Quantum

DXi V5000, DXi4800, and DXi9000 Series Release Notes 4.5.2

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Purpose of This Release

The DXi 4.5.2 Software release supports DXi4800, DXi9000/9100, and DXi V5000 disk backup systems.

What's New in DXi 4.5.2?

This software release introduces Quantum's new OST WORM (Write Once, Read Many) feature, which can be enabled for a specified new or existing OST LSU share to designate all data in the share fully protected from both erasure and encryption.

For instructions on enabling existing LSU shares with the OST WORM feature or creating new ones with the feature enabled, see <u>OST WORM Feature</u>.

A Caution: Systems currently using DXi Software versions earlier than 4.1.1.2 MUST UPGRADE TO 4.1.1.2 before upgrading to version 4.5.2.

If your current DXi Software version is earlier than 4.1.1.2 and you begin upgrading via the **Software Upgrade** button on either the *DXi Home* page or from the *Utilities* > *Software Upgrade* page, the upgrade will be disallowed. Your DXi will post an Admin Alert stating that you cannot upgrade from your current DXi software version <existing version number>.

To complete this 2-step upgrade, see either of the following pages based on your DXi product, and then click on the **Software** tab.

DXi4800 Downloads: https://www.quantum.com/en/service-support/downloads-and-firmware/dxi4800/

Note: If you have DXi4800 with two JBODs and your DXi software version is earlier than 4.1.1.2, call Service before upgrading to 4.1.1.2.

DXi9000/9100 Downloads: https://www.quantum.com/en/service-support/downloads-and-firmware/dxi9000/

In general, Quantum strongly recommends upgrading to the latest version of DXi software before installing capacity upgrades, regardless of the capacity increment.

Product Compatibility List

The following table provides information about DXi hardware compatibility with DXi 4.5.2 Software.

Component	Description
DXi4800	• 1 Node
	1 to 2 RAID controller cards.
	0 to 4 Expansion modules (JBODs)
	1 x 1 GbE Ethernet ports
	(Optional) 2 x 10 GbE Ethernet ports
	 (Optional) Up to 8 x 25 GbE Ethernet ports (SFP28 optical or DAC Copper)
	• (Optional) Up to 16 x 10 GbE SFP Ethernet ports or 16 x 10GbE Base-T Ethernet ports.
	(Optional) Up to 8 x 16 Gb Fibre Channel ports (for VTL or PTT)
	 (Optional) Up to 8 x 100 GbE Ethernet ports (Optical or DAC Copper)
	8 TB - 315 TB usable capacity
DXi9000 SD	• 1 Node
	1 Array module (RBOD)
	0 to 9 Expansion modules (EBODs)
	1 x 1 GbE Ethernet ports
	(Optional) 2 x 10 GbE Ethernet ports
	 (Optional) Up to 8 x 25 GbE Ethernet ports (SFP28 optical or DAC Copper)
	• (Optional) Up to 16 x 10 GbE SFP Ethernet ports or 16 x 10GbE Base-T Ethernet ports.
	 (Optional) Up to 16 x 16 Gb Fibre Channel ports (for VTL or PTT)
	(Optional) Up to 8 x 100 GbE Ethernet ports (Optical or DAC Copper)
	• 51 TB - 1020 TB usable capacity

