copying multiple backups

To copy multiple backup sets or datasets from one tape to another tape, you can do the following:

1. Follow the steps listed in the previous section for Backup Exec, copying a single backup, to view and expand the backup sets to be copied for a server.
2. Next, hold the CTRL key while clicking on the multiple backup sets to be copied then right-click and select “Duplicate” to launch the interface to specify the settings for the duplicate job.
3. Similar to copying a single backup set to another tape, the interface to specify settings for the duplicate job will open and all settings should be verified specifically that the destination storage device containing the tape(s) that the data will be copied to is selected and “Enable DirectCopy to Tape” is selected.
4. Once the settings for the duplicate job have been verified and OK is selected, the status of the duplicate job can be viewed by selecting “Jobs” from the list of selections to the far left.

Copying all media content

To copy all of the backup sets from a single tape or multiple tapes to another tape, you can do the following:

1. Select the “Storage” tab at the top of the Backup Exec GUI then beneath the Robotic Library containing the tape to be duplicated, double-click on “Slots”.
2. All of the tapes for that library will be listed. See figure 15 as an example. Double-click on the tape to be duplicated.

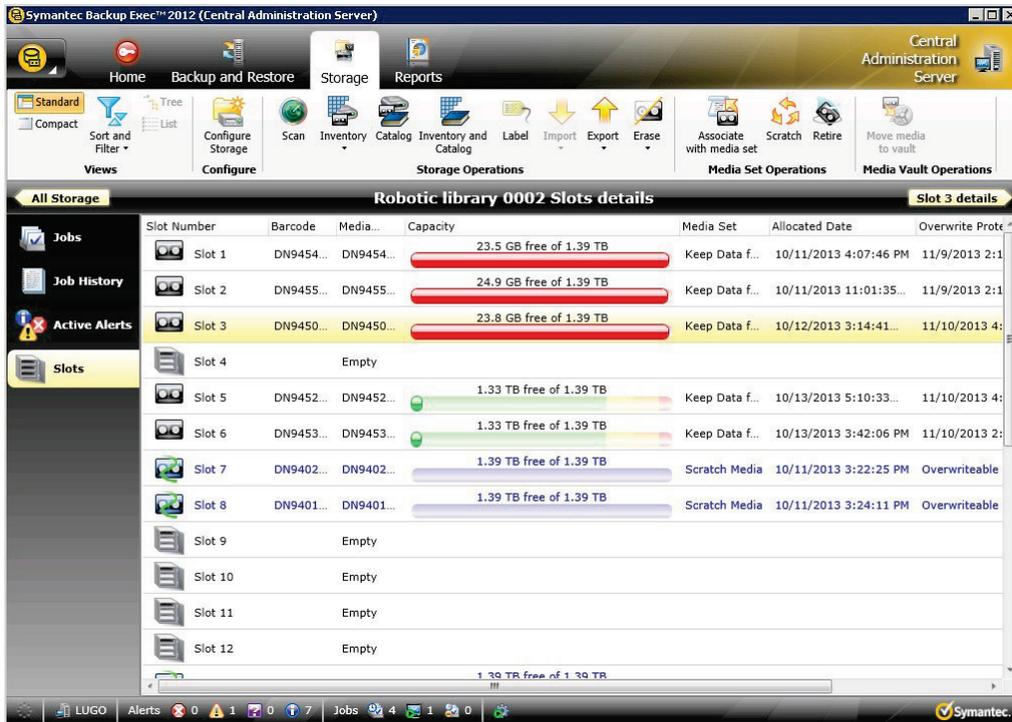


Figure 15. Duplicating backup sets—selecting the media to be duplicated

3. While viewing the details for the chosen slot, select “Backup Sets” from the far left of the Backup Exec GUI.
4. All of the backup sets contained on the chosen tape will be listed. Select all of the backup sets listed by clicking on the first backup set listed then while holding down on the shift key, click on the last backup set listed. This should select/highlight all of the backup sets simultaneously.

- Right-click and select “Duplicate” to start the process of copying data from one tape to another tape. See figure 16 as an example.

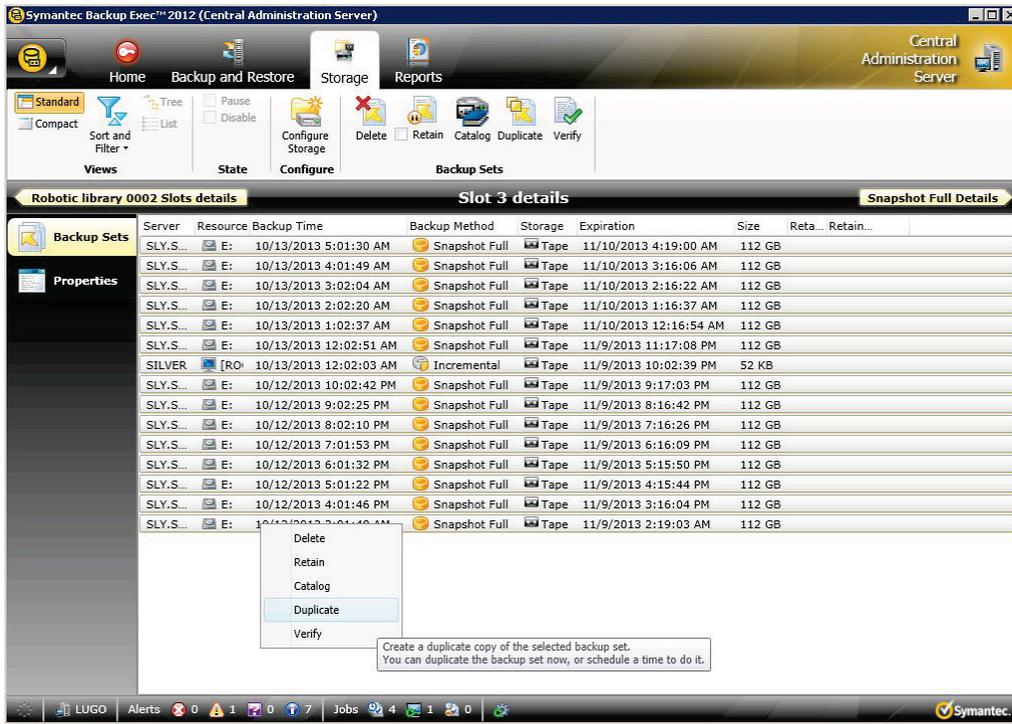


Figure 16. Duplicating backup sets—selecting all backup sets on the media for duplication

- Similar to copying a single backup set or multiple backup sets to another tape, the interface to specify settings for the duplicate job will open and all settings should be verified specifically that the destination storage device containing the tape(s) the data will be copied to is selected and “Enable DirectCopy to Tape” is selected.
- Once the settings for the duplicate job have been verified and OK is selected, the status of the duplicate job can be viewed by selecting “Jobs” from the list of selections to the far left.

Verification

Once any duplicate job completes, confirmation that the data was successfully copied to another tape can be verified as follows:

1. Select the “Storage” tab at the top of the Symantec Backup Exec graphical user interface (GUI). All storage configured for use with Backup Exec will be listed.
2. Double-click on “Slots” under the storage device that was used as the destination device to duplicate the source data from one tape to another tape. All tapes for that storage unit will be listed.
3. Double-click on the tape that the source data was duplicated to.
4. While viewing the properties for the chosen tape, select “Backup Sets” from the left pane. All backup sets on the tape will be listed.
5. Right-click on the backup set then select “Verify” to launch the interface to specify the settings for the verification job which will verify the integrity of the collection of data and the tape on which it resides for the selected backup set. See figure 17 as an example.

