BackBox© E5.01 Catalog Sync Option

Abstract

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PREFACE

The BackBox Catalog Sync Option describes a D/R plan by replicating the DSM/TC and BackBox tape catalogs.

The data replication is not handled by Catalog Sync.

To enable the Catalog Sync Option a specific license is required. Contact ETI-NET Support to have this option enabled.

Related Documentation

- BackBox Nonstop Installation Guide
- BackBox User Manual
- BackBox Messages Manual and Troubleshooting

INTRODUCTION

BackBox VTC replicates ETI-NET BackBox and HPE DSM/TC catalogs from a primary Nonstop system to a secondary system. The replicated information is:

- The BackBox catalog
- The DSM/TC catalog entries related to BackBox volumes (TAPEVOLUME, TAPEFILE and optionally DISKFILE).

The data replication (the image of tape volumes written by the Nonstop backups) is independent of the metadata replication. The data replication remains under the responsibility of the user and depends on the storage technology used:
BackBox duplicates Windows files through LUN mirroring, BackBox scripts or the replication feature of high-end NAS, such as StoreOnce and DataDomain.

A third replication is required for encrypted volumes, whereby the replication of the encryption keys is stored in a Key Manager, such as HPE ESKM.

The user is responsible for enabling the replication offered by the Key Manager and for configuring, in the SECONDARY BackBox domain, a Key Manager with the same BackBox ID that points to the SECONDARY Key Manager that contains the replicated keys.

Notes:

- The volume labels must be unique in the enterprise to copy tape volume data and metadata from environment to environment.

  The Nonstop tape environment issues mount requests only for labeled volumes; in a Nonstop node, the volumes' labels have to be unique to ensure that the tapes are correctly mounted.

  A tape label must be unique in a BackBox domain.

  A tape label must be unique in the DSM/TC SSL (System Search List). Primary and SECONDARY systems linked by SSL are incompatible with volume duplication. For more information see DSM/TC Management.

- Even if restore tests using the replicated catalogs are successfully executed during the setup, an additional verification must be carried out once all configuration activities have been completed.

  A DSM/TC catalog updated by both locally executed backups and by BackBox import processes could be at risk: as soon as a tape volume label or a tapefile field is not unique across both environments, the DSM/TC catalog would become corrupted.

The catalog replication is implemented by two independent operations executed in two distinct BackBox domains:

1. New catalog information is automatically exported from the primary site as soon as possible after each backup execution and it is written to a staging disk area in the SECONDARY site.
2. The catalogs of the SECONDARY site are updated (from the staging area) by import processes, manually initiated through BackBox UI or scheduled in NetBatch.

Full catalog re-synchronization can also be scheduled or initiated manually. The catalog information is transferred over the Expand network.

When Expand is not available between primary and SECONDARY systems, an intermediate area can be used. The user is responsible for moving the export files from this intermediate area to the SECONDARY system. See Appendix A – Transport Without Expand for a sample setup of backup/restore.

Catalog export and import are configured and operated through the BackBox UI Client. Operations can also be triggered by TACL macros that can be included in jobs scheduled in NetBatch.

When the BackBox domain license contains the Catalog Sync option, new pages and new elements appear in BackBox UI. These specific elements of the Catalog Sync are described in this manual. For the other features refer to the

appropriate documentation.

Export and import can also be used to migrate parts of a DSM/TC catalog from one node to another or to merge/split a BackBox domain Data Store by Data Store. See also theData Store Detach function in the BackBox User Manual.

High-Level Operations

For all BackBox installations, the catalog replication works the same way. The replication over Expand is executed in two steps:

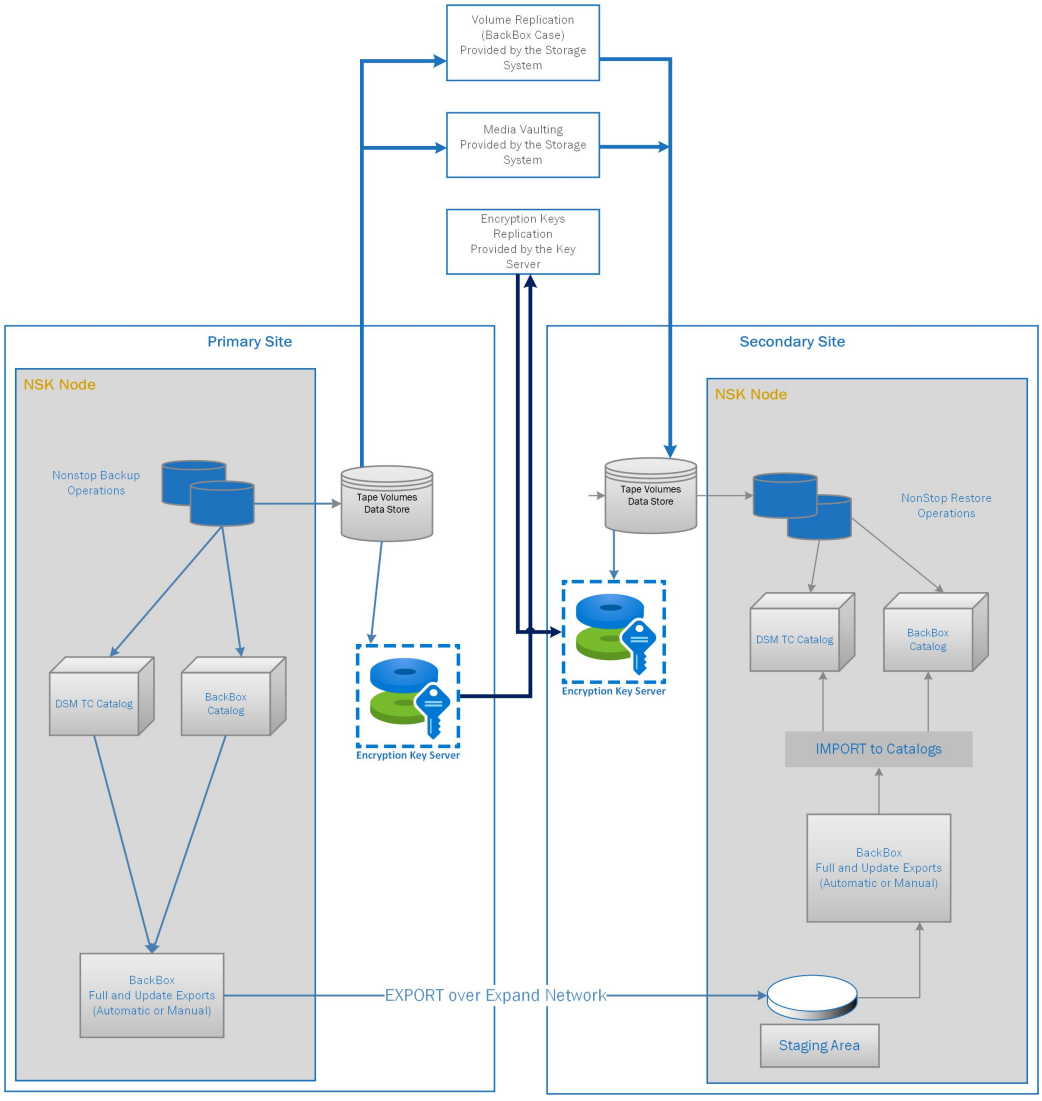
1. In the primary system, as soon as a tape volume written by a tape application is unloaded, the related new catalog information is sent by automatic Export processes to a staging area on the remote SECONDARY system.

   There are, as well, other events, such as creation of tape volumes, that initiate Export processes.

2. In the SECONDARY system, the BackBox and DSM/TC catalogs are updated from the staging area by Import processes initiated manually through the BackBox UI or automatically by TACL commands scheduled in NetBatch.

   The staging area always contains all the catalog information required to re-execute a full import and rebuild the BackBox and DSM/TC catalog entries.

   Successive exports will rewrite the same export files. No cleanup of the staging area is required, even if no import was executed – although regular imports ensure the good reconstruction of metadata before the site recovery event.



Unit of Management

The purpose of a replication is not to replicate the entire BackBox VOLUME file or the entire DSM/TC VOLCAT or FILECAT, but the set of entries in these files related to a specific Data Store and to all its volumes. The Data Store is the main entity that is managed by Catalog Sync Operations. Incremental changes are transferred volume per volume.

On the replication source side, the BackBox domain has PRIMARY access to the Data Store. On the target side, the

receiving domain has SECONDARY access to the replicated Data Store.

There is no longer a need to reserve dedicated BackBox domains for Catalog Sync. A BackBox domain defines a tape processing environment where both primary andSECONDARY Data Stores can be included.

In sites where a BackBox domain was implemented for each Nonstop node, these same domains can operate both the normal “primary” activity of the node and the other “SECONDARY” activity for other nodes in remote domains.

A primary Data Store can become SECONDARY and vice-versa. It is the user’s responsibility to maintain coherent roles between domains.

The corresponding Data Store and Volume Groups should ideally have the same name in the two domains. It is possible to use different names on the SECONDARY side. When they are different, the original primary name is entered in the SECONDARY side configuration. For more information, consult the BackBox User Manual and Import Configuration section.

DSM/TC MANAGEMENT

The unit of management of an export/import operation for the DSM/TC consists of all entries (TAPEVOLUME, TAPEFILE, DISKFILE) related to the volumes of a BackBox Data Store. Entries not related to these BackBox volumes are not impacted by the replication.

DSM/TC System Search List (SSL)

In the DSM/TC, the replication of volumes on the SECONDARY Nonstop systems will create instances of the same volume labels that violate the label uniqueness rule of the DSM/TC, if the two systems are present in a SSL.

Primary and SECONDARY systems must not belong to the same SSL. Before initiating export/import operations, check and adjust the SSL on each side by:

MEDIACOM INFO MEDIADEFS
MEDIACOM ALTER MEDIADEFS , SSL
(...)

Number of DSM/TC Catalogs on the SECONDARY Site

Although the same DSM/TC catalog can contain the backup metadata executed locally (primary Data Store) and the result of a BackBox Catalog Sync import (SECONDARY Data Store), and non-BackBox volumes, it is suggested that a distinct DSM/TC catalog be created to receive the entries created by the BackBox Catalog Sync Import for each primary source.

The isolation is useful because:

- the FILEID naming convention generally does not ensure the uniqueness of a FILEID across an enterprise; the collision between FILEID created by DSM/TC for local backups and FILEID created by BackBox will corrupt the DSM/TC catalog.
- a greater granularity of distinct catalogs allows better management of these catalogs by the means of BACKUP/RESTORE and by the patterns within MEDIACOM commands.

Because a PRIMARY system can become SECONDARY, it is also recommended to isolate the source of the DSM/TC replication in a separate catalog.

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Between a primary and a SECONDARY site, the DSM/TC VOLCAT, FILECAT names are typically different – at least by their node name. There are cases of 'mirror' nodes where the node name is identical. For further information, see SECONDARY Data Store Configuration.

The POOL names can be either identical or different, without having any adverse impact.

Volume Labels

	A tape volume name (tape label) must be unique in a DSM/TC system search space. That system search space can encompass the two Nonstop systems on Expand, primary and SECONDARY systems.

It is impossible to insert in the SECONDARY environment a volume with the same name as the existing one in the primary environment.

To bypass such an issue, it could be possible to create a DSM/TC SECONDARY pool to exclude the name from the system search space. To properly manage the name duplicates:

1. the DSM/TC requires that volumes in such pools be used with the specification of a tape drive in the TAPECATALOG DEFINE.
2. BackBox, which requires label uniqueness, will need two or more BackBox domains to operate all volumes.