Component	Description
DXi9000 HD	• 1 Node
	1 Array module (RBOD)
	1 Expansion module (EBOD)
	1 x 1 GbE Ethernet ports
	(Optional) 2 x 10 GbE Ethernet ports
	 (Optional) Up to 8 x 25 GbE Ethernet ports (SFP28 optical or DAC Copper)
	• (Optional) Up to 16 x 10 GbE SFP Ethernet ports or 16 x 10GbE Base-T Ethernet ports.
	 (Optional) Up to 16 x 16 Gb Fibre Channel ports (for VTL or PTT)
	 (Optional) Up to 8 x 100 GbE Ethernet ports (Optical or DAC Copper)
	204 TB - 1020 TB usable capacity
DXi9100	• 1 Node
	1-2 Array modules (RBODs)
	0-2 Expansion modules (EBODs)
	1 x 1 GbE Ethernet ports
	2 x 10 GbE Ethernet ports
	(Optional) 2 x 10 GbE Ethernet ports
	 (Optional) Up to 8 x 25 GbE Ethernet ports (SFP28 optical or DAC Copper)
	• (Optional) Up to 16 x 10 GbE SFP Ethernet ports or 16 x 10GbE Base-T Ethernet ports.
	 (Optional) Up to 16 x 16 Gb Fibre Channel ports (for VTL or PTT)
	 (Optional) Up to 8 x 100 GbE Ethernet ports (Optical or DAC Copper)
	204 TB - 2 PB usable capacity

OST WORM Feature

DXi Software Version 4.5.2 has added the capability of enabling both newly created and existing OST LSUs (Logical Storage Units) with the WORM (Write Once, Read Many) feature. This new DXi capability safeguards all data on WORM-enabled LSUs from being encrypted, modified, or deleted within a user-configured timeframe. Data saved on these LSUs is protected in two ways:

• Immutability: WORM-enabled backup images are read-only and cannot be modified, corrupted, or encrypted following backup.

 Indelibility: WORM-enabled backup images cannot be deleted before expiration, protecting share data against malicious deletion.

Important Notes

- You must download the latest OST Plugin (version 11.0.0 or later) to use the OST WORM feature. See https://www.quantum.com/en/service-support/resources/other-pages/ost-client-plugins/.
- This feature is not the same as Secure Snapshots, which saves and securely stores recoverable static images, or snapshots, of any specified share data. See Step 3: Add LSUs and LSU in your DXi product's Documentation Center. For more information on Secure Snapshots, see DXi Secure Snapshots.
- The OST WORM feature cannot be enabled on LSUs that have Secure Snapshots enabled. The two features cannot be enabled on the same LSUs.
- NTP must be enabled to use OST WORM.

Example: Updated DXi GUI screens contain the following new controls:

Enable WORM 😮		
Minimum lock time (actual lock time set by backup policy)	0	(seconds)
Maximum lock time (actual lock time set by backup policy)	1577923200	(seconds)

- Use the Enable WORM checkbox to enable the feature in added or edited LSUs.
- Use the *Minimum lock time* and *Maximum lock time* text boxes to set the minimum and maximum WORM retention limits. Actual retention is set within the backup policy.
- Note: OST WORM images are immutable (cannot be changed) as soon as they are created and indelible (cannot be deleted) until the backup policy retention period expires, unless extended. For example, 1577923200 seconds shown in the example above = 438, 312 hours, or 2,609 weeks, or 600.43 months, or 50 years.

Why Are There Minimum and Maximum Lock Times?

Setting these times enforces the maximum and minimum lock times that can be set for a backup policy. Lock times must fall within these boundaries.

WORM-enabled shares are indicated in the new **WORM** column in the updated **Logical Storage Unit List** table, as shown in the following example.