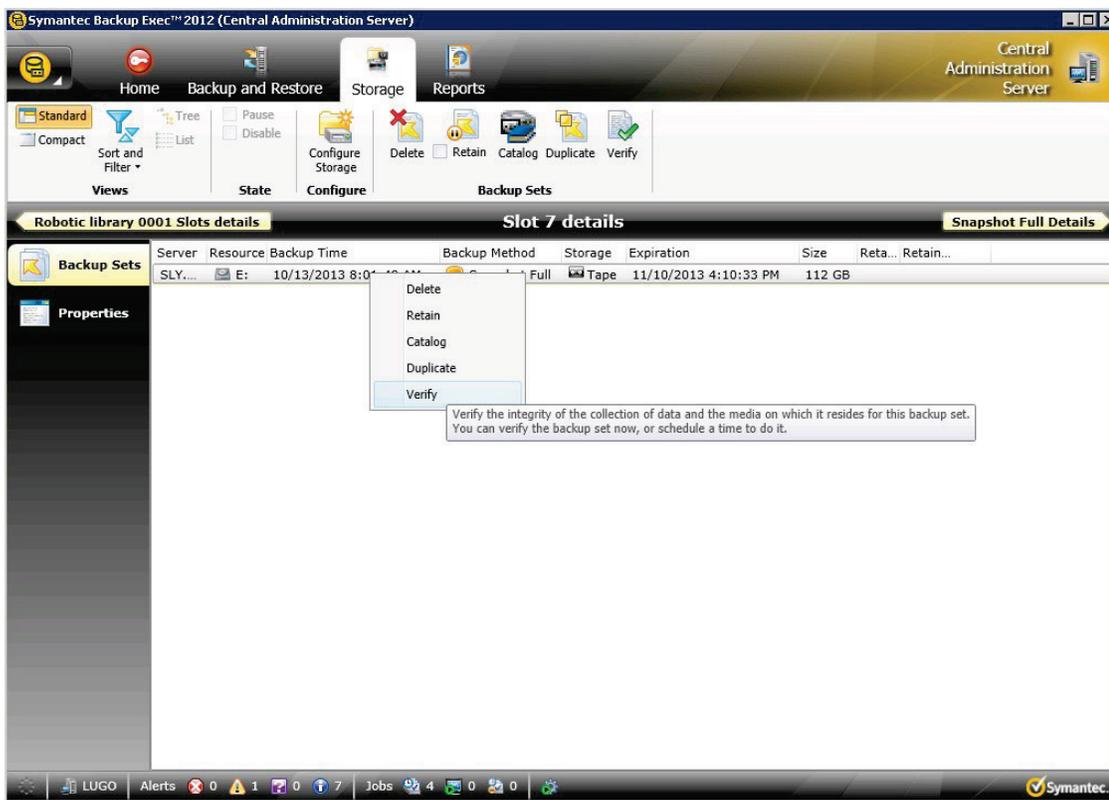


Figure 17. Verifying backup sets—selecting a backup set on the media for verification

- In the “Verify Job” interface that will open, verify all listed settings specifically that the storage device containing the tape to be verified to is selected which ensures that the storage device specified is capable of reading the selected tape. In this scenario, “Robotic library 0001” contains the tape, and corresponding backup set, to be verified so “Robotic library 0001” is the specified storage for the verify job. See figure 18 as an example.

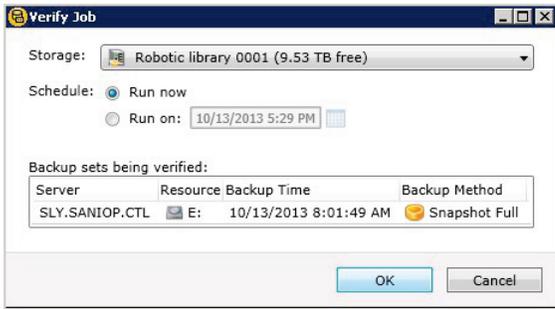


Figure 18. Verifying backup sets-verify the settings for the verify job

- You can view the status of the verification job by selecting the tab “Robotic library XXXX Slots details” (refer to the screen shot in step #5) above the left pane which returns to the “Robotic library XXXX Slots details” page.
- Double-click on “Jobs” in the left pane. All existing backup jobs that were created will be listed along with any jobs that are currently “Active”. The verify job should be displayed.
- Once the verify job completes, details for the job can be viewed by selecting “Job History” from the left pane then double-click on the completed verification job.

CommVault Simpana

Migrating data using Selective Copy with Auxiliary Copy

Copying a single backup

To copy an individual backup job or dataset from one tape to another tape, you can do the following:

1. The following conditions must be met:
 - a. The assigned media for the source library must not be protected from being copied. If the media has been protected from being copied, select it then right-click choosing “allow copy”. See figure 19 as an example.

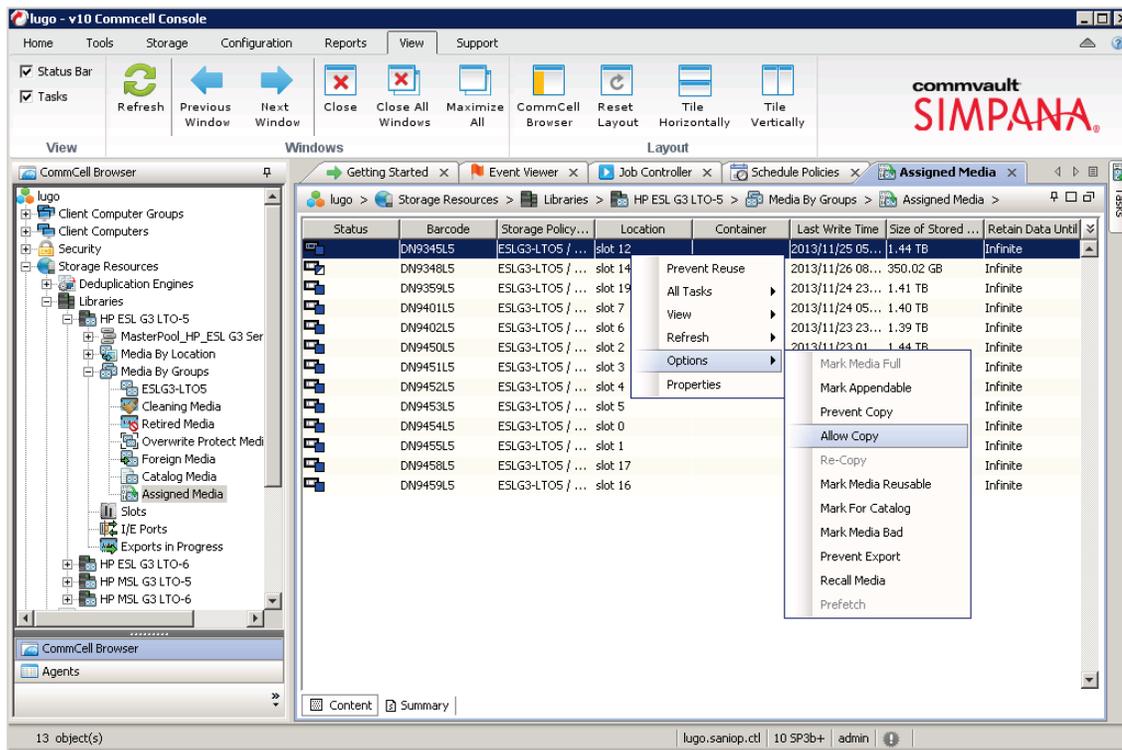


Figure 19. Allow Copy for assigned media

- b. The destination library must have scratch media available
 - c. The storage policy must have a secondary/selective copy created to run an auxiliary copy. Auxiliary copy is not allowed on a primary (original) copy of a storage policy
 - d. The secondary/selective copy of the storage policy must be configured to use the destination library
2. To create a secondary/selective policy, from the CommCell Browser, navigate to “Policies” then expand “Storage Policies”. Right-click on the storage policy that the backup jobs to be copied were created from, point to “All Tasks”, and then click “Create New Copy”.
3. “Copy Properties” dialog box appears.
4. In the “Copy Name” box, type a name for the storage policy copy.