Specifying a certain tape drive in TAPE DEFINE prevents the BackBox automatic drive selection and also requires additional care to avoid conflicts between concurrent jobs.

When both primary and SECONDARY systems are on Expand, the scope of the DSM/TC system search space is normally reduced:

- With the replication, the need for remote DSM/TC operations is reduced
- As all volumes are known by the two BackBox domains, the risk of creating different volumes with the same label is limited to the elapsed time between the creation on one side and the import of this volume on the other side.

Node Name in DSM/TC Catalogs

A Nonstop node name is present in two areas of the DSM/TC catalog:

In TAPEVOLUME and TAPEFILE entries, there is a node name qualifying the VOLCAT and FILECAT names.

In DISKFILE entries, the name of backed up disk files is qualified by a node name.

For TAPEVOLUME and TAPEFILE, the fully qualified catalog names are updated by the BackBox import functionality. These VOLCAT/FILECAT names must identify existing DSM/TC catalogs in the SECONDARY site accessible locally or via Expand by the BackBox domain manager.

For DISKFILE, there are two cases:

Case 1: If the node names present in the disk file names are known by the SECONDARY system, there is no problem to use the original name of backed up files. In MEDIACOM, the LOCALTOREMOTE parameter of the RECOVER DISKFILE command might be required.
Case 2: If the node name present in the disk filenames are not known by the SECONDARY system, MEDIACOM rejects commands qualifying the disk file name or pattern by these unknown nodes.
For example:

```
MC>INFO DISKFILE \NODEP.$*.*.*
**ERROR-5048** DISKFILE \NODEP.$*.*.* is invalid.
```

This makes replicated DISKFILE entries useless and might create subsequent difficulties in DSM/TC processing.

BackBox provides two possibilities for bypassing this constraint:

1) The user can prevent DISKFILEs from being replicated at the time of export and/or at the time of job import submission. Only TAPEVOLUME and TAPEFILE will be replicated.

2) The user can configure BackBox to replace the original node names of backed up disk files by other node names that are valid in the SECONDARY system.

This node name replacement is a way to automate what is described by the HPE note 100.0.3006075.2839037 in the HPE Nonstop Knowledge Base DSM/TC: How to adjust a FILECAT containing CATALOGFILES for a missing system

A list of node name pairs (old value, new value) must be entered in the configuration of the catalog import at the Data Store level. In all catalog import processes for this Data Store, the node part of the disk file name will be adjusted in the inserted DISKFILE entries.

⚠	This file name change is likely to create confusion in the catalog if the target FILECAT for the replication also contains the disk files backed up by the SECONDARY system.

It is recommended to isolate in a separate FILECAT the entries where the disk file names are modified by BackBox. The BackBox configuration partially enforces this isolation on the system running the Domain Manager.

⚠	If the node replacement in the disk file name is configured for the Data Store, no Volume Group in this Data Store can direct the replicated DISKFILEs in a FILECAT that is also the default FILECAT in MEDIACOM/MEDIADEFS.

Additional Notes:

- VOLCAT is not involved with the change of disk file names. The change of disk file names is not a reason to isolate a VOLCAT as a target of replication, although there is a general recommendation to isolate the DSM/TC entries replicated by BackBox from the entries created by BACKUP executed on the SECONDARY local system. It is recommended that a dedicated VOLCAT and FILECAT be created to receive the replicated entries.
- The user should carefully plan for potential consequences before changing the node name in the disk file names of replicated DISKFILE entries.

Types of Data Store Processing

A BackBox domain processes the tape volumes of a Data Store depending on the Domain Access configured for the Data Store.

Domain Access	Usage	Attributes
PRIMARY	Normal Data Store. Possible source of catalog replication.	OWNER attributes have the value for Data Stores
SECONDARY	Data Store prepared for a backup site. Target of a catalog replication from a primary Data Store.	None
RESTRICTED	Manual registration of BackBox tape volumes that already exist in storage. For manual recovery of lost BackBox metadata on Nonstop, or for ad-hoc sharing of volumes across different domains.	Identical to previous RESTRICTED

Domain Access	BackBox Volume Creation	Catalog Export	Catalog Import	Load for Input	Load for Output	Daily Cleanup FREE_EXPIRED DEL_BACKEDUP
PRIMARY	Write the tape in Data Store Write the catalogs (BackBox, DSMTC, TMF)	OK	No	OK	OK	Executed
SECONDARY	Rejected	No	OK	OK	Rejected	Skipped
RESTRICTED	No write to tape in Data Store Write BackBox catalog No write to DSMTC & TMF	No	No	OK	Rejected	Skipped

Data Store De-Activation

As additional control, a Data Store can be de-activated by configuration. This will disable all automated actions and most manual actions on the Data Store. Requests to load tape volumes in particular will be rejected.

The catalog export and import functions initiated through BackBox UI will still be allowed on de-activated Data Stores.

Full or Update Export/Import

Full Export extracts the catalog information for all the volumes of a BackBox primary Data Store.

Full Import replaces the catalog information already known for the volumes of a BackBox SECONDARY Data Store, by

the content of the staging area.

Export Update extracts the new catalog information that was not successfully written to the staging area.

Import Update reads the new files received in the staging area since the previous successful import and applies this new metadata to the catalogs. If an error occurs in one of the volumes to import and to ensure nothing is missing, all volumes will be re-imported at the next Import Update.

The exported catalog information of a volume consists of:

1. The tape volume BackBox record.
2. The DSM/TC volume records.

The imported catalog information of a volume consists of:

1. The tape volume BackBox record.

   BackBox entries are always applied to the SECONDARY Data Store. Deleted volumes are removed from the SECONDARY side only during a Full Import.

2. The DSM/TC volume records.

DSM/TC entries are created when missing and are updated if different from the imported volumes. The DSM/TC tape volumes are only deleted during a Full Import and only if there was an associated BackBox volume in the SECONDARY site.

Export/Import Initiation

Each export or import is an independent Guardian process. A single export or import can be run per Data Store.

FULL Export/Import

Full export and full import are executed on demand only, either through BackBox UI or through the scheduled TACL macro:

1. By using BackBox UI, at the implementation of the replication.
2. By scheduling TACL macros in NetBatch on a regular basis to ensure the synchronization of the two sites and to remove the volumes that were deleted on the primary site after being replicated.

UPDATE Export/Import

To save the catalog information remotely as soon as possible, export updates are automatically initiated by the BackBox domain:

1. When a volume written by a tape application is unloaded.
2. When a volume is created in the domain.
3. When a change is detected in the DSM/TC tape volume status in the daily OBB017 batch or in an interactive function that manipulates the DSM/TC tape volume status through a BackBox functionality.

Failed exports are re-initiated by the BackBox EMS Extractor. Retry frequency is set in the Data Store export configuration.

When there are several EMS Extractors for the domain, they collaborate so that any running EMS Extractor will take charge of the monitoring and re-initiate the export.

To accelerate an export retry, export updates might also by manually initiated through BackBox UI. Import updates are executed on demand only, through BackBox UI or scheduled TACL macro.

Encrypted Volumes

If the volumes were written with encryption, the encryption key is needed to achieve restore on the SECONDARY side.

BackBox encryption keys are always stored in a tier-party Key Manager such as HPE ESKM or KMIP compatible Key Manager.

Typically, using duplication tools embedded in the Key Manager, the user enables the duplication of encryption keys created on the primary side, into an alternate Key Manager server available on the SECONDARY site.

This key replication is transparent to BackBox.

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Using the same Key Manager from the SECONDARY side can be configured, but it is acceptable only if this SECONDARY side is used for data sharing only. It is not acceptable for Catalog Sync.

BackBox does not support encryption in RESTRICTED Data Stores.

For SECONDARY Data Stores, the BackBox catalog contains the BackBox Key Manager ID that stored the encryption key at backup time, volume per volume.

In the domain on the SECONDARY side, the same Key Manager IDs must be configured for the local VTCs and for pointing to the alternate Key Manager that contains the duplicated keys.

The report BB038 can be used on the SECONDARY side to identify all Key Manager IDs required for all encrypted volumes.

It is recommended to specify the Key Manager ID in the Volume Groups of the SECONDARY side, although it will be used only when the user promotes the Data Store to PRIMARY access and runs backups in this environment.

INITIAL SETUP AND CONFIGURATION

Prepare BackBox for DSM/TC Catalog Sync

In both primary and SECONDARY domains, BBDBM is the SQL program reading and writing to the DSM/TC catalogs and must be prepared before its first use.
A TACL session with SUPER.SUPER is needed and an SQL/MP catalog must be chosen to register the BBDBM program. The SQL/MP system catalog is a suggested catalog. As alternative to the system catalog, choose a stable and permanent DSM/TC VOLCAT; for example, the same that was used to SQL-compile $SYSTEM.SYSnn.MEDIADBM. To get the target –sql-catalog:

```
>SQLCI GET CATALOG OF SYSTEM
EXIT
```

Manual Preparation of BBDBM

To prepare BBDBM manually, start a TACL session running with SUPER.SUPER, and enter:

```
>VOLUME <BackBox-target-sub-volume>
>SQLCOMP /IN BBDBM / CATALOG target-sql-catalog
>FUP LICENSE BBDBM
```

Reserve a Disk Sub-Volume per SECONDARY Data Store

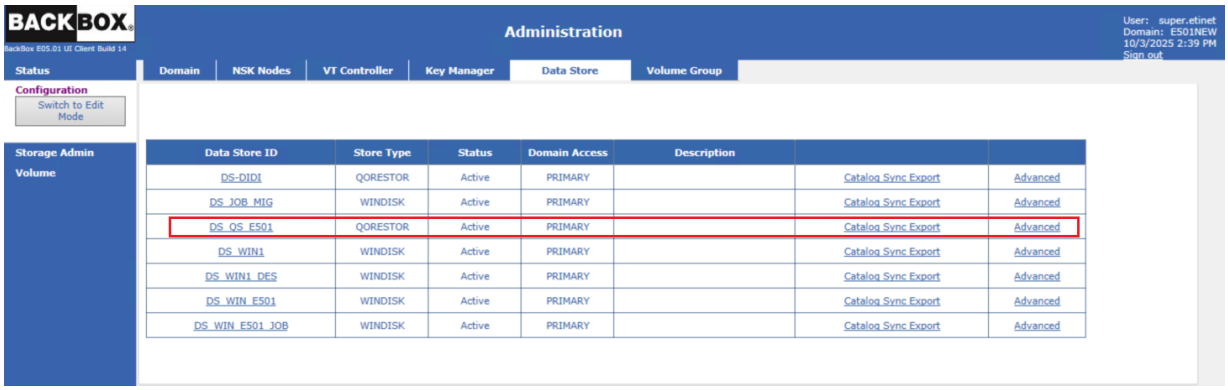
On the SECONDARY Nonstop node, a disk sub-volume must be reserved for the metadata staging area, one sub-volume per SECONDARY Data Store.

Get BackBox License Key(s) Enabling Catalog Sync

The Catalog Sync license option is required on the primary side, as well as on the SECONDARY side. Verify the license option on BackBox UI > Configuration > Domain Page > License Details.