								нер
Selected LSUs will be deleted 🕴 🗌 Force Delete LSU 🕴 OST Service Ready 😯								
Storage Server	Physical Capacity	Active Connections	Backup Images	WORM	Automatic Image Replication	Secure Snapshots	Snapshot Retention (days)	Description
NoWORM1	10.00 GB	0	0	Disabled	Disabled	Disabled		
NoWORM1	10.00 GB	0	0	Disabled	Disabled	Disabled		
WORM1	10.00 GB	0	0	Enabled	Disabled	Disabled		
WORM1	10.00 GB	0	0	Enabled	Disabled	Disabled		
Edit	Delete	-						
	be deleted ii itorage Server loWORM1 loWORM1 VORM1 VORM1 VORM1	be deleted Force Delete LS itorage Server Physical Capacity loWORM1 10.00 GB loWORM1 10.00 GB vORM1 Delete	be deleted ii Force Delete LSU iii OST Service Restorage Server torage Server Physical Capacity Active Connections loWORM1 10.00 GB 0 loWORM1 10.00 GB 0 vORM1 Delete 0	be deleted ii Force Delete LSU ii OST Service Ready iii torage Server Physical Capacity Active Connections Backup Images IoWORM1 10 00 GB 0 0 IoWORM1 10 00 GB 0 0 VORM1 10 00 GB 0 0	be deleted ii Force Delete LSU ii OST Service Ready Images WORM torage Server Physical Capacity Active Connections Backup Images WORM IoWORM1 10.00 GB 0 Disabled Images Images WORM IoWORM1 10.00 GB 0 0 Disabled Images Images <th>be deleted ii Force Delete LSU iii OST Service Ready Iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii</th> <th>be deleted ii Force Delete LSU ii OST Service Ready Images WORM Automatic Image Replication Secure Snapshots torage Server Physical Capacity Active Connections Backup Images WORM Automatic Image Replication Secure Snapshots toWORM1 10.00 GB 0 0 Disabled Disabled Disabled toWORM1 10.00 GB 0 0 Disabled Disabled Disabled vORM1 10.00 GB 0 0 Disabled Disabled Disabled vORM1 10.00 GB 0 0 Enabled Disabled Disabled</th> <th>be deleted ii Force Delete LSU ii OST Service Ready Images WORM Automatic Image Replication Secure Snapshots Snapshot Retention (days) torage Server Physical Capacity Active Connections Backup Images WORM Automatic Image Replication Secure Snapshots Snapshot Retention (days) toWORM1 10.00 GB 0 Disabled Disabled Disabled Disabled toWORM1 10.00 GB 0 0 Disabled Disabled Disabled vORM1 10.00 GB 0 0 Enabled Disabled Disabled vORM1 10.00 GB 0 0 Enabled Disabled Disabled</th>	be deleted ii Force Delete LSU iii OST Service Ready Iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	be deleted ii Force Delete LSU ii OST Service Ready Images WORM Automatic Image Replication Secure Snapshots torage Server Physical Capacity Active Connections Backup Images WORM Automatic Image Replication Secure Snapshots toWORM1 10.00 GB 0 0 Disabled Disabled Disabled toWORM1 10.00 GB 0 0 Disabled Disabled Disabled vORM1 10.00 GB 0 0 Disabled Disabled Disabled vORM1 10.00 GB 0 0 Enabled Disabled Disabled	be deleted ii Force Delete LSU ii OST Service Ready Images WORM Automatic Image Replication Secure Snapshots Snapshot Retention (days) torage Server Physical Capacity Active Connections Backup Images WORM Automatic Image Replication Secure Snapshots Snapshot Retention (days) toWORM1 10.00 GB 0 Disabled Disabled Disabled Disabled toWORM1 10.00 GB 0 0 Disabled Disabled Disabled vORM1 10.00 GB 0 0 Enabled Disabled Disabled vORM1 10.00 GB 0 0 Enabled Disabled Disabled

Enabling OST WORM in LSU Shares

You can enable the OST WORM feature:

- While creating OST LSU shares, from the OST Configuration Wizard > Step 3 Add LSUs. See Creating WORM-enabled Shares in the DXi OST Wizard.
- In new or existing OST LSU shares, when adding an LSU to an existing storage server or editing an LSU. See Adding an LSU to an Existing Storage Server and Editing an LSU.

Creating WORM-enabled Shares in the DXi OST Wizard

- 1. From your DXi console, on the Wizards menu, select OST.
- 2. Use the instructions in OST Wizard to complete steps 1 About and 2 Add Storage Servers.
- 3. Enter information about the LSU.

LSU Information	Description
Storage Server	Select the storage server that will contain the new LSU.