5. Select the “Selective Copy” check box. The Selective Copy tab is now enabled.
 - a. Under the “Default Destination” section, specify the following:
 - b. From the “Library” list, select the name of library that will be used to create the selective copy.
 - c. From the “MediaAgent” list, select the name of a MediaAgent that will be used to create the selective copy.
 - d. From the “Drive Pool” list, select the name of a Drive Pool that will be used to create a selective copy.
 - e. From the “Scratch Pool list”, select the name of the Scratch Pool that will be used to create a selective copy. See figure 20 as an example.

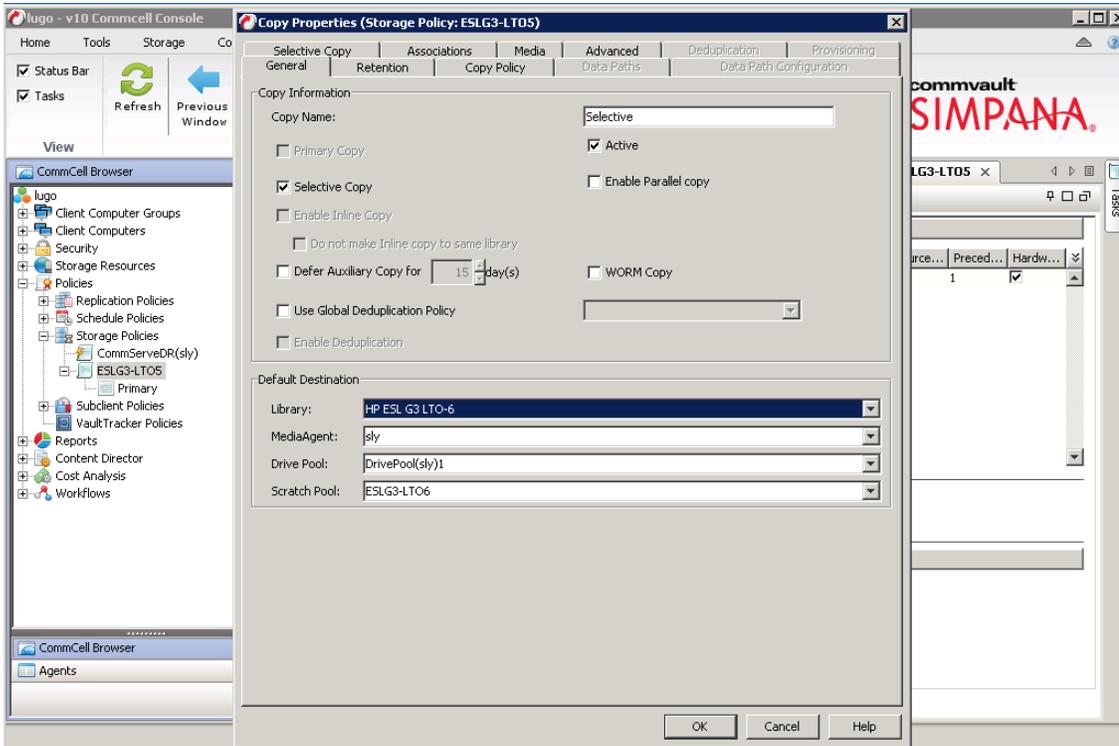


Figure 20. Properties for the storage policy copy. “General” tab.

6. Click the “Copy Policy” tab. Specify the selection criteria for the selective copy:
 - a. Under the “Backup Selection” section, clear “All Backups” check box.
 - b. For “Backups On and After”, specify the date to select the backup jobs after the specified date. The selection period for a selective copy is determined only by the copy creation time. The Backups on or After option does not affect the selection period for a given selective copy because this option is only used to decide which backup job after specified date is qualified to be picked. See figure 21 as an example.

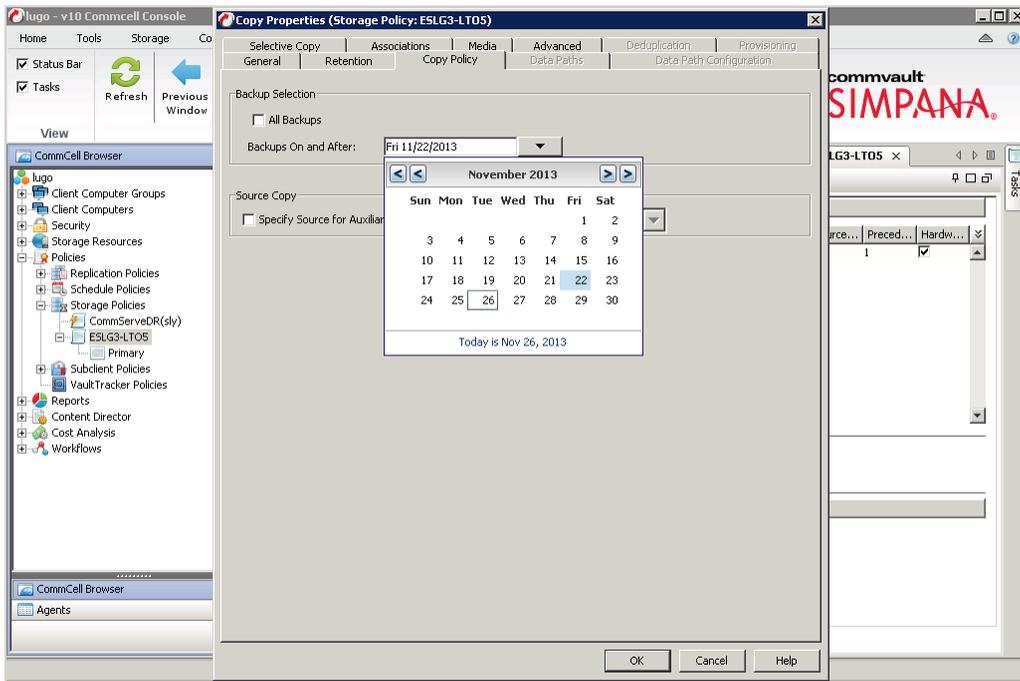


Figure 21. Properties for the storage policy copy. “Copy Policy” tab.

- Click the “Selective Copy” tab. Select “Do not Automatically select jobs” so that no backup jobs will be copied until they are manually selected for copy. See figure 22 as an example.