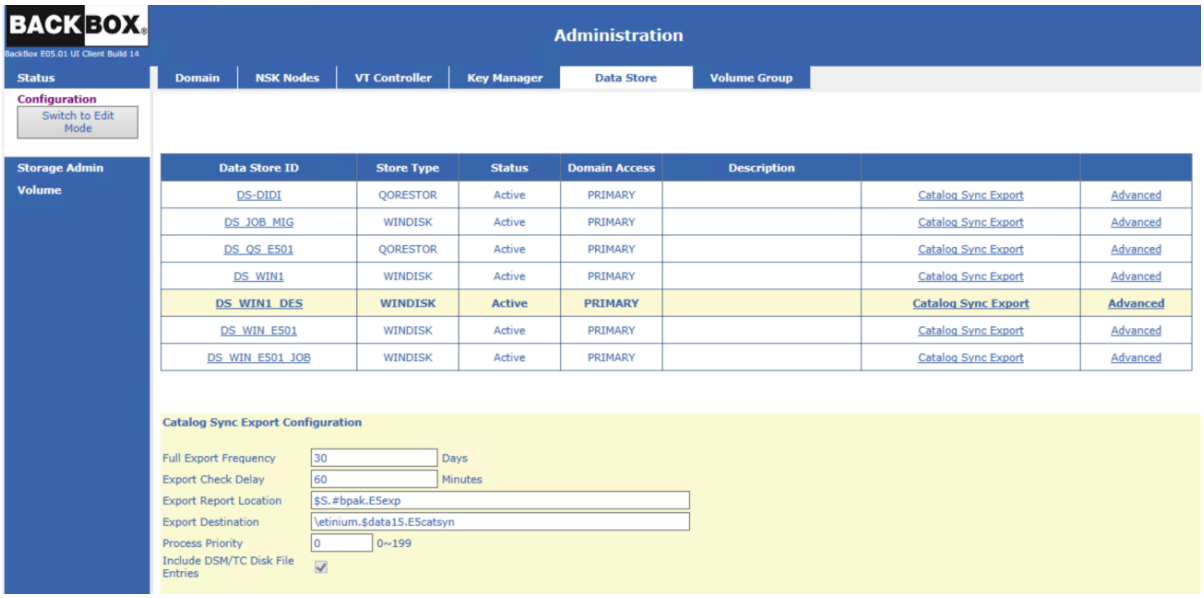
PRIMARY Data Store Configuration

When the Catalog Sync option is set in the license key, the list of Data Stores shows a link to Catalog Sync Export.

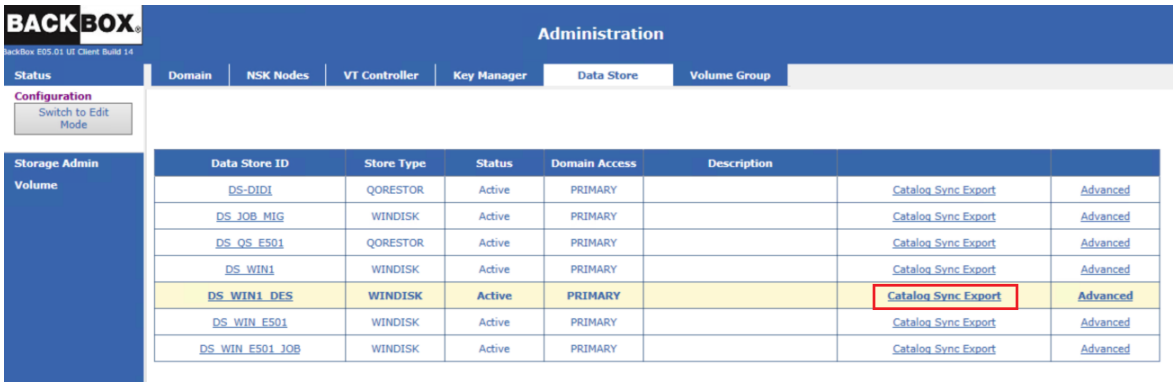


In the main Data Store attributes, click the Switch to Edit Mode and click the Catalog Sync Export for a PRIMARY Data Store.

Data Store Information Configuration Page [PRIMARY]



Catalog Sync Export Configuration Page



Full Export Frequency: This is an alternative to scheduling a Full Export through NetBatch. Full Export frequency should only be considered in systems when NetBatch is not installed.

This parameter is tested when executing an export update. If the delay is reached, the export update will be converted into a full export.

This method has the inconvenience that the full export will typically occur when automatic incremental exports are initiated at the end of the normal backups.

Export Check Delay: When there are export updates, the Export Check Delay enables the export retry by the EMS

Extractor.

Export Report Location: The Export Report Location is the location of the export process log. A spooler location is suggested to hold more than the latest execution log.

Export Destination: The presence of an Export Destination is the trigger to execute exports. It identifies the staging area of a remote sub-volume where export files will be written.

Process Priority: Process Priority is the priority of the Export process. If it is not specified (value zero), the export processes will inherit the priority of the domain manager BBSV process, as started by the LISTNER process.

Include DSM/TC Disk File Entries: If un-checked, the DISKFILE entries created by BACKUP executed with the CATALOGFILES option will never be sent to the remote staging area. When checked:

- Automatic Export Updates will send DISKFILE entries.
- Depending on the request parameter, exports initiated by BackBox UI and TACL macro will send the DISKFILEs.

Batch Scheduling on the Primary DataStore

Export updates are internally initiated by any BackBox operation that changes a tape volume status. Other exports must be scheduled in NetBatch jobs running the BB026_EXPORT_CATALOG macro.

It is suggested to schedule a monthly re-synchronization export (TYPE FULL) that re-sends all BackBox volumes and all related DSM/TC TAPEVOLUME and TAPEFILE entries, but not the DISKFILE (CATALOGFILES NO).

On the SECONDARY site, the corresponding import (TYPE FULL, CATALOGFILES NO) would be scheduled to run after this monthly export.

BB026_EXPORT_CATALOG macro

Macro syntax:

```
LOAD /KEEP 1/ BBOX.BBSETUP
BBOX.MACROS BB026_EXPORT_CATALOG
STOREID {stored-id | ALL},
      [,
      CATALOGFILES
       {YES | NO}]
      [, TYPE
      {FULL |
      UPDATE}]
```

This macro connects to the domain manager that will start an export process. Its priority and output specifications are defined in the Data Store configuration.

STOREID	Mandatory. Specifies the DataStore to process. ALL refers to all primary Data Stores.
CATALOGFILES	Optional. Specifies if DISKFILE entries must be exported.
TYPE	Optional. Specifies if the whole Data Store or only not yet exported information must be exported.

SECONDARY Data Store Configuration

The Data Store and its Volume Groups must be configured in the SECONDARY site in the Data Store and Volume Group configuration pages.

⚠	For the SECONDARY Volume Groups associated with the DSM/TC, not only VOLCAT and POOL, but also FILECAT must be entered.

- If the Data Store ID is different, specify the Primary Store ID in the Catalog Import Configuration page on

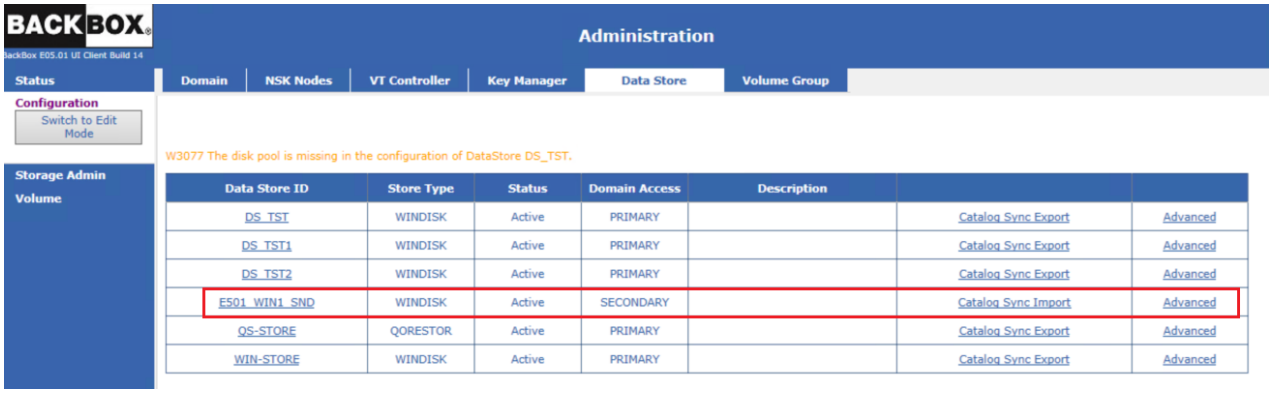
the SECONDARY side.

- If the Volume Group ID is different, specify the primary Volume Group ID in the Volume Group configuration page on the SECONDARY side.
- Volume Groups missing in the SECONDARY Data Store will be reported as errors in the import reports and their volumes will simply not be imported.

After a first export is executed on the primary side, the import status page makes available a button to compare the catalog types and names between primary and SECONDARY sides.