LSU Information	Description
Use Available Capacity	Select this option to add an LSU that uses the available capacity on the system.
	You cannot add an available capacity LSU to a storage server that already contains an LSU. Also, if you add an available capacity LSU to a storage server, you cannot add additional LSUs to that same storage server.
	Note: After you add an LSU that uses the Available Capacity option, you cannot change the LSU to use the Specific Capacity option. Instead, you must delete the LSU, then add a new LSU and choose the Specific Capacity option.
Specify Capacity	Select this option to specify the physical capacity of the LSU, and then enter the following information.
	LSU Name - Enter the name of the LSU.
	 Physical Capacity - Enter the physical capacity of the LSU (1 to 1048576 GB).
Enable WORM	(Optional) Complete the following steps to enable and set lock times for Write Once, Read Many protection for the new LSU:
	 Select the Enable WORM checkbox to enable OST WORM for the LSU.
	b. Enter the Minimum lock time (indelible end time) to set the minimum time in seconds to activate the feature, following your saving and applying the OST Wizard screens at Step 4, Confirm.
	c. Enter the Maximum lock time (indelible end time) to set the maximum time in seconds to protect the data in the WORM-enabled OST LSU.

Wizards	1 About 2 Add Storage Servers 3 Add LSUs 4 Confirm 5 Download OST Client Plug-In
WELCOME	OST LSUs
APPLICATION	Add LSU
SPECIFIC	* Storage Server WORM3 V
VTL	Ise Available Capacity Specify Capacity
OST	* LSU NamePhysicalLSU
REPLICATION	* Physical Capacity (1 to 1048576 GB)
USERS	Enable WORM 📀
EMAIL ALERTS	Minimum lock time (actual lock time set by backup policy)
SUPPORT	Maximum lock time (actual lock time set by backup policy) (seconds)
FXIT	
	< Previous Next >

4. Click Add.

The LSU displays in the **LSUs Added** table. The new **WORM** column indicates whether the feature is **Enabled** or **Disabled**.

Wizards	1 About 2 Add Storage Servers 3 Add LSUs
WELCOME	OST LSUs
NAS	
APPLICATION	LSUs Added
SPECIFIC	LSU Physical Capacity Storage Server WORM
VTL	PhysicalLSU Available capacity WORM3 Enabled
OST	
REPLICATION	
USERS	
EMAIL ALERTS	
SUPPORT	
EXIT	
	Add Delete
	<pre></pre>

5. (Optional) To add additional LSUs, repeat Steps 1–4.

To remove an LSU, select it in the LSUs Added table and click Delete.

- 6. Click Next to continue.
- 7. Use the instructions in OST Wizard to complete steps 4 Confirm and 5 Download.

Additional Information

- The LSU limit is 1000.
- To configure the LSU for Automatic Image Replication, use the Configuration > OST > LSU page (see LSU).

Adding an LSU to an Existing Storage Server

Add an LSU to a storage server to present the storage capacity of the DXi V5000, DXi4800, and DXi9000 Series as an LSU that is compatible with backup applications that support OST. You can add an LSU with a specific capacity, or you can add an LSU that uses the available capacity of the DXi V5000, DXi4800, and DXi9000 Series.

(i) Note: You must create a storage server before you can add an LSU. See Adding a Storage Server.

To add an LSU to a storage server:

1. Click Add.

The Add Logical Storage Unit page displays.

Add Logical Storage Unit			Help
LSU Settings			
Storage Server	WORM1	~	0
Available Capacity			
Specific Capacity			
* LSU Name)
* Physical Capacity			(1 to 1048576 GB)
Description)
Enable WORM 😮			
Minimum lock time (actual lock time set by backup policy)		0	(seconds)
Maximum lock time (actual lock time set by backup policy)		(1577923200	(seconds)
Enable Automatic Image Replication	in 😮		
Replication Target E	DXis		
No replication target DXis have be	en configured.		
* Remote Storage Server Name)
* Remote LSU Name	_PhysicalLSU)
Remote User		~	8
Enable Secure Snapshots			
Snapshot Retention		(days)	
* Required Field Apply Reset	Cancel		