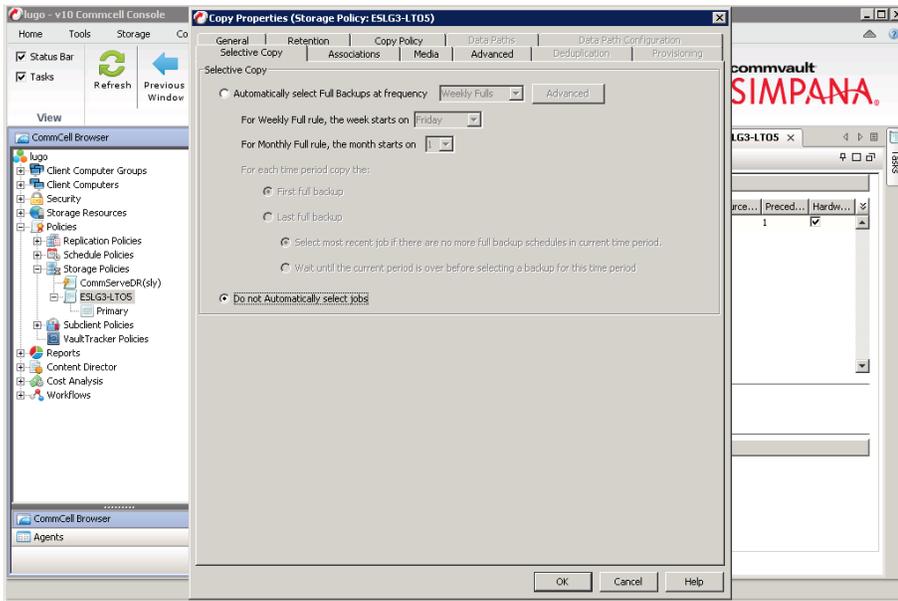


Figure 22. Properties for the storage policy copy. “Selective Copy” tab.

- Click OK. Auxiliary Copy Schedule dialog box appears.
- Select “Do Not Schedule” to manually determine when the auxiliary copy will be run. See figure 23 as an example.

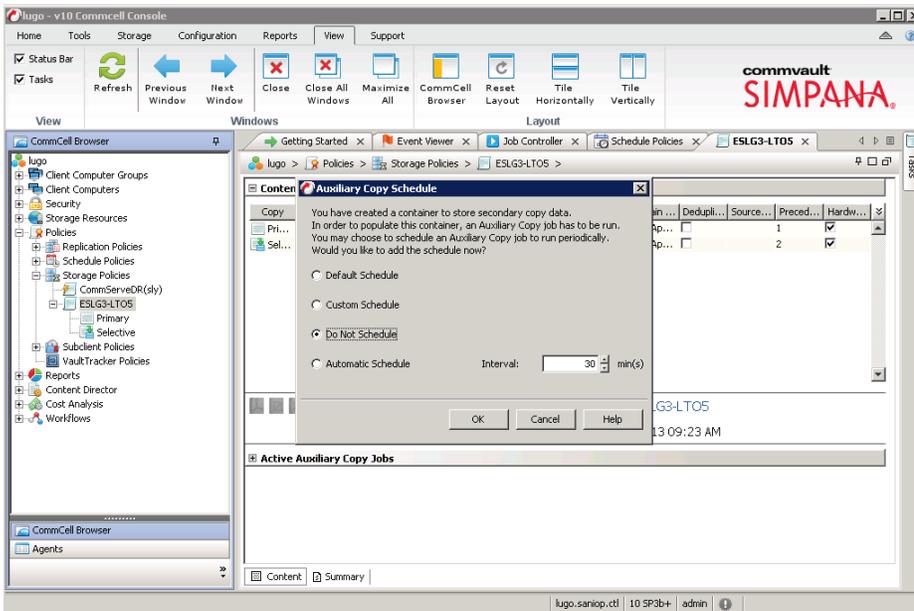


Figure 23. Configuring the Auxiliary Copy schedule.

- Click OK.

11. From the CommCell Browser, navigate to “Policies” then expand “Storage Policies”. The Selective Copy appears in the right pane of the CommCell Browser. This can be seen in figure 23 above.
12. Right-click on the selective copy, point to “View” and select “Jobs”.
13. Clear the “Specify Time Range” check box from the “Job Filter for Storage Policy” dialog box. By default, the jobs initiated in the past 24 hours are displayed. Clearing this option will display all the jobs associated with the copy. See figure 24 as an example.

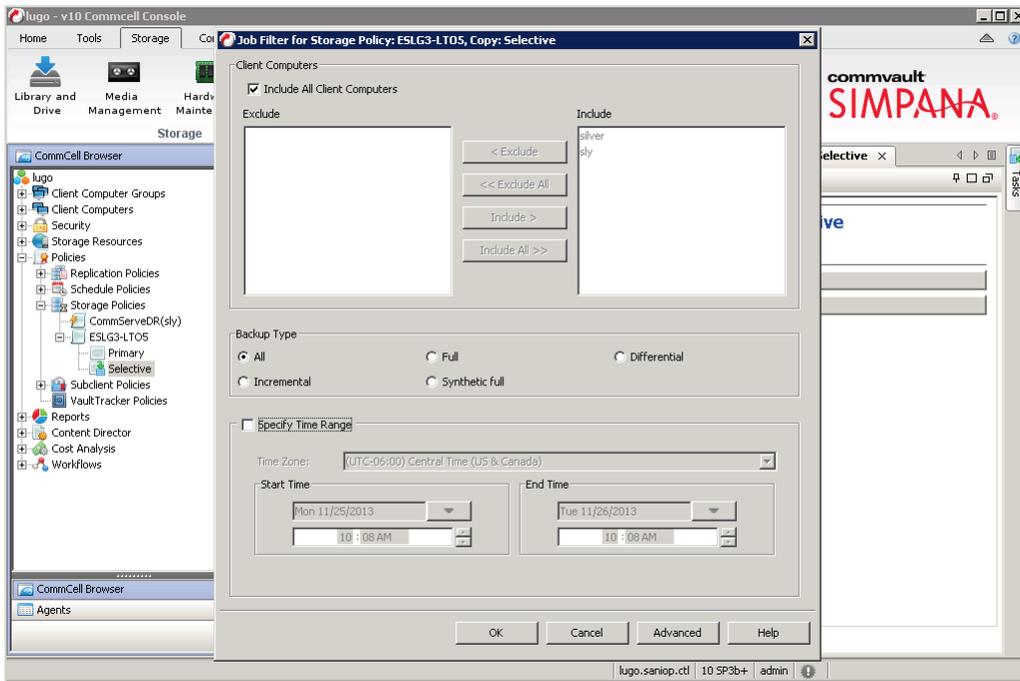


Figure 24. Modifying the job filter options for a storage policy

14. Click “Advanced” in the “Job Filter for Storage Policy” dialog box. Clear the following check boxes in the “Jobs in Storage Policy Advanced Filter Options” dialog box:
 - a. Available
 - b. Jobs that need to be copied

15. Select the “Jobs that will not be copied” checkbox in the Jobs in “Storage Policy Advanced Filter Options” dialog box. See figure 25 as an example.