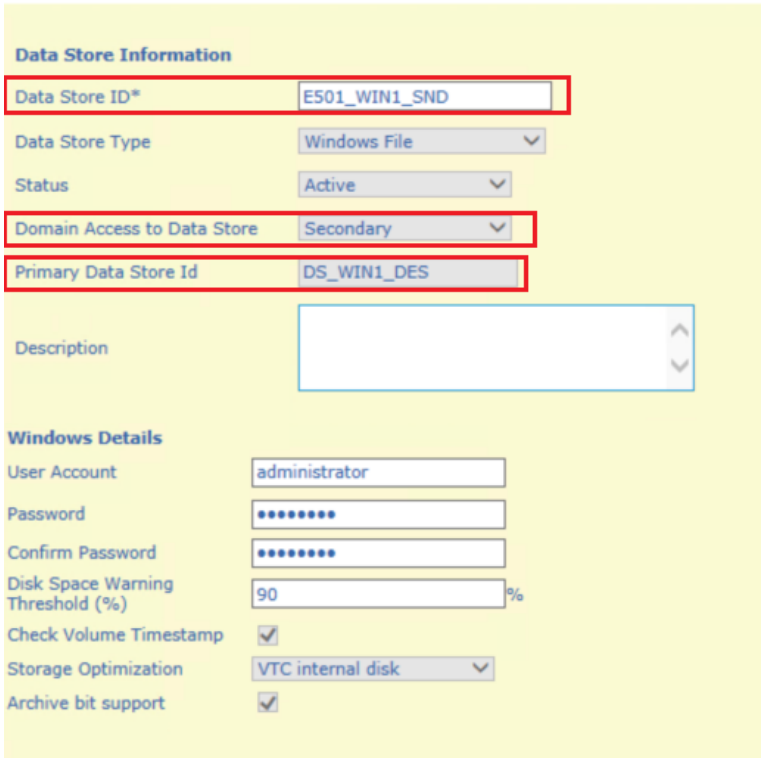
***

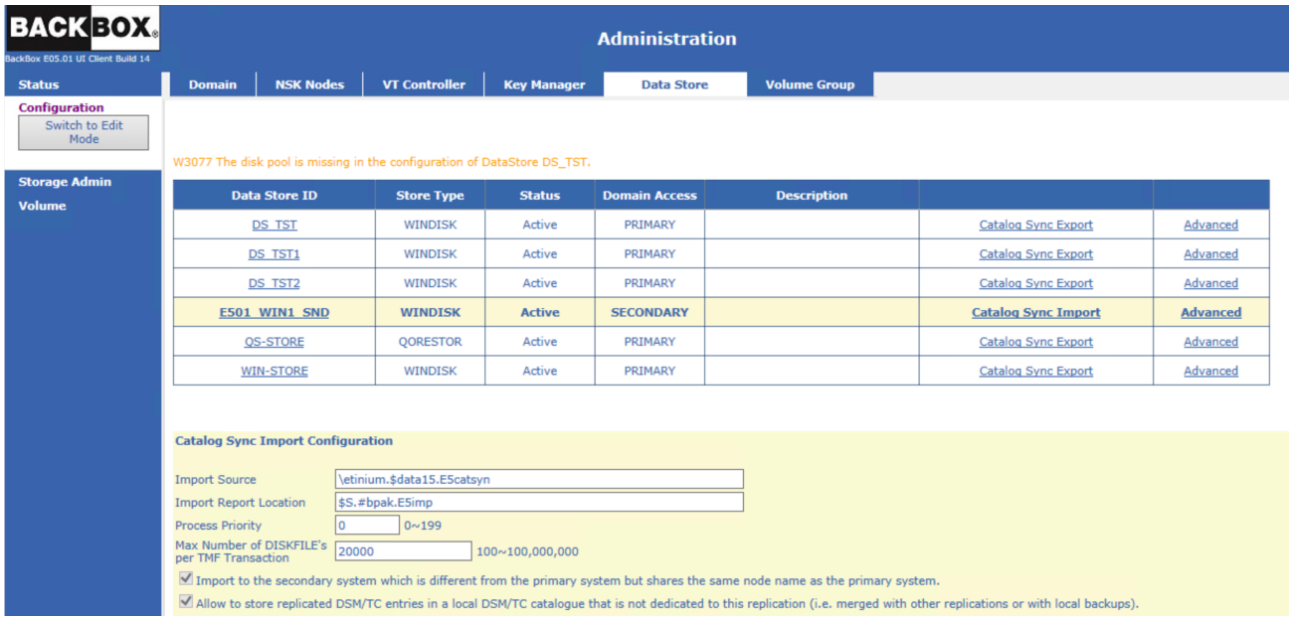
When the Catalog Sync option is set in the license key, the list of Data Stores shows a link toCatalog Sync Import.



Data Store Information Configuration Page [SECONDARY]

The Data Store must be created with SECONDARY as the Domain Access.





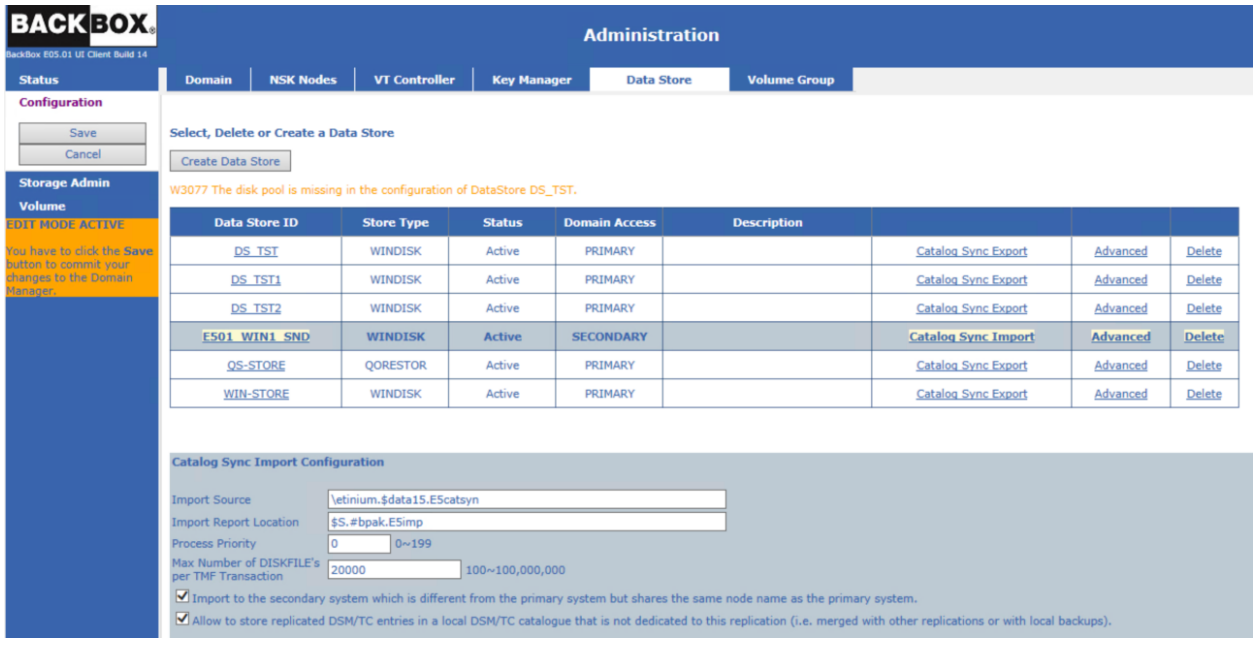
Domain Access to Data Store: Must be SECONDARY.

Primary Data Store ID: Must be entered if the Data Store ID is different on the PRIMARY side.

⚠	For special cases, such as Nonstop recovery when the main system crashes and data needs to be recovered right away from a secondary system, refer to Appendix B -Disaster Recovery Scenario when DataStore Type is Qorestor

Catalog Sync Import Configuration Page

To configure the Catalog Sync Import, go to Data Store ID > Switch the Edit Mode > Catalog Sync Import.



Import Source: Is the staging area receiving export files.

Import Report Location: Is the location of the import process log. A spooler location is suggested.

Process Priority: Is the priority of the started import process. If not specified (value 0), the import process will inherit the priority of the domain manager BBSV process as started by the LISTNER process.

Max Number of DISKFILES per TMF Transaction: In addition to doing a commit for each tapefile, a commit is executed each time the number of disk files reaches the value entered. Default is 20,000, maximum is 100,000,000.

(Checkbox) Import to a SECONDARY System that Shares the Same Node Name as the Primary System: If checked, at import time, this option disables the validation and verifies that the DSM/TC qualified volume catalog names are different between PRIMARY and SECONDARY sides. Identical names are a symptom of a configuration error, except if the two Nonstop systems have identical names and are not connected by Expand. If the user wants to configure identical DSM/TC catalog names in Volume Groups on both PRIMARY and SECONDARY sides (of two NSK), this box must be checked.

(Checkbox) Allow to store replicated DSM/TC entries in a local DSM/TC catalog that is not dedicated to the replication system (i.e. merged with other replications or local backups). At import time, this checkbox disables a validation and verifies that the target DSM/TC catalog is different from the DSM/TC catalog used to register locally executed backups.

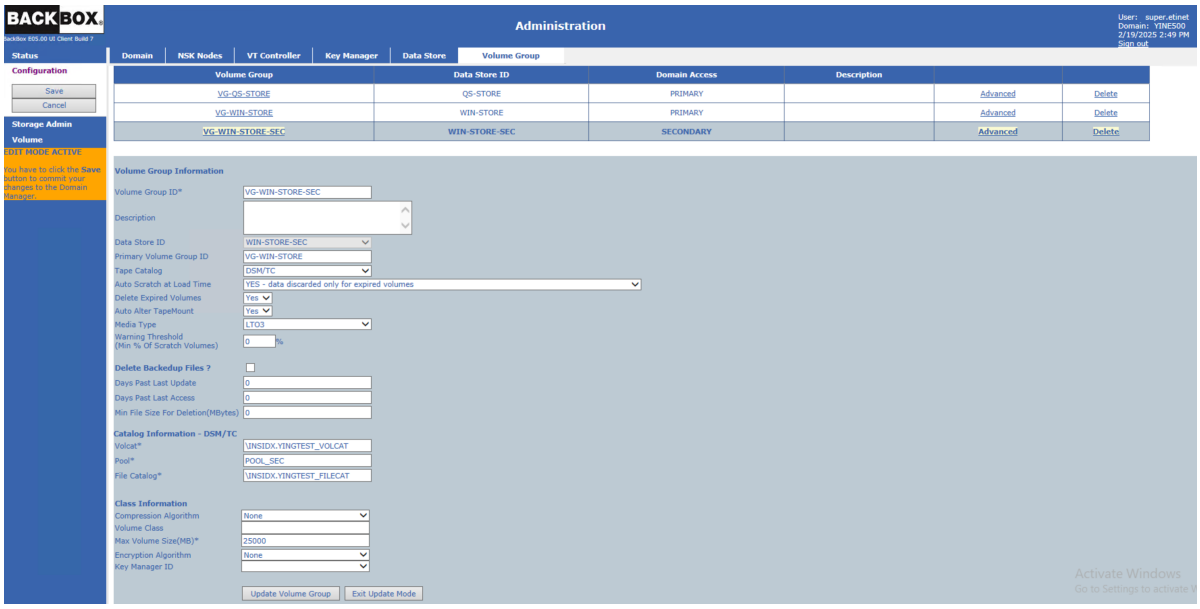
The collision risk is relatively high on the FILEID, if for example, a backup with FILEID FULL_BACKUP is imported into the same DSM/TC catalog that registers locally executed backups on FILEID FULL_BACKUP; the DSM/TC catalog may become corrupted.

Nodes Replacement: Is the optional change of the node names in the disk file names of replicated DISKFILE entries. Enter a list of old value and new value node name pairs.

⚠	This change must not be configured before reading Node Name in DSM/TC Catalogs.

Volume Group Configuration

This section refers only to specifics of SECONDARY Volume Groups. See the BackBox User Manual for the Volume Group configuration.



Primary Volume Group ID: This element is available only for SECONDARY or RESTRICTED Data Stores. If the corresponding PRIMARY and SECONDARY Volume Groups don't have the same name, it is possible to set the correspondence by entering the name of the primary group here.

Catalog Type: The catalog type (NONE, DSM/TC, TMF, CA..) must be consistent between the PRIMARY Volume Group and its SECONDARY corresponding group, but not necessarily identical. A PRIMARY group can be TMF and the SECONDARY can be NONE.

The only catalog types supported in SECONDARY Data Stores are NONE and DSM/TC.

Auto Scratch at Load Time: Indicates if the content of an expired virtual volume can be deleted at load time. The expiry test depends on the tape catalog type and its integration in BackBox.

- If WORM Compatibility is enabled (set to YES) - the AutoScratch at Load Time option is grayed-out, hence not available for the selected volume group - for the data store where the volume group has been created (option available only for BoostFS for DataDomain, RapidCIFS for

QoreStor and Cohesity NAS), data will be discarded only for expired volumes. This specific configuration forces the auto-scratch function: expired volume data is purged.

- If WORM Compatibility is disabled (set to NO) the AutoScratch at Load Time function doesn't allow data to be automatically discarded, hence data deletion can be set up according to the data purging policies.

⚠	Auto Scratch at Load Time - default value YES. The content of expired virtual volumes is deleted at load time. Auto Scratch at Load Time - set to NO. The content of expired virtual volumes will not be deleted at load time.

⚠	For QTOS and CA catalogs, there is no expiry test when auto-scratch is enabled. Any tape volume requested for output is assumed to be expired. Refer to the Auto-Scratch Mechanism section.

Delete Expired Volumes: Indicates if a volume that has become SCRATCH in DSM/TC, TMF or QTOS must be deleted in storage. This controls the functionality of the macro BB017_FREE_ EXPIRED (in OBEY OBB017).

⚠	If Delete Expired Volumes is set to No, the spare move tapes will not be moved, as they are already expired and they cannot be moved or deleted. If Delete Expired Volumes is set to Yes, the spare move tapes will be deleted or moved by the end of the day, according to the daily clean-up schedule. In order to delete these tapes before the scheduled time, use OBB017 and perform the action manually.