2. Enter information about the LSU.

Storage Server	Select the storage server that will contain the new LSU.
Available Capacity	(Recommended for best performance) Select this option to add an LSU that uses the available capacity on the system.
	You cannot add an available capacity LSU to a storage server that already contains an LSU. Also, if you add an available capacity LSU to a storage server, you cannot add additional LSUs to that same storage server.
	Note: After you add an LSU that uses the Available Capacity option, you cannot change the LSU to use the Specific Capacity option. Instead, you must delete the LSU, then add a new LSU and choose the Specific Capacity option. See Deleting an LSU.
Specific Capacity	Select this option to specify the physical capacity of the LSU, and then enter the following information.
	LSU Name - Enter the name of the LSU.
	• Physical Capacity - Enter the physical capacity of the LSU (1 to 1048576 GB).
	Note: Specifying a specific size limits the size of the LSU in User Bytes. Quantum recommends setting LSUs to maximum size (1048576 GB) because spanning them on a backup is not possible.
Description	(Optional) In the Description box, enter a brief description of the LSU.
Enable OST WORM	(Optional) Complete the following steps to enable and set lock times for Write Once, Read Many protection for the new LSU:
	a. Select the Enable WORM checkbox to enable OST WORM for the LSU.
	b. Enter the Minimum lock time (indelible end time) to set the minimum time in seconds to activate the feature, following your saving and applying the OST Wizard screens at Step 4, Confirm.
	c. Enter the Maximum lock time (indelible end time) to set the maximum time in seconds to protect the data in the WORM-enabled OST LSU.

Enable Secure Snapshots	(Optional) Check this box to enable or disable Secure Snapshots for this LSU. See DXi Secure Snapshots, Enabling Systemwide Secure Snapshots and Enabling Secure Snapshots for Individual Shares.
	Notes:
	 OST WORM and Secure Snapshots cannot be enabled for the same LSU at the same time.
	Deduplication must be enabled in order to enable Secure Snapshots.
Snapshot Retention (days)	When snapshots have been enabled for this LSU, enter the number of days to retain each snapshot for this LSU.
	Note: Any change to the share retention will affect only new snapshots. The retention for existing snapshots can be extended but never reduced.

3. (Optional) Select the **Enable Automatic Image Replication** check box to automatically replicate (duplicate) data on the LSU to a remote LSU on another DXi.

Automatic Image Replication (AIR) is disabled by default. If enabled, data on an LSU is automatically replicated to a remote LSU that resides on a DXi in a different NetBackup domain. The timing of the duplication, as well as the backup images that are duplicated, are determined by the storage lifecycle policies (SLPs) configured in NetBackup.

OST AIR requires NetBackup 7.1 or higher. For information about configuring NetBackup for Automatic Image Replication, see the *DXi-Series NetBackup and Backup Exec OST Configuration Guide* (6-67079).

Note: You must configure at least one remote user before you can enable Automatic Image Replication. See Manage Remote Users.

- 4. If Automatic Image Replication is enabled, select the replication target you want to replicate images to. (You can select only a single target.) When images are replicated, data will be sent to the selected target.
- 5. If Automatic Image Replication is enabled, specify the following information:

Remote Storage Server Name	 The name of the remote storage server (on the target system) to replicate data to. The source and target systems must reside in different NetBackup domains. Note: To configure the target system, see Replication Send.
Remote LSU Name	The name of the LSU in the remote storage server that will receive the replicated data.
Remote User	The OST user credentials to use for authentication on the remote (target) system. The selected remote user <i>must</i> match an Authenticated User on the Configuration > OST > Manage Users page on the target system. See Manage Users.

6. Click Apply.

Editing an LSU

Edit an LSU to change its capacity, description, or automatic image replication settings.

To edit an LSU:

1. Select the LSU and click Edit.

The Edit Logical Storage Unit page displays.