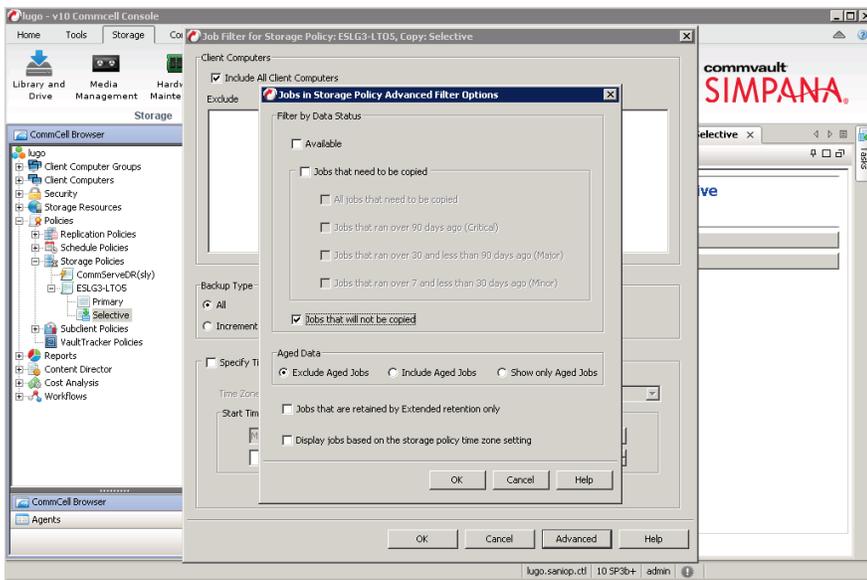


Figure 25. Modifying the job advanced filter options for a storage policy

16. Click “OK” to close the “Jobs in Storage Policy Advanced Filter Options” dialog box.
17. Click “OK” again to close the “Job Filter for Storage Policy” dialog box.
18. A list of jobs associated with the copy is displayed in the right pane of the CommCell browser. See figure 26 as an example.

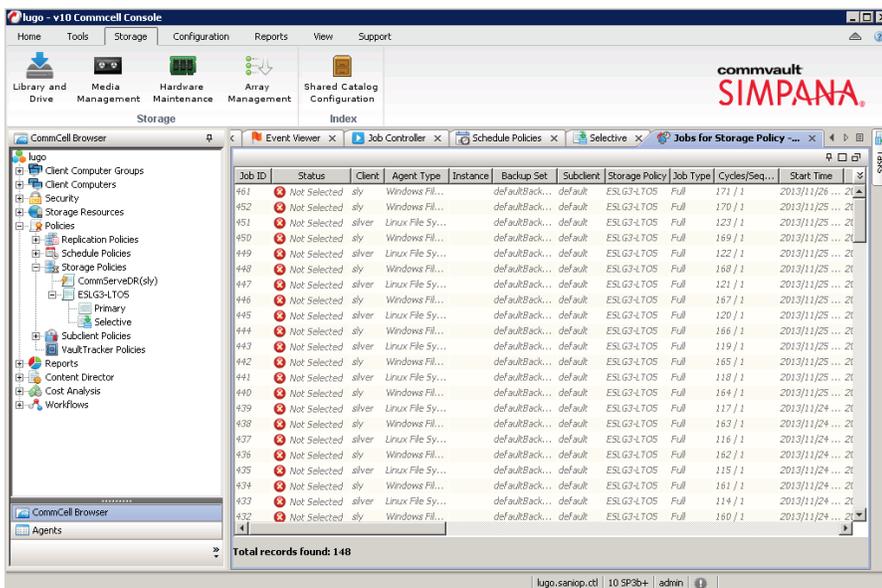


Figure 26. List of jobs associated with the storage policy copy

19. Right-click a job, then select “Pick For Copy”. See figure 27 as an example.

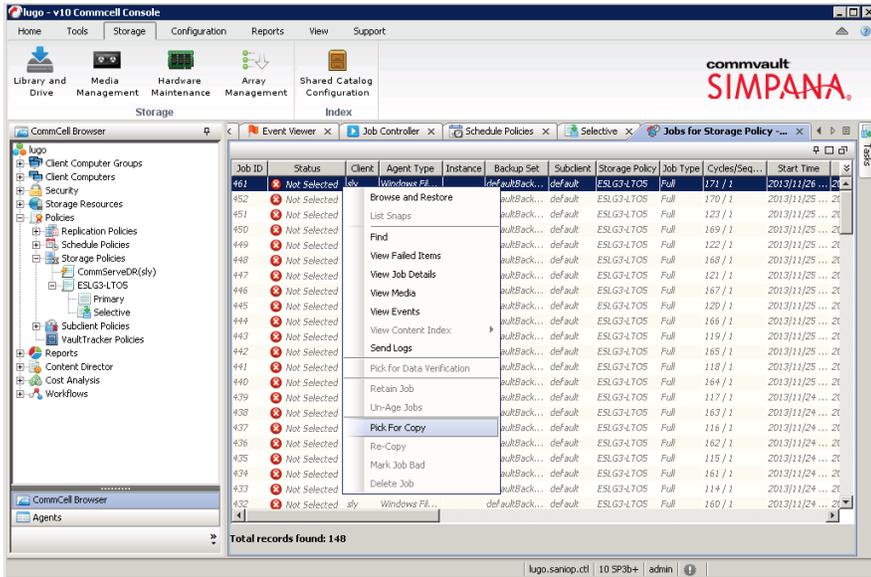


Figure 27. Selecting an individual backup job to be copied

20. A message will be displayed requiring confirmation that you really want to allow the selected job(s) to be copied. Click on “Yes”.

21. The job (461) that was picked for copy is no longer displayed as the view jobs criteria previously specified to list jobs that will not be copied (refer to step 15). See figure 28 as an example.

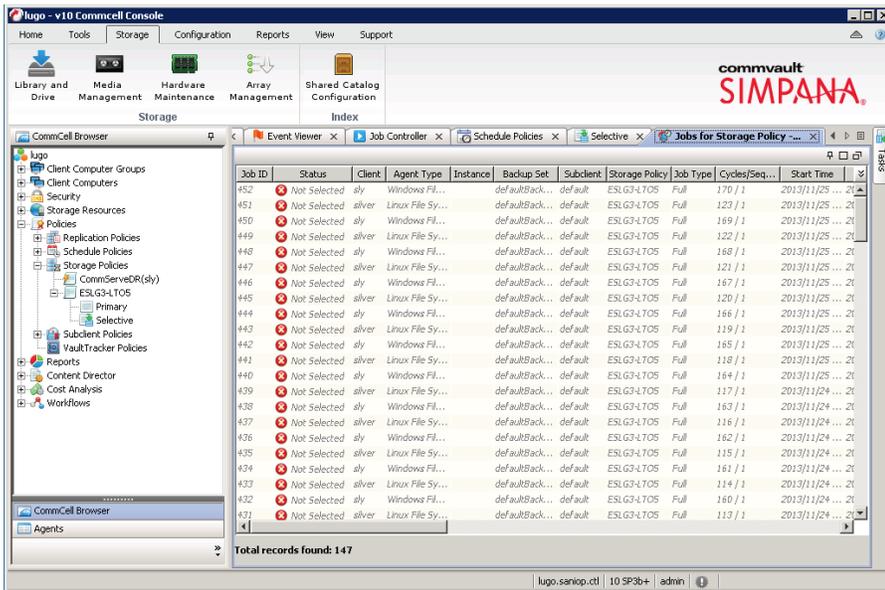


Figure 28. Job 461, picked for copy, is no longer listed

22. If you prefer to verify that the job is indeed selected to be copied, from the CommCell Browser, navigate to “Policies” then expand “Storage Policies”. The Selective Copy appears in the right pane of the CommCell Browser. This was previously seen in figure 24 above.
23. Right-click on the selective copy, point to “View” and select “Jobs”.
24. Leave all settings as is. By default the jobs initiated in the past 24 hours are displayed.
25. Click “OK” to close the “Job Filter for Storage Policy” dialog box.
26. A list of jobs associated with the copy is displayed in the right pane of the CommCell browser. Only the job, 461 in this example, picked for copy should be listed. See figure 29 as an example.