Auto Alter TapeMount: Mount the tape by automatically asking DSM/TC to substitute another scratch tape from the same pool as the one to be altered.

Media Type: The media type might be different from the original one. The media type of the SECONDARY Volume Group will be assigned to all volumes replicated in the DSM/TC SECONDARY catalog, regardless of the media type in the PRIMARY DSM/TC.

Volcat: The DSM/TC VOLCAT and FILECAT catalogs cannot be duplicated on themselves and their names thus qualified by the node name must be different in the SECONDARY Data Store. However, when PRIMARY and SECONDARY systems are not linked by Expand and when both systems share the same node name, the qualified catalog names can be identical.

Catalog Sync Import: Configuration Page to allow the same name.

Pool: Pool names can be equal, as well as different.

File Catalog: This element is available only for SECONDARY Data Stores. The DSM/TC file catalog – not only the volume catalog - must be entered to specify where the duplicated DSM/TC TAPEFILE and DISKFILE must be written. This must be entered whether the FILECAT and VOLCAT are in the same SQL sub-volume or not.

For more details on volume group configuration, refer to BackBox User Manual section Volume Group under Configuration.

Key Manager Configuration

Each of the encrypted volumes imported in the BackBox catalog refers to the BackBox Key Manager ID of the server that contains the encryption key for the volume.

This BackBox Key Manager ID must be configured in the domain containing the SECONDARY Data Store.

It is recommended to name the Key Manager ID in the configuration of the Volume Groups of the SECONDARY Data Store.

Batch Scheduling on the SECONDARY DataStore

No import is internally initiatedby BackBox. Any systematic import must be scheduled in a NetBatch job, running the BB027_IMPORT_CATALOG macro.

Running an import periodically:

- checks if the replication is running correctly.
- maintains the SECONDARY catalog state as close as possible to the PRIMARY catalog state in order to minimize the role swap.
- deletes tape volumes that were removed fromthe catalogs on the PRIMARY side.

It is recommended to avoid running BackBox import during the target system DSM/TC daily expiration process. This requires explicitly controlling the time that the DSM/TC expiration is started by $ZSVR through the TACL command "PARAM AUTOEXPIRE^TIME hh:mm" before starting $ZSVR. For further information, refer to the HPE Technical Library and HPE Knowledge Base.

A possible schedule would be to run:

An import UPDATE with CATALOGFILES YES each day, with some delay after the backup window on the primary site.

A FULL import with CATALOGFILES NO each month, after a corresponding FULL export on the primary site has been completed.

BB027_IMPORT_CATALOG Macro

Macro syntax:

```
LOAD /KEEP 1/ BBOX.BBSETUP BBOX.MACROS BB027_IMPORT_CATALOG STOREID
 {stored-id | ALL},
[, STOREID_ALIAS {0 | 1 | 2}] [, CATALOGFILES {YES | NO}] [, TYPE
{FULL | UPDATE}]
```

This macro connects to the domain manager that will start an export process, whose priority and output specifications are defined in the Data Store configuration.

STOREID — Mandatory. Specifies the DataStore to process.
ALL refers to all primary Data Stores.

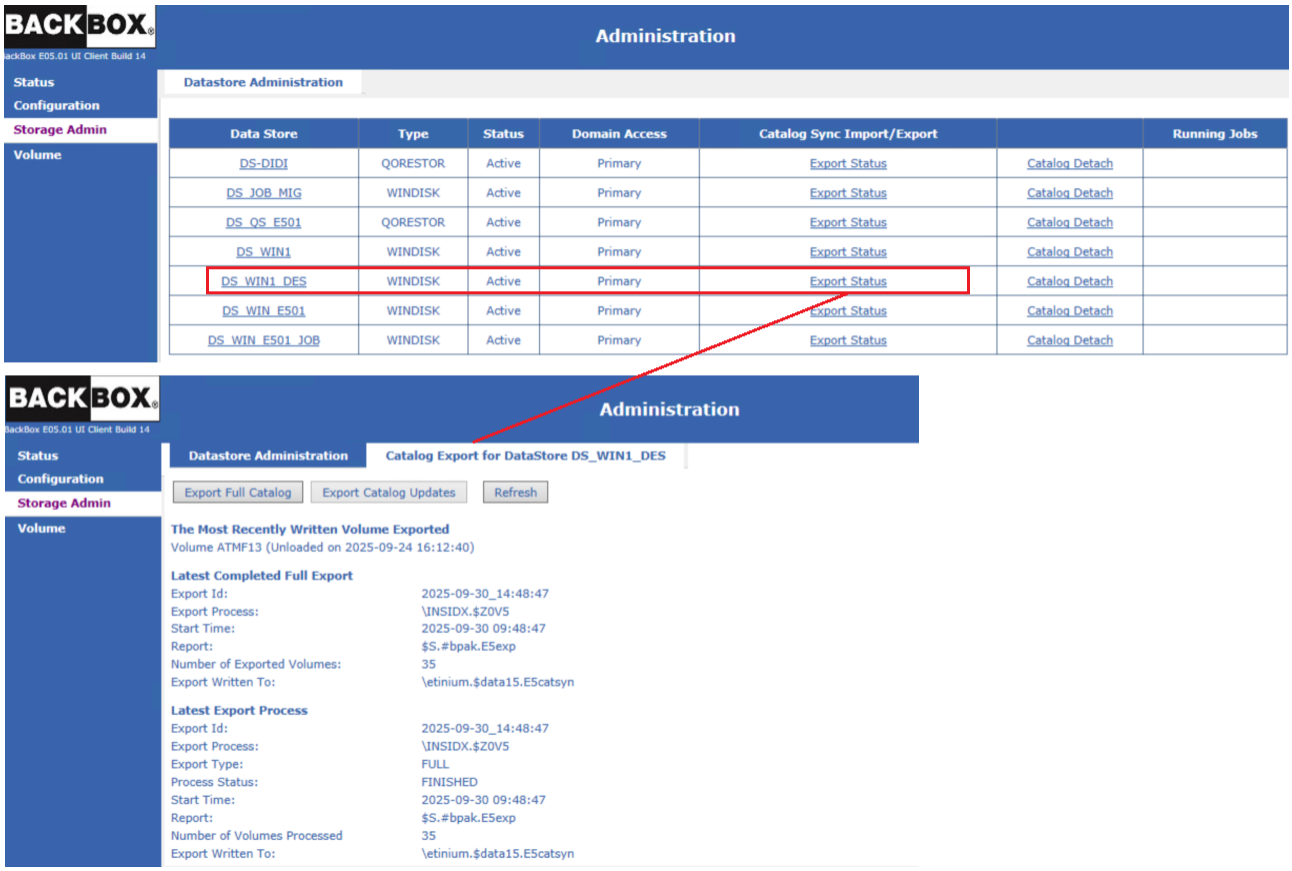
STOREID_ALIAS — Indicates that STOREID must be interpreted, for Store IDs named with embedded spaces: value 0: no interpretation value 1:replace '_' characters by spaces value 2: replace '+' characters by spaces Optional, default value is 0.

CATALOGFILES — Optional. Specifies if DISKFILE entries must be imported.

TYPE — Optional. Specify if the whole Data Store or only not yet exported information must be exported.

EXPORT OPERATIONS

When the license key is set for Catalog Sync option, the link to the Export Status page is presented in the column Catalog Sync Import/Export in the Storage Admin tab.



Most Recently Written Volume Exported: Identifies the most recent exported catalog information activity.

Pending Volumes to Export: Evaluates volume count pending export.

Latest Completed Full Export: Identifies the latest full export that is completed without error.

Latest Export Process: Identifies the latest export process submitted.

Export Full Catalog button: Initiates a full export.

Export Catalog Updates button: Initiates an export for pending volumes. There is normally no need to manually initiate Export Updates or their retries.

Refresh button: Displays the latest status.

Most Recent Volume Exported

When there is no pending export during normal tape operations, this shows the most recent volume loaded for a backup.

Volume: Label of the volume.

Time: Time of the volume activity.

Number of Pending Catalog Updates to Export

Number: Number of volumes with modified catalog information to export. The three oldest activities to export are listed.
Volume: Label of the tape volume.

Unload Time: Time of the activity.

Latest Completed Full Export

Export ID: Timestamp identifying the export execution.
Export Process: Guardian name of the export process.

Export Status: Always FINISHED.
Start Time: Starting time of the export process.

Report: Location of the export log.

Number of Exported Volumes: Number of volumes whose catalog information was extracted.

Export Written To: Staging area where export files were written.

Latest Export Process

Export ID: Timestamp identifying the export execution.

Export Process: Guardian name of the export process.

Export Type: FULL or UPDATE.
Export Status: FINISHED or RUNNING.

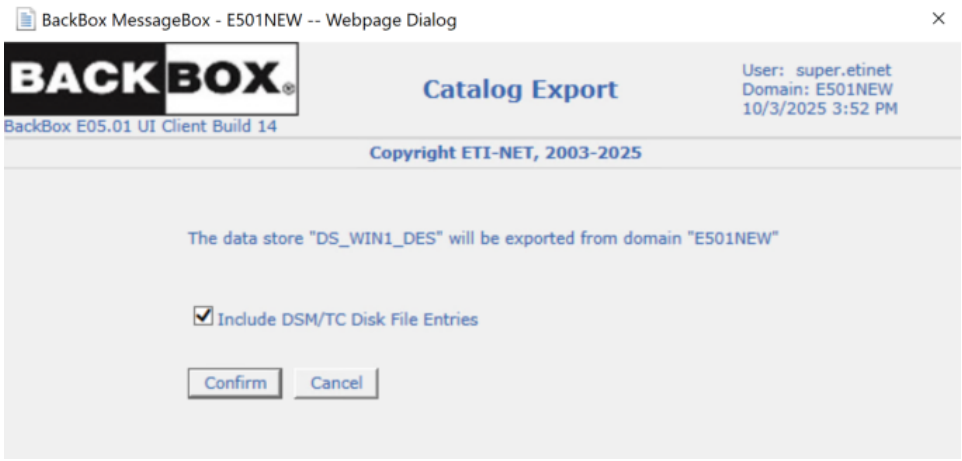
Start Time: Starting time of the export process.

Report: Location of the export log.

Number of Exported Volumes: Number of volumes from which catalog information was extracted.

Export Written To: Staging area where export files were written.

Export Confirmation



Include DSM/TC Disk File Entries: Check to send the content of backups to the remote staging area. This option is available only if the Data Store Export configuration allows it.

Confirm button: Starts the Export process.

Cancel button: Returns to the Export status.

Export Execution Traces

For each export process issued:

- A starting process EMS message, if EMS Verbose is set in the domain configuration. Possible EMS error messages.
- An ending process EMS message, if EMS Verbose is set in the domain configuration. A log report in

the location set in the export configuration.