Edit Logical Storage Unit			Help
Storage Server Settings			
Name	LSU1		
Storage Server Name	WORM1		
* Physical Capacity	10		to 1048576 GB)
Description			
Enable WORM (2)			
Minimum lock time (actual	0	(seconds)	
Maximum lock time (actual lock time set by backup policy)		1577923200	(seconds)
Enable Automatic Image Replication 😮			
Replication Target	DXis		
No replication target DXis have been configured.			
* Remote Storage Server Name			
* Remote LSU Name	_PhysicalLSU		
Remote User		~	9
Enable Secure Snapshots			
Snapshot Retention		(days)	
* Required Field			
Apply Reset	Cancel		

2. Enter information about the LSU:

() Note: If you are editing an LSU, the Name option cannot be changed.

Physical Capacity	(Specific capacity LSUs only) Enter the physical capacity of the LSU (1 to 1048576 GB).
Description	(Optional) Enter a brief description of the LSU.

Enable OST WORM	(Optional) Complete the following steps to enable and set lock times for Write Once, Read Many protection for the new LSU:
	a. Select the Enable WORM checkbox to enable OST WORM for the LSU.
	b. Enter the Minimum lock time (indelible end time) to set the minimum time in seconds to activate the feature, following your saving and applying the OST Wizard screens at Step 4, Confirm.
	c. Enter the Maximum lock time (indelible end time) to set the maximum time in seconds to protect the data in the WORM-enabled OST LSU.
Enable Secure Snapshots	(Optional) Check this box to enable Secure Snapshots for this LSU. See DXi Secure Snapshots, Enabling Systemwide Secure Snapshots and Enabling Secure Snapshots for OST LSUs.
	Notes:
	 OST WORM and Secure Snapshots cannot be enabled for the same LSU at the same time.
	 Deduplication must be enabled in order to enable Secure Snapshots.
Snapshot Retention	When snapshots have been enabled for this LSU, enter the number of days to retain each snapshot for this LSU.
(days)	Note: Any change to the share retention will affect only new snapshots. The retention for existing snapshots can be extended but never reduced.

3. (Optional) Select the **Enable Automatic Image Replication** check box to automatically replicate (duplicate) data on the LSU to a remote LSU on another system.

Automatic Image Replication (AIR) is disabled by default. If enabled, data on an LSU is automatically replicated to a remote LSU that resides on a system in a different NetBackup domain. The timing of the duplication, as well as the backup images that are duplicated, are determined by the storage lifecycle policies (SLPs) configured in NetBackup.

OST AIR requires NetBackup 7.1 or higher. For information about configuring NetBackup for Automatic Image Replication, see the *DXi-Series NetBackup and Backup Exec OST Configuration Guide* (6-67079).

Note: You must configure at least one remote user before you can enable Automatic Image Replication. See Manage Remote Users.

- 4. If Automatic Image Replication is enabled, select the replication target you want to replicate images to. (You can select only a single target.) When images are replicated, data will be sent to the selected target.
- 5. If Automatic Image Replication is enabled, specify the following information:

Remote Storage Server Name	The name of the remote storage server (on the target system) to replicate data to. The source and target systems must reside in different NetBackup domains. Note: To configure the target system, see Replication Send.
Remote LSU Name	The name of the LSU in the remote storage server that will receive the replicated data.
Remote User	The OST user credentials to use for authentication on the remote (target) system. The selected remote user <i>must</i> match a local user on the Configuration > OST > Manage Users page on the target system. See Manage Users.

6. Click Apply.

Command Line Interface (CLI) WORM Command Updates

Add an LSU

Add an LSU to a specified storage server.

Notes:

- If you specify the --unlimited option, the new LSU will be added with the name _PhysicalLSU.
- Secure Snapshots and WORM cannot be enabled for the same LSU.