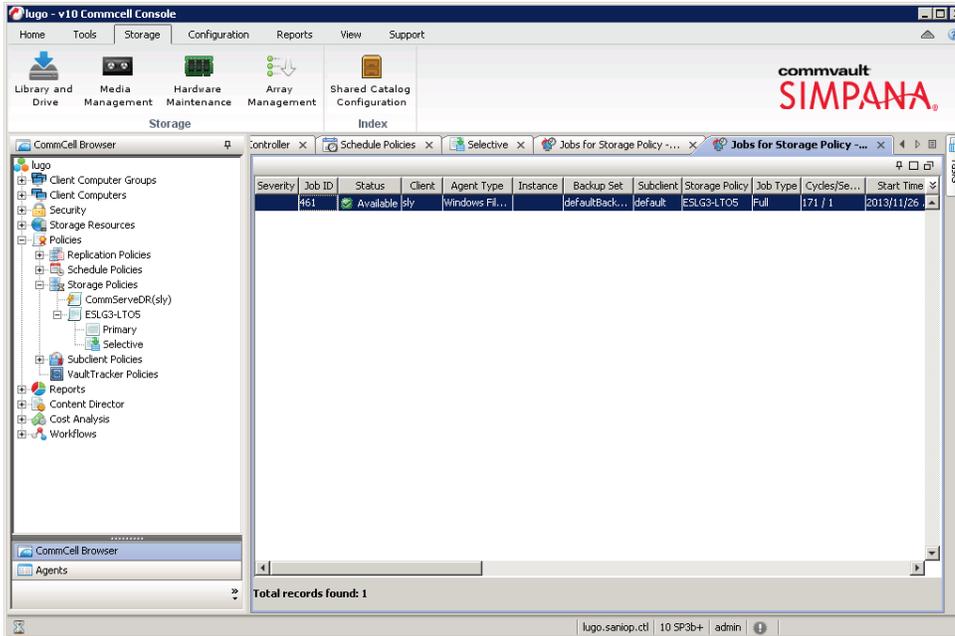


Figure 29. List of jobs associated with the storage policy copy

27. The job will now be copied to selective copy during the next auxiliary copy operation.
28. From the CommCell Browser, navigate to “Policies” then expand “Storage Policies”.
29. Right-click on the storage policy, point to “All Tasks” and select “Run Auxiliary Copy”.
30. The “Auxiliary Copy Job Options’ dialog box will be displayed. Under “Copy Selection” choose “Select A Copy”.

31. Choose the secondary/selective copy of the storage policy created in step 2. For this example, the secondary/selective copy is named “Selective”. See figure 30 as an example.

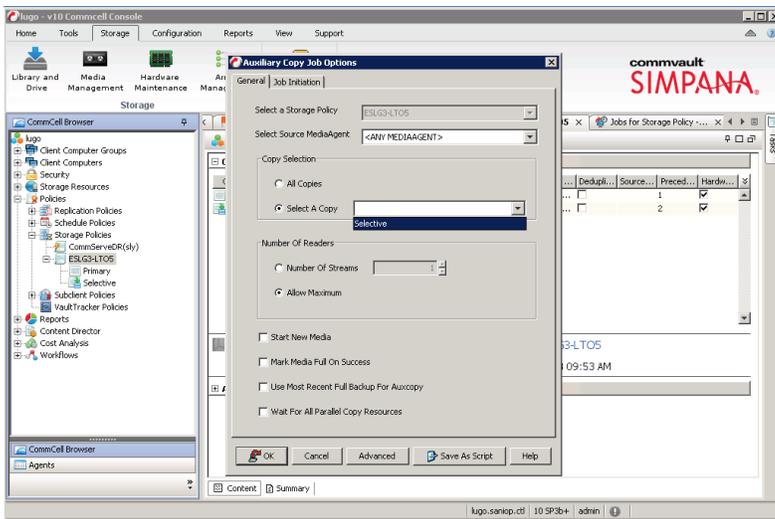


Figure 30. Auxiliary copy job options

32. Click “OK”. The auxiliary copy operation can be viewed by clicking on the “Job Controller” tab.

33. Details for the auxiliary copy job can be viewed by double-clicking on the job in the job controller. You can verify the settings specified while creating the secondary/selective copy were used.

34. While viewing the “Auxiliary Copy Job Details”, click on the “View Events” tab. All found events associated with the auxiliary copy job will be displayed. See figure 31 as an example. You can see that both Ultrium LTO-5 and Ultrium LTO- 6 media are being used in the example.

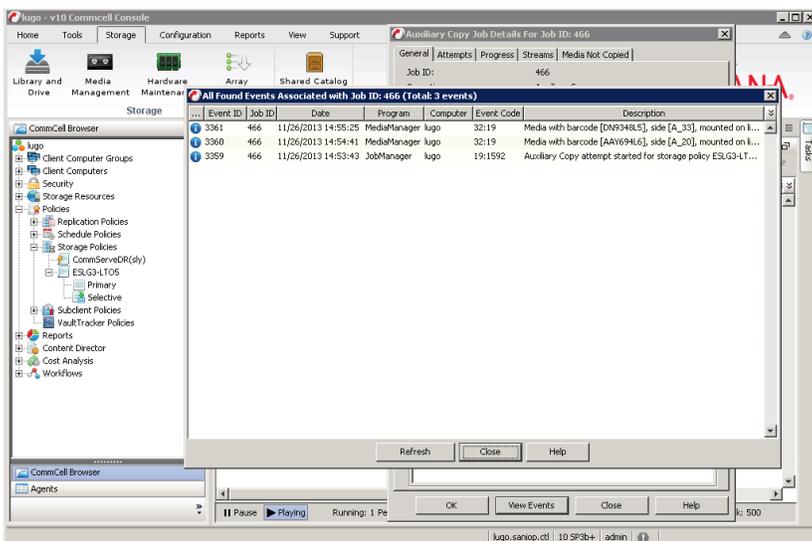


Figure 31. Viewing all found events associated with the auxiliary copy job

Copying multiple backups

To copy multiple backup sets or datasets from one tape to another tape, you can do the following:

1. Follow the steps 11-18 listed in the previous section for CommVault, copying a single backup, to view the backup jobs available to be copied for the secondary/selective copy of a storage policy.
2. Next, hold the CTRL or shift key while clicking on the multiple backup jobs to be copied then right-click and select “Pick For Copy”. See figure 32 as an example.

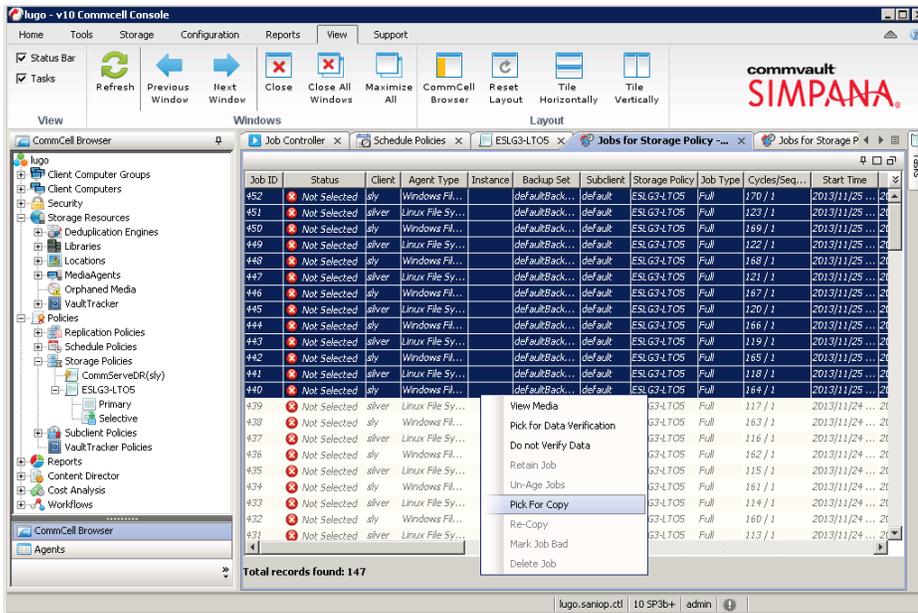


Figure 32. Selecting multiple backup jobs to be copied

3. Similar to copying a single backup job to another tape, a message will be displayed requiring confirmation that you really want to allow the selected job(s) to be copied. Click on “Yes”.
4. The jobs (440-452) that were picked for copy are no longer displayed as the view jobs criteria previously specified to list jobs that will not be copied (refer to step 15).