Sample EMS Messages

```
2025-02-19 17:16:10 \ETINIUM.$Y01Q ETINET.100.100 3273 YINE500-I3273 CATALOG
FULL process \ETINIUM.$Y01R started to export the catalogs of data store
WIN-STORE. Output report sent to $S.#pri.exp.
```

Sample Catalog Export Report

The following shows a sample of typical data in a Catalog Export/Import Report:

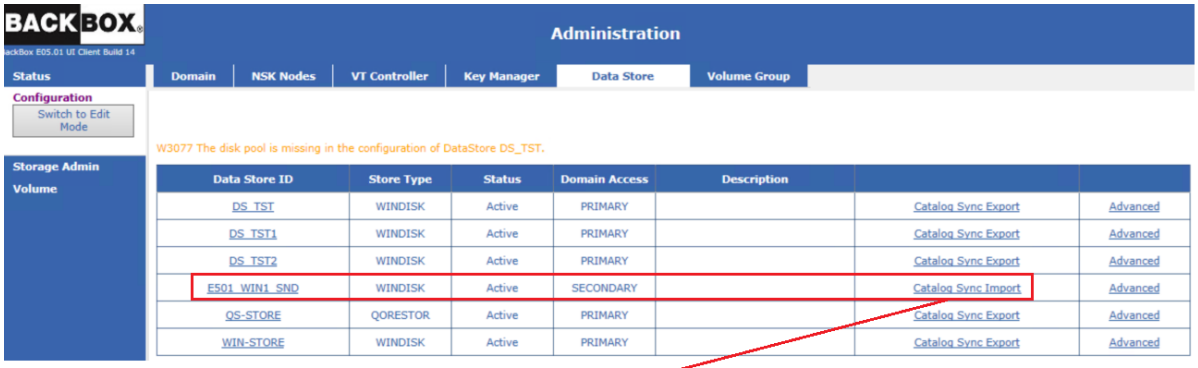
Catalog Export Report

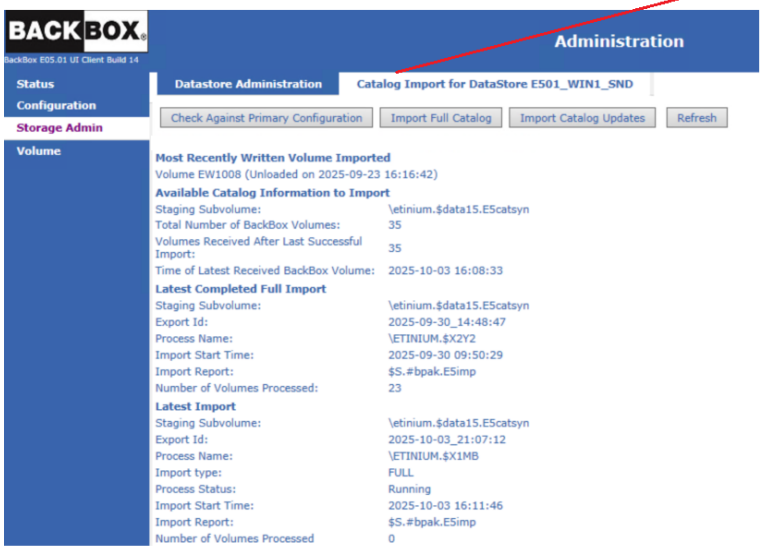
```
E501NEW-BB051 -  CatSync Export/Import process \INSIDX.$X66X  2025-10-03 21:44


Data store  : DS_WIN1_DES -
Process type        : EXPORT FULL catalogs
DSM/TC disk files   : included
Export id            : 2025-10-03_21:44:23
Export destination : \etinium.$data15.E5catsyn


Volume  Group                    Catalog status
======  ======                     ==============


VEBR01  VG_WIN1_BRCOM           ASSIGNED  E501NEW-OBK11-BRCOM, gen=1
VEBR02  VG_WIN1_BRCOM           ASSIGNED  E501NEW-OBK11-BRCOM, gen=2
VEBR03  VG_WIN1_BRCOM           ASSIGNED  E501NEW-OBK11-BRCOM, gen=2, vol=2
VEBR04  VG_WIN1_BRCOM           ASSIGNED  E501NEW-OBK11-BRCOM, gen=2, vol=3
VEBR05  VG_WIN1_BRCOM           ASSIGNED  E501NEW-OBK11-BRCOM, gen=2, vol=4
VEBR06  VG_WIN1_BRCOM           SCRATCH
VEBR07  VG_WIN1_BRCOM           SCRATCH
VEBR08  VG_WIN1_BRCOM           SCRATCH
VEBR09  VG_WIN1_BRCOM           SCRATCH
VEBR10  VG_WIN1_BRCOM           SCRATCH
EW1001  VG_WIN1_DES              SCRATCH
EW1003  VG_WIN1_DES              ASSIGNED  E501-OBK11-WIN1, gen=3
EW1004  VG_WIN1_DES              SCRATCH
EW1005  VG_WIN1_DES              ASSIGNED  E501-OBK11-WIN1, gen=6
EW1006  VG_WIN1_DES              ASSIGNED  E501-OBK11-WIN1, gen=8
EW1007  VG_WIN1_DES              ASSIGNED  E501-OBK11-WIN1, gen=9
EW1008  VG_WIN1_DES              ASSIGNED  E501-OBK11-WIN1, gen=10
EW1009  VG_WIN1_DES              SCRATCH
EW1010  VG_WIN1_DES              SCRATCH
VWIB01  VG_WIN1_DES              SCRATCH
VWIB02  VG_WIN1_DES              SCRATCH
VWIB03  VG_WIN1_DES              SCRATCH
VWIB04  VG_WIN1_DES              SCRATCH
VWIB05  VG_WIN1_DES              SCRATCH
ENCS01  VG_WIN1_DES_NC
ENCS02  VG_WIN1_DES_NC
ENCS03  VG_WIN1_DES_NC
ENCS04  VG_WIN1_DES_NC
ENCS05  VG_WIN1_DES_NC
ENCL01   VG_WIN1_DES_NC2
ENCL03   VG_WIN1_DES_NC2
ENCL04   VG_WIN1_DES_NC2
ENCL05   VG_WIN1_DES_NC2
WUL001  VG_WIN1_UL
WUL002  VG_WIN1_UL
```

```
Volume group          NSK primary catalog (pool name)        Number of  Nbr DSM/TC
                        Most recently written volume             volumes  disk files
============          ============================             =======  ==========


VG_WIN1_BRCOM         DSM/TC volcat \INSIDX.QCVOLCAT, pool E501_WIN1_BRCOM
                        VEBR05 unloaded on 2025-09-18 19:01:58        10           0


VG_WIN1_DES           DSM/TC volcat \INSIDX.QCVOLCAT, pool E501_WIN1
                        EW1008 unloaded on 2025-09-23 21:16:42        14           0


VG_WIN1_DES_NC        no tape catalog
                        ENCS02 unloaded on 2025-09-18 19:26:42         5           0


VG_WIN1_DES_NC2       no tape catalog
                        ENCL01 unloaded on 2025-09-18 19:25:41         4           0


VG_WIN1_UL            no tape catalog
                        WUL001 unloaded on 2025-09-17 03:28:47         2           0


VG_WIN_TMF            TMF    catalog: \INSIDX


E501NEW-I3279 \INSIDX.$X66X exported FULL catalogs for data store DS_WIN1_DES
(35 volumes processed). Report in $S.#bpak.E5exp


E501NEW-BB051 Process \INSIDX.$X66X ended on  2025-10-03 21:44
```

IMPORT OPERATIONS

When the license key is set for the Catalog Sync option, a new column appears in the list of Data Stores presented in the Storage Admin tab Catalog Sync Import/Export that presents a link to an Import Status page.





Most Recently Written Volume Imported: Identifies the most recent volume metadata imported.

Available Catalog Information to Import: Provides reports of the export files in the staging area.

Latest Completed Full Import: Identifies the latest full import that completed without fatal error.

Latest Import: Identifies the latest import process submitted.

Page buttons

Check Against Primary Configuration button: Compares the configuration of Volume Groups in the PRIMARY and SECONDARY Data Stores.

Import Full Catalog button: Initiates an import from the whole staging area.

Import Catalog Updates button: Initiates an import from the export files received, following the last successful import.

Refresh button: Displays the latest status.

Most Recent Volume Imported

Volume: Label of the imported volume that shows the latest activity.

Time: Time of the volume activity.

Available Catalog Information to Import

Staging Sub-Volume: Location of the export files to read.

Total Number of BackBox Volumes: Number of per-volume export files present in the staging sub- volume.

Volumes Received After Last Successful Import: Number of volumes to process in the next import update.

Time of Latest Received BackBox Volume: Modification time of the latest per-volume export file.

Latest Completed Full Import

Staging Sub-Volume: Sub-volume where export files were read.

Export ID: Timestamp that was assigned at export time.

Process Name: Guardian name of the import process.

Import Type: Always FULL

Process Status: Always FINISHED.

Import Start Time: Starting time of the import process.

Import Report: Location of the import log.

Number of Processed Volumes: Number of volumes whose catalog information was applied to the catalogs.

Latest Import

Staging Sub-Volume: sub-volume where export files were read.

Export ID: Timestamp that was assigned at export time.

Process Name: Guardian name of the import process.

Import Type: FULL or UPDATE.

Process Status: RUNNING or FINISHED.

Import Start Time: Starting time of the import process.

Import Report: Location of the import log.

Number of Processed Volumes: Number of volumes whose catalog information was applied to the catalogs.

Configuration Check

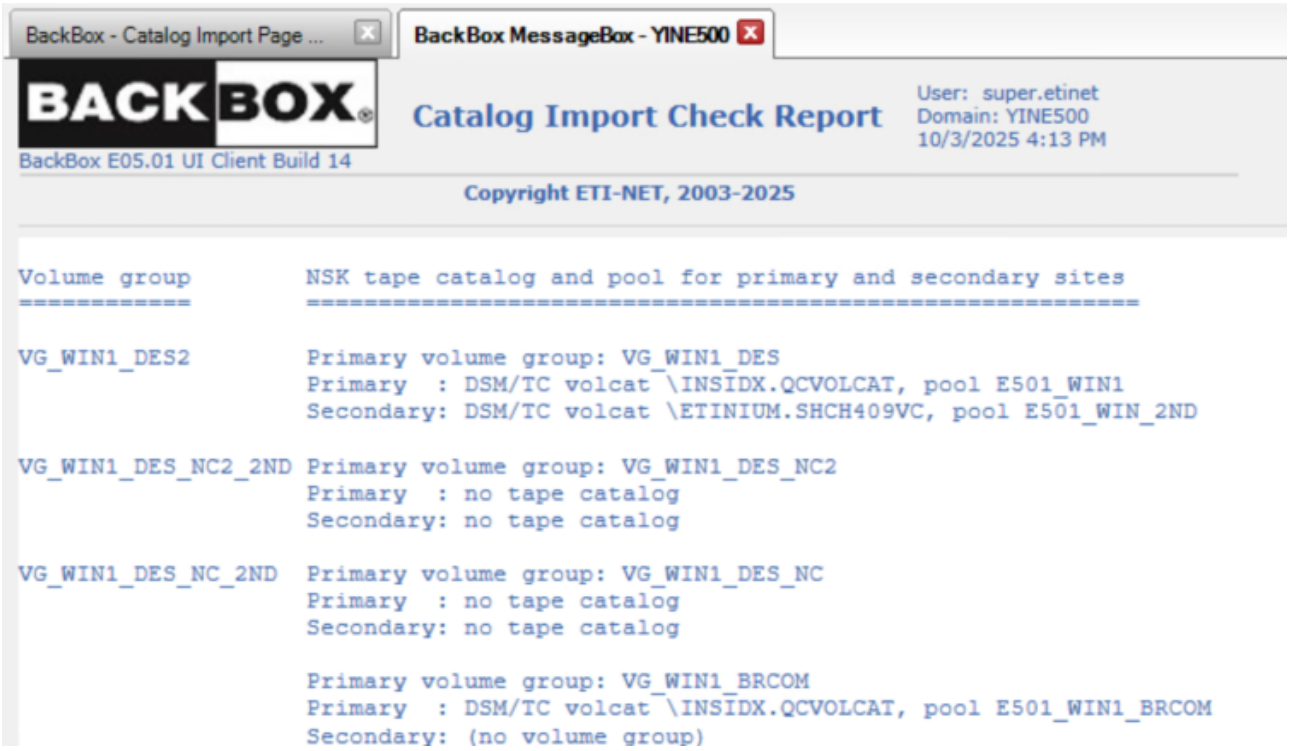
The confirmation page elements are the following:

Include DSM/TC Disk File Entries: Check to insert the missing DSM/TC DISKFILEs.