Command

```
syscli --add lsu {--name <lsu_name> --capacity <lsu_capacity_GB>} | --unlimited
--storageserver <server_name> [--desc <lsu description>] [--snapshotretention
<days>] [--worm disabled|enabled] [--wormminlock <time>] [--wormmaxlock <time>]
```

Command Attributes

Review the following attribute descriptions.

add lsu	Adds an LSU to the specified storage server.
name <lsu_name></lsu_name>	Name of LSU. Note: Do not use "_PhysicalLSU" because it is a reserved LSU name.

capacity	Capacity of LSU in GB.	
unlimited	If specified, the capacity will be the available physical capacity on the system.	
storageserver <server_name></server_name>	Enter the name of the storage server that will contain this LSU.	
desc <lsu_description></lsu_description>	Enter a description of the LSU.	
snapshotretention <days></days>	Enables Secure Snapshots functionality and specifies the snapshot retention period in days.	
	Notes:	
	 This does not create snapshots. Please use scheduled events to create snapshots. 	
	 Snapshots cannot be enabled for the same LSU if WORM is enabled. 	
worm	Enables or disables WORM.	
	Note: WORM cannot be enabled for the same LSU if Secure Snapshots are enabled.	
wormminlock	WORM minimum lock time (actual lock time set by backup policy) in seconds.	
wormmaxlock	WORM maximum lock time (actual lock time set by backup policy) in seconds.	

Edit an LSU

Edit an LSU.

1 Note: Secure Snapshots and WORM cannot be enabled for the same LSU.

Command

```
syscli --edit lsu --name <lsu_name> --storageserver <server_name> [--desc <lsu
description>] [--capacity <lsu_capacity_GB>] [--snapshotretention <days> [--
sure]] [--worm disabled|enabled] [--wormminlock <time>] [--wormmaxlock <time>]
```

Command Attributes

Review the following attribute descriptions.

edit lsu	Edit the specified LSU.	
name <lsu_name></lsu_name>	Enter the name of the LSU to edit.	
storageserver <server_name></server_name>	Enter the name of the storage server where the LSU resides.	
desc <lsu_description></lsu_description>	Enter a description of the LSU.	
capacity <lsu_capacity_gb></lsu_capacity_gb>	Enter the capacity of the LSU in GB (specified in whole number).	
snapshotretention <days></days>	Configures Secure Snapshots functionality. A non-zero value enables snapshot creation and specifies the snapshot retention period in days.	
	Notes:	
	 This does not create snapshots. Please use scheduled events or the syscliadd securesnapshot command to create snapshots. 	
	 A value of zero disables Secure Snapshots (confirmation required). Existing snapshots retain their current retention value. 	
	Secure Snapshots may not be enabled if WORM is enabled.	
sure	If specified, the command will execute immediately without asking for confirmation.	
worm	Enables or disables WORM.	
	Note: WORM cannot be enabled if Secure Snapshots are enabled.	
wormminlock	WORM minimum lock time (actual lock time set by backup policy) in seconds.	
wormmaxlock	WORM maximum lock time (actual lock time set by backup policy) in seconds.	

List LSUs

List LSUs attached to a storage server.

Command

syscli --list lsu --storageserver <server_name> [--name <lsu_name>]

```
Example Output - With WORM enabled
List of LSU's
Total count = 2
[LSU = 1]
   LSU name = LSU1
   Server name = WORM1
   Physical capacity = 10.00 GB
   Backup images = 0
   Description =
  OST AIR = disabled
   Secure Snapshots = Disabled
   WORM = enabled
  WORM minimum lock time (indelible end time) = 0 sec.
   WORM maximum lock time (indelible end time) = 1577923200 sec.
[LSU = 2]
   LSU name = LSU2
   Server name = WORM1
   Physical capacity = 10.00 GB
   Backup images = 0
   Description =
  OST AIR = disabled
   Secure Snapshots = Disabled
   WORM = enabled
   WORM minimum lock time (indelible end time) = 0 sec.
   WORM maximum lock time (indelible end time) = 1577923200 sec.
Command completed successfully.
Example Output - Without WORM enabled
List of LSU's
Total count = 2
[LSU = 1]
   LSU name = LSU1
   Server name = NoWORM1
   Physical capacity = 10.00 GB
   Backup images = 0
```

```
Description =

OST AIR = disabled

Secure Snapshots = Disabled

WORM = disabled

[LSU = 2]

LSU name = LSU2

Server name = NoWORM1

Physical capacity = 10.00 GB

Backup images = 0

Description =

OST AIR = disabled

Secure Snapshots = Disabled

WORM = disabled
```