- You can follow steps 22-26 from the previous section for CommVault, copying a single backup, to have a list of jobs associated with the copy displayed in the right pane of the CommCell browser. Jobs 440-452 should all be listed with a status of "To Be Copied". See figure 33 as an example.

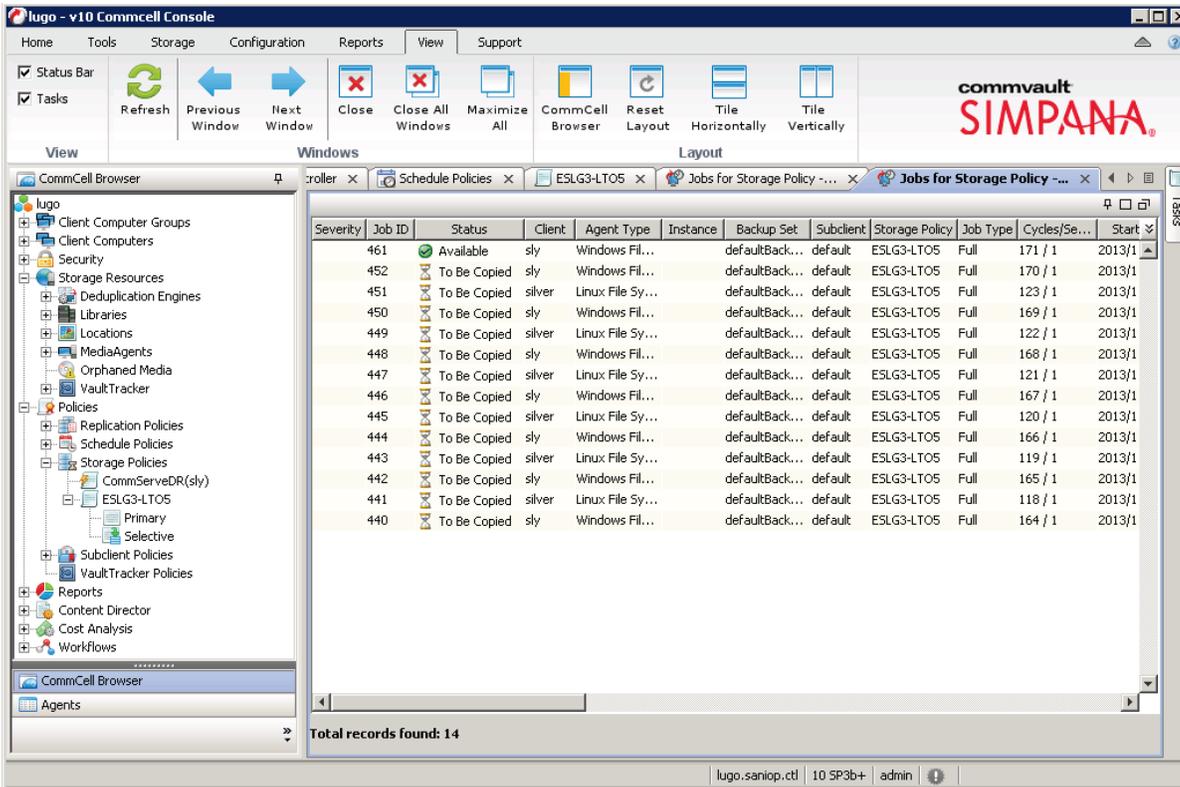


Figure 33. List of jobs associated with the storage policy copy

- The job will now be copied to selective copy during the next auxiliary copy operation.
- Follow steps 28-32 to run an auxiliary copy.

Verification

Once any auxiliary copy job completes, confirmation that the data was successfully copied to another tape can be verified as follows:

1. From the CommCell Browser, navigate to “Policies” then expand “Storage Policies”. The Selective Copy appears in the right pane of the CommCell Browser. This can be seen in figure 24.
2. Right-click on the selective copy, point to “View” and select “Jobs”.
3. Modify the “Specify Time Range” check box from the “Job Filter for Storage Policy” dialog box. By default, the jobs initiated in the past 24 hours are displayed. Set the “Start Time” and “End Time” to include the date and time that the selective copy or copies were created to display all the jobs associated with the copy. See figure 24 as an example of the dialog box.
4. Click “OK” to view a list of the jobs meeting the specified criteria. See figure 34 as an example—Job 461 is the only job listed as the dates specified were for 11/26 only.

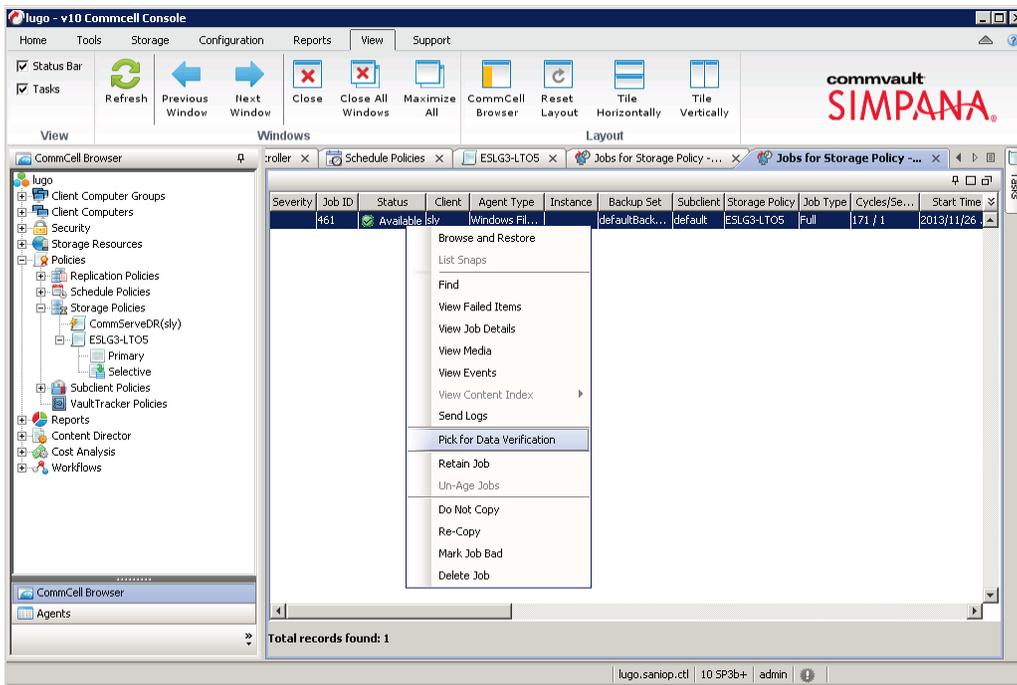


Figure 34. List of jobs associated with the selective copy policy

- After picking the job for data verification, you can scroll to the right and under the “Data Verification” column the job will display “Picked for verification”. See figure 35 as an example.