Confirm button: Starts the Import process.

Cancel button: Returns to the Import status.

The PRIMARY and SECONDARY Data Store must have matching Volume Group ID and coherent tape catalog type (DSM/TC, TMF...). This configuration information is sent by the PRIMARY site in the summary export file (FULL or UPDATE file) that can be compared to the local SECONDARY configuration.



Import Execution Traces

For each Import Execution Trace process, the following messages are issued:

- A starting process EMS message, if EMS Verbose is set in the domain configuration.
- Possible EMS error messages.
- An ending process EMS message, if EMS Verbose is set in the domain configuration.
- A log report in the location set in the import configuration.

Sample EMS Messages

```
2025-02-21 16:09:56 \INSIDX.$X3AB ETINET.100.100 3286 QAE500-I3286 Process
\INSIDX.$X3AC started for IMPORTING the entire catalogs of data store
WIN-STORE-SECOND. Output report sent to $S.#seg.imp.
```

Sample Catalog Import Report

The following shows a sample of typical data in a Catalog Import/Export Report:

Catalog Import Report

```
YINE500-BB051 -  CatSync Export/Import process \ETINIUM.$X1S3  2025-10-03 16:48
```

```
Data store  : E501_WIN1_SND -
              Primary data store: DS_WIN1_DES
Process type       : IMPORT FULL catalogs
DSM/TC disk files  : insert new entries and delete obsolete entries
Export id           : 2025-10-03_21:44:23
Import source       : \etinium.$data15.E5catsyn


CONFIGURATION VALIDATION, VOLUME GROUPS


Volume group        NSK tape catalog and pool for primary and secondary sites
============            ============================================================


VG_WIN1_DES2         Primary volume group: VG_WIN1_DES
                      Primary  : DSM/TC volcat \INSIDX.QCVOLCAT, pool E501_WIN1
                       Secondary: DSM/TC volcat \ETINIUM.SHCH409VC,
                                       pool E501_WIN_2ND


VG_WIN1_DES_NC2_2ND Primary volume group: VG_WIN1_DES_NC2
                     Primary  : no tape catalog
                      Secondary: no tape catalog


VG_WIN1_DES_NC_2ND  Primary volume group: VG_WIN1_DES_NC
                     Primary  : no tape catalog
                      Secondary: no tape catalog


                      Primary volume group: VG_WIN1_BRCOM
                      Primary  : DSM/TC volcat \INSIDX.QCVOLCAT,
                                       pool E501_WIN1_BRCOM
                      Secondary: (no volume group)
W3332 Primary volume group VG_WIN1_BRCOM is not configured in the local
secondary domain YINE500 for data store DS_WIN1_DES. For this group, volumes
to import will be rejected.



                      Primary volume group: VG_WIN1_UL
                     Primary  : no tape catalog
                      Secondary: (no volume group)
W3332 Primary volume group VG_WIN1_UL is not configured in the local secondary
domain YINE500 for data store DS_WIN1_DES. For this group, volumes to import
will be rejected.



                      Primary volume group: VG_WIN_TMF
                     Primary  : TMF   catalog: \INSIDX
                      Secondary: (no volume group)
W3332 Primary volume group VG_WIN_TMF is not configured in the local secondary
domain YINE500 for data store DS_WIN1_DES. For this group, volumes to import
will be rejected.



Volume  Group                    Catalog status
======  =====                      ==============
ENCL01  VG_WIN1_DES_NC2_2ND
ENCL03  VG_WIN1_DES_NC2_2ND
ENCL04  VG_WIN1_DES_NC2_2ND
ENCL05  VG_WIN1_DES_NC2_2ND
ENCS01  VG_WIN1_DES_NC_2ND
```

```
ENCS02   VG_WIN1_DES_NC_2ND
ENCS03   VG_WIN1_DES_NC_2ND
ENCS04   VG_WIN1_DES_NC_2ND
ENCS05   VG_WIN1_DES_NC_2ND
EW1001   VG_WIN1_DES2            SCRATCH
EW1003   VG_WIN1_DES2            ASSIGNED  E501-OBK11-WIN1, gen=3
EW1004   VG_WIN1_DES2            SCRATCH
EW1005   VG_WIN1_DES2            ASSIGNED  E501-OBK11-WIN1, gen=6
EW1006   VG_WIN1_DES2            ASSIGNED  E501-OBK11-WIN1, gen=8
EW1007   VG_WIN1_DES2            ASSIGNED  E501-OBK11-WIN1, gen=9
EW1008   VG_WIN1_DES2            ASSIGNED  E501-OBK11-WIN1, gen=10
EW1009   VG_WIN1_DES2            SCRATCH
EW1010   VG_WIN1_DES2            SCRATCH
VWIB01   VG_WIN1_DES2            SCRATCH
VWIB02   VG_WIN1_DES2            SCRATCH
VWIB03   VG_WIN1_DES2            SCRATCH
VWIB04   VG_WIN1_DES2            SCRATCH
VWIB05   VG_WIN1_DES2            SCRATCH



Deletion of unreferenced volumes


Volume   Group
======   =====



IMPORT RESULT SUMMARY: Numbers of tape volumes


Volume                Import     <===BackBox catalog===>     <===NSK tape catalog==>
group                 source     Added   Updated   Deleted     Added   Updated   Deleted
======               =======     =====   =======   =======     =====   =======   =======


VG_WIN1_DES2    DSM/TC volcat \ETINIUM.SHCH409VC, pool E501_WIN_2ND
                 Newest volume in Import: EW1008 unloaded on 2025-09-23 16:16:42
                          14         0        14         0         0         0         0


VG_WIN1_DES_NC2_2ND
                 no tape catalog
                 Newest volume in Import: ENCL01 unloaded on 2025-09-18 14:25:41
                           4         0         4         0         0         0         0


VG_WIN1_DES_NC_2ND
                 no tape catalog
                 Newest volume in Import: ENCS02 unloaded on 2025-09-18 14:26:42
                           5         0         5         0         0         0         0



IMPORT RESULT SUMMARY:  other activity on DSM/TC


Volume                       <======Tape files======> <===Disk files==>
group                                 Added      Deleted                Added
======                                =====      =======                =====


VG_WIN1_DES2    DSM/TC volcat \ETINIUM.SHCH409VC, pool E501_WIN_2ND
                                           0             0                     0


YINE500-I3342 \ETINIUM.$X1S3 imported FULL catalogs for data store
```

```
E501_WIN1_SND (23 volumes processed). Report in $S.#bpak.E5imp

YINE500-BB051 Process \ETINIUM.$X1S3 ended on  2025-10-03 16:48
```

CONFIGURATION CHANGES

The Configuration Changes procedures that follow are given as reference, actual procedures will vary according to exact Catalog Sync configuration and context. Careful planning is always required because of the potential impact of a Catalog Sync.

Stop All Export Activities

- Remove any scheduled Export job in NetBatch.
- Update the Catalog Sync Export configuration page.
    - Set Full Export Frequency to zero.
    - Set Export Check Delay to zero.
    - Set Export Destination to blanks.

Stop All Import Activities

- Remove any scheduled Import job in NetBatch.

Delete All Data Related to a SECONDARY Data Store

Cleanup when a SECONDARY Data Store is definitively abandoned:

- Delete the content of disk sub-volume Export Destination.
- Delete the DSM/TC entries associated with the MEDIACOM commands DELETE TAPE FILE and DELETE TAPEVOLUME.
- Delete the volumes of the SECONDARY Data Store using the BackBox UI Data Store Administration > Catalog Detach.
- Remove the Volume Groups and Data Store from the configuration, by using the BackBox UI Configuration.
- If possible, delete the replicated images of virtual volumes in the SECONDARY Data Store by using native tools for this storage: Windows Explorer for the WINDISK Data Stores.
- If possible, delete the encryption keys replicated in the SECONDARY key server by using native tools for this key server: the administrative client of the HPE ESKM.

Delete All Data Related to a PRIMARY Data Store

Cleanup when a PRIMARY Data Store is definitively abandoned:

- By MEDIACOM, delete the DSM/TC TAPE FILE entries associated with the volumes of the Data Store; it ensures that all volumes are SCRATCH in DSM/TC and TMF, so they can be deleted in the next step.
- Delete the volumes of the PRIMARY Data Store by using the BackBox UIVolume. This will delete the following three items:
    - Actual backup data in the storage.
    - Entries in the DSM/TC or TMF catalogs.
    - Entries in the primary BackBox catalog.
- Remove the Volume Groups and Data Store from the configuration by using the BackBox UI Configuration.
- Possibly delete the encryption keys in the PRIMARY key server by using native tools for this key server: the administrative client of the HPE ESKM.

Switch Between PRIMARY and SECONDARY Sites

The scenario assumes a planned switch between the PRIMARY system \A and SECONDARY system \B, in a context where:

- The backup data is replicated by thestorage facility. Only the replication direction will change.
- The encryption keys are duplicated by a key server facility. The keys are not relocated and only the replication direction will change.

- The two BackBox domains are kept in their installation sub-volumes and they will exchange their roles for a specific Data Store: the PRIMARY Data Store will become SECONDARY and vice-versa.
- On both sides, the DSM/TC catalogs (VOLCAT & FILECAT) contain entries related to this Data Store. The pools and cataloged backups are kept in the same DSM/TC locations and they will exchange the roles of source and the replication target.
- Expand is available between \A and \B.

The role switch is associated with the staging area location swap.

On the system that will become SECONDARY, disk space in the new staging area must be available for the metadata.

1. On the PRIMARY side \A wait for completion of backups.

   Wait for a time before replicating, when no backup is being executed on tape volumes of the Data Store.

2. On the PRIMARY side \A, stop all BackBox catalog export activities.

   If the PRIMARY side is still available, check the status of export updates on the Export Status Page and wait for completion of pending exports.

   On this page, the Most Recently Written Volume Exported label and unload time should help in steps 3) and 4) below.

   Fix conditions preventing the export updates to complete. If the EMS Extractor is stopped, automatic Export executions and retries will not execute, but it is possible to manually initiate a final Export update from this page.

   As a final step, disable all export activities: Stop All Export Activities.

3. On the PRIMARY side \A, change the domain access to the Data Store from PRIMARY to SECONDARY, to prohibit any new backup.

4. In the encryption key servers, ensure all replication of encryption keys is completed, and then reverse the direction of replication.

   Eventually identify the latest key generated in the Volume detail page of the latest volume exported. See step 2) above.

5. In the storage, ensure that all backup data replication is completed (certain commands, such as sync for DataDomain servers might be required) and then reverse the direction of replication.

   Verify the replication completion: check the status of the Most Recently Written Volume Exported.

6. On the former PRIMARY side \A, assign a disk sub-volume for the staging area of its new SECONDARY role.

7. On the SECONDARY side \B, complete import

   activities. Remove any scheduled Import job

   in NetBatch.

   Check the status of import updates in the Import Status

   Page. Initiate a last Import update from this page.

   Compare the result in the Import Status page to the Export Status page of the other

   system \A. Execute a restore LISTONLY from the latest tape volume included in the catalog

   import.

8. Promote the SECONDARY Data Store on side \B to PRIMARY.

Change the domain access to the Data Store from SECONDARY to PRIMARY. Configure the Catalog export for the Data Store.

Execute a full export.

9. On the SECONDARY side \A configure the Catalog Import for the Data Store.

   Execute an import update.

   When completed successfully, schedule import jobs in Netbatch.

10. If possible, schedule full export jobs in NetBatch.

11. Execute a test backup on system \B and verify the restore from replicated data and metadata in system \A.

APPENDIX A - Transfer Without Expand

If Expand is not available between the PRIMARY and the SECONDARY sites to quickly move the export files, the user must implement an additional intermediate staging area target of the export function on the PRIMARY side.

The user must set and operate the move of these export files between the intermediate staging area on the PRIMARY side and the staging area on the SECONDARY side.

A way to move the files is to use backup/restore on a BackBox tape volume. This volume will be moved/ replicated by the same means as the other BackBox tape volumes are made available to the SECONDARY side.

Important: This special volume should be not cataloged. It will be created in a different primary BackBox Data Store: Data Store-2 under a very specific label that will be dedicated to this usage.

The path(s) of this Data Store must also be set for replication, preferably by using the same paths as the main primary Data Store.

On the PRIMARY site:

1. For a full export, the user must submit a backup of the whole intermediate staging area after the FULL export has completed, to this special not cataloged volume.
2. A partial backup should be scheduled as soon as possible after the backup window, to quickly save on the other site the catalog information about the new backups.

On the SECONDARY site:

1. On the SECONDARY site, create a Restricted Data Store as a pair to Data Store-2. For convenience, use the same name as Data Store-2. This will point to the replication folder where all the volumes from primary site will be restored - including the special un-cataloged volume containing the catalog information.
   Before this tape volume can be read on the SECONDARY site, it must be created in this restricted Data Store, in a Volume Group not associated to a DSM/TC or other catalog.
2. After a full export and the backup of the staging area in the primary site,
   - Restore the whole content of the backup on the staging area in the SECONDARY site replacing the files that are already existing on disk.
   - In the BackBox UI > Storage Admin > Catalog Import.
   - Check the statistics about new files to import
   - Initiate a FULL Import
3. Injecting the update informationinto the local catalogs can be operated manually or automatically.
   - The manual operation consists in restoring the special volume that backed up the new catalog data, then through the BackBox UI, in checking the status of the local staging area, and in submitting an update import.
   - For the automation, a batch job can be scheduled in NetBatch. It will contain the restore from the special volume including the catalog data and the execution of the TACL macro BB027_IMPORT_CATALOG with the parameter TYPE UPDATE.

The frequency of this job is less critical as the catalog information is already available in the special volume in the replicated storage.

APPENDIX B - Disaster Recovery Scenario when DataStore Type is Qorestor

Use the information in this Appendix to set up the environment for Nonstop recovery purposes, in case the main system (local Nonstop node) crashes and data needs to be recovered right away from a secondary system (DR Nonstop node).

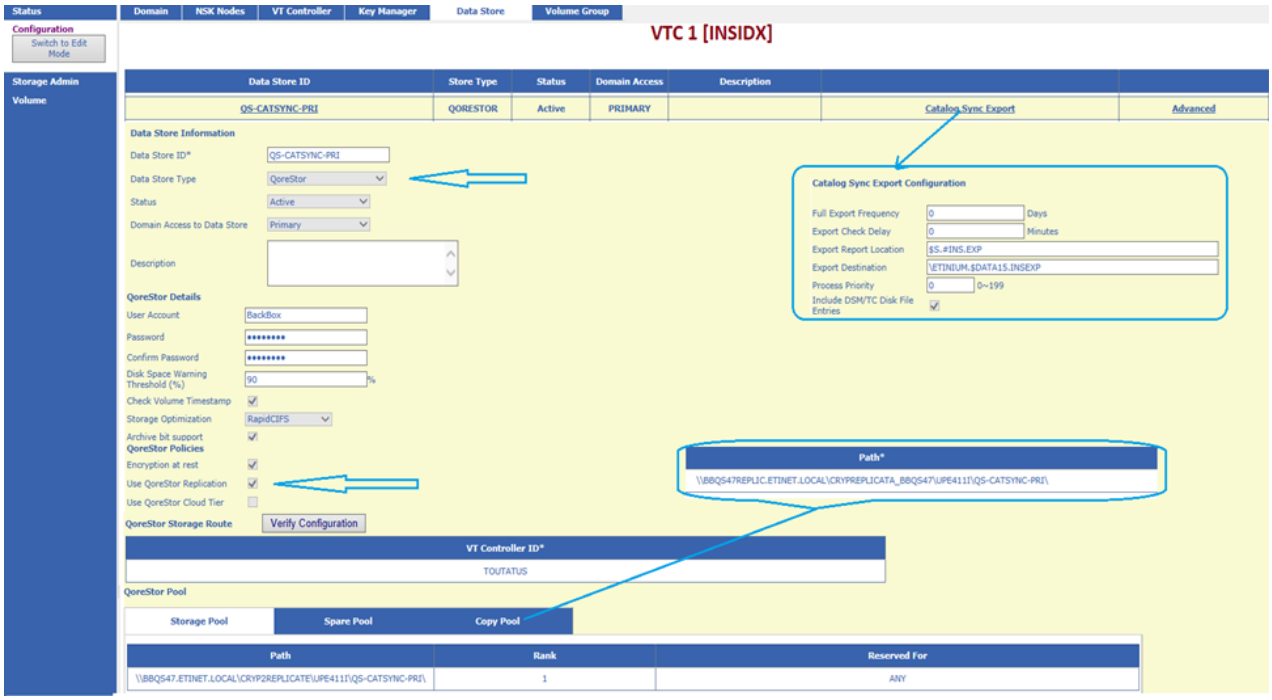
Nonstop Systems:

- Primary [local Nonstop node]
- Secondary [DR Nonstop node]

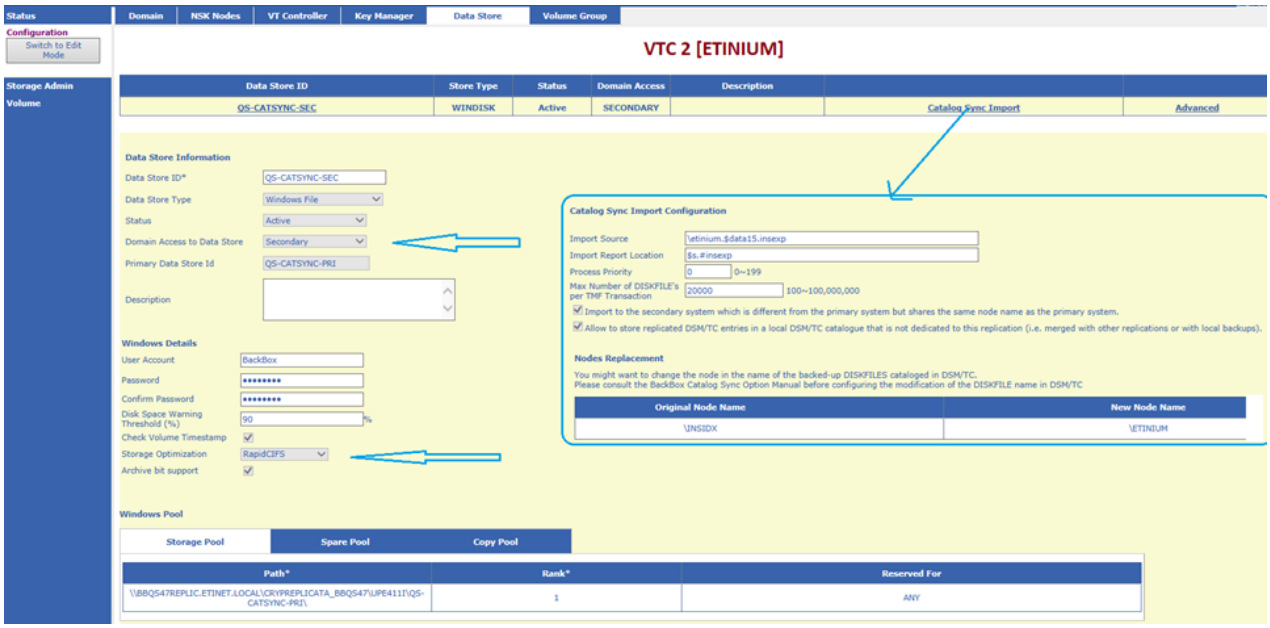
Setup

1. Setup two systems:
   - VTC1 Primary [local Nonstop node] with QoreStor Replication
   - VTC2 Secondary [DR Nonstop node] with Win-Store

2. Configure Data Store[QoreStor] with QoreStor Replication in system VTC1 Primary [local Nonstop node]



3. Set up Data Store [Windows File] in VTC2 Secondary [DR Nonstop node].



⚠	The Storage Optimization = RapidCIFS Storage Pool path for [SECONDARY] = Copy Pool path of QoreStor for [PRIMARY]

4. Check the export/import results.

```
UPE411I-BB051 -  CatSync Export/Import process \INSIDX.$Z5V3   2024-01-23 21:39

UPE411I-W3162 Domain license will expire on 2024-01-30.
Data store   : QS-CATSYNC-PRI -
Process type          : EXPORT FULL catalogs
DSM/TC disk files     : included
Export id             : 2024-01-23_21:39:01
Export destination    : \ETINIUM.$DATA15.INSEXP

Volume   Group                    Catalog status
------   -------                  --------------

CATPR1   VG-QS-CATSYNC-PRI        ASSIGNED   QSCATA, gen=4
CATPR2   VG-QS-CATSYNC-PRI        ASSIGNED   QSCATA, gen=5
CATPR3   VG-QS-CATSYNC-PRI        ASSIGNED   QSCATA, gen=6
CATPR4   VG-QS-CATSYNC-PRI        ASSIGNED   QSCATA, gen=7
CATPR5   VG-QS-CATSYNC-PRI        ASSIGNED   QSCATA, gen=8
CATPR6   VG-QS-CATSYNC-PRI        ASSIGNED   QSCATA, gen=9
CATPR7   VG-QS-CATSYNC-PRI        ASSIGNED   QSCATA, gen=1
CATPR8   VG-QS-CATSYNC-PRI        ASSIGNED   QSCATA, gen=2
CATPR9   VG-QS-CATSYNC-PRI        ASSIGNED   QSCATA, gen=3

Volume group          NSK primary catalog (pool name)          Number of   Nbr DSM/TC
                      Most recently written volume               volumes   disk files
------------          ------------------------------           -------   ----------

VG-QS-CATSYNC-PRI     DSM/TC volcat \INSIDX.YINGTEST_VOLCAT, pool QS_CATSYNC_PRI
                      CATPR6 unloaded on 2024-01-23 21:37:34          9           0

UPE411I-I3279 \INSIDX.$Z5V3 exported FULL catalogs for data store
QS-CATSYNC-PRI (9 volumes processed). Report in $S.#INS.EXP

UPE411I-BB051 Process \INSIDX.$Z5V3 ended on  2024-01-23 21:39
$ETINET YINGQC 18>
```

5. For full or Update Export/Import and manual preparation of BBDBM, follow the procedure in the BackBox Catalog Sync Option document.

⚠	For more details regarding Catalog Sync customized environments and settings, contactETI-NET Support.