Note: The last 4 items in the example output display only when OST AIR is enabled. Otherwise, the output displays **OST AIR = disabled**.

Command Attributes

Review the following attribute descriptions.

list lsu	Lists LSUs for the specified storage server.
storageserver <server_name></server_name>	Enter the name of the storage server for which to list LSUs.
name <lsu_name></lsu_name>	If you use this option, only information for the specified LSU displays.

Resolved Issues

The following issues were resolved in DXi 4.5.2 Software.

Bug Number	SR Number	Description
53875	659740	Deleted and re-created shares are now available in QFS/NFS.
53942	652024	Failback for snapshots could not run with hyphens in the hostname. Example: host.hostname-1
54147	658917	wget called by yumreport timeout was increased.

Bug Number	SR Number	Description
54254	662051	Firmware bundle for DXi4800 and DXi9x00 now upgrades all versions of Intel X710 NIC firmware.
54255	662051	post-plugnplay.sh script has been updated to detect that Intel X710 NIC adapter version is equal to or greater than 20.0.17 before disabling LLDP.
54399	669649	Unit was stuck in reboot loop after base OS upgrade failure.

Known Issues

DXi 4.5.2 Software has the following known issues:

- <u>Replication Known Issues</u>
- GUI Known Issues
- VDMS Known Issues
- DXi Advanced Reporting Known Issues

Replication Known Issues

Bug Number	SR Number	Description	Workaround
36811		Some chargeback reporting statistics are not maintained for failback operations.	The Input Bytes for the failback operation can be viewed on the source for the failback operation. On the Replication > Send page, hold the cursor over the job status and note the value displayed for Original Data Size .
			Note: After the failback operation is complete, chargeback reporting on the target for the failback operation will accurately report the User Data Size of the data replicated.

Bug Number	SR Number	Description	Workaround
37000	A0599191	If replication is disabled and the re-enabled for a share or partition on the Replication > Send page, previously configured Directory/File or Cartridge Based Replication settings are lost.	This is expected behavior. When replication is disabled, all replication settings for the share or partition are cleared. To re-configure the share or partition for Directory/File or Cartridge Based replication, select it and click Configure .
			 Note: You can disable or enable replication for all shares or partitions on the Replication > Actions page. This method preserves replication settings for all shares or partitions.

GUI Known Issues

Bug Number	SR Number	Description	Workaround
30999		When creating or editing an event on the Configuration > Scheduler page, all times are relative to the workstation from which the GUI is accessed, rather than the DXi.	If the DXi is in a different time zone than the workstation used to access the GUI, make sure to account for the time zone differences when scheduling events.
35426		On the Configuration > OST > Storage Servers page, if there are multiple pages of storage servers, the Delete button is unavailable (gray) if all storage servers on a page are selected even if all the storage servers meet the deletion criteria (no backup images or active connections).	This occurs if a storage server on another page does not meet the deletion criteria. De-select at least one storage server on the displayed page, and the Delete button will be available.
42779		The PTT page allows any number concurrent PTT backup jobs to be configured. When more concurrent backup jobs are started than the PTT license allows (3), the additional jobs fail.	Do not configure more than 3 concurrent PTT backup jobs.

VDMS Known Issues

Bug Number	SR Number	Description	Workaround
47806		VDMS cannot be enabled if a "veeam" account is defined on a connected or disconnected windows workgroup.	Delete the "Veeam" account from the windows workgroup.

DXi Advanced Reporting Known Issues

Bug