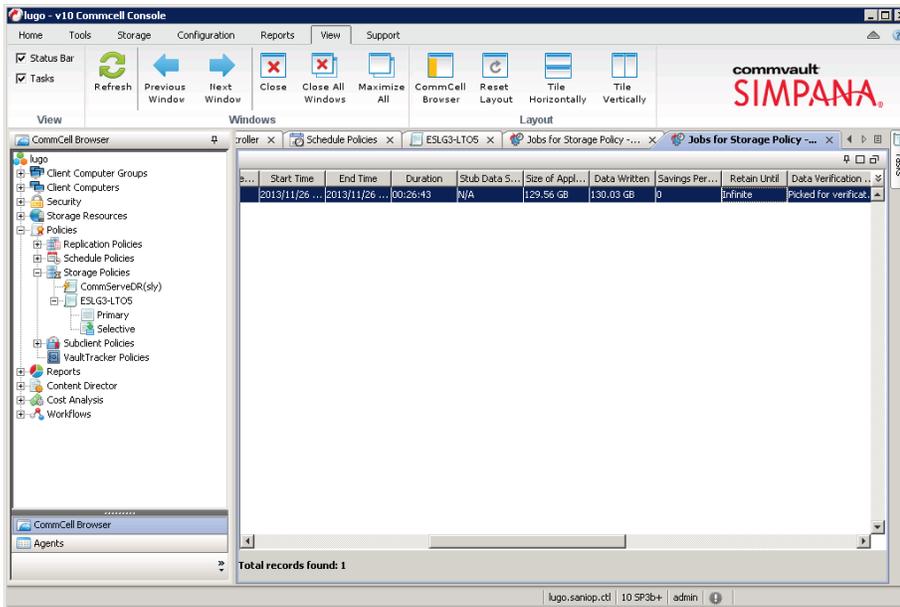


Figure 35. Verifying job status displays “Picked for verification”

- Right-click on the selective storage policy, point to “All Tasks”, and then select “Run Data Verification”.
- The “Data Verification” dialog box will be displayed. Under “Copy Selection”, choose “Select A Copy” then from the drop-down select “Selective” (or the selective copy policy name specified when you created the copy of the primary storage policy). See figure 36 as an example.

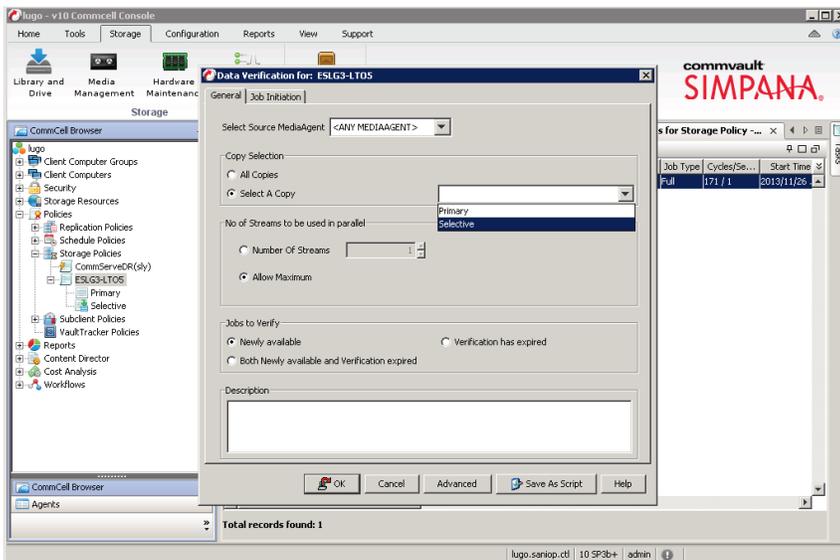


Figure 36. Data Verification dialog box

- Click “OK” to start the data verification job.

9. View the progress of the data verification job in the “Job Controller”.
10. You can verify the tape drive(s) being used for the data verification job by double-clicking on the job. Doing so will open the job detail dialog box. By clicking on the “Streams” tab and scrolling to the right, the source drive will be listed. For this example, the expected drive should be an Ultrium LTO-6 tape drive rather than an Ultrium LTO-5 drive because the copy was made using the Ultrium LTO-6 tape drive. The original copy was made using the Ultrium LTO-5 tape drive. See figure 37 as an example.

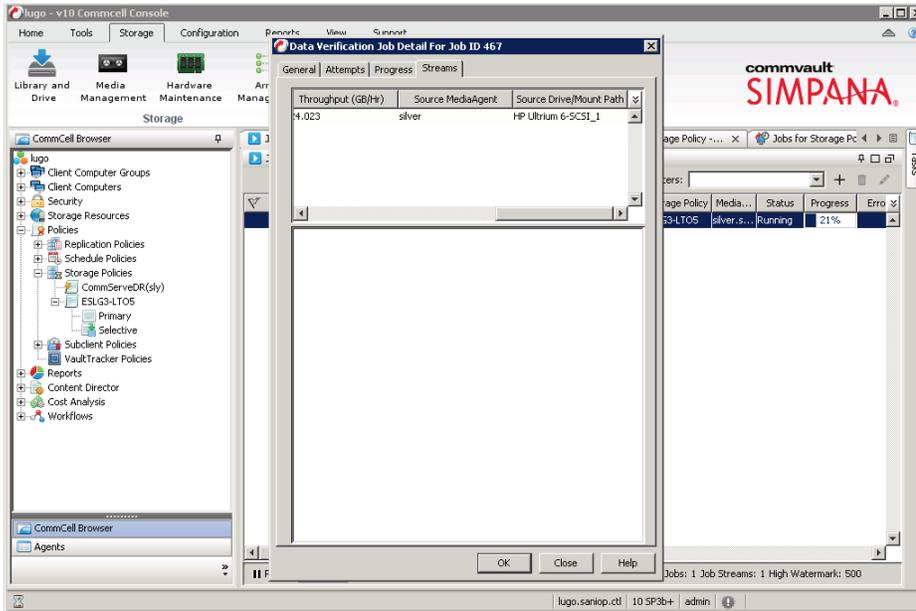


Figure 37. Verifying the source drive being used for data verification

Conclusion

As the amount of digital data continues to grow at an exponential rate, so do the challenges of managing your data protection infrastructure. Hewlett Packard Enterprise understands these challenges and offers a comprehensive range of reliable data protection storage solutions allowing customers to maximize the value from their data over its entire lifecycle while minimizing total cost of ownership. HPE StoreEver Tape systems offer significant cost, energy and footprint advantages, while addressing data growth by adding drives and capacity on-demand as needed. The next-generation families of HPE StoreEver Tape systems integrate easily with multiple data protection applications and are a critical component for comprehensive data protection and archiving.

One of the many challenges of managing your data protection infrastructure is data migration. Migrating data from legacy tape technology to a new tape technology offers many advantages such as reducing the complexity of managing multiple devices and media, reducing the number of required media cartridges, and more than doubling the tape drive performance. Fulfill your business need for secure data protection, efficient storage consolidation, and easy management with the HPE StoreEver LTO tape family.

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[Symantec NetBackup support](#)

[Symantec Backup Exec support](#)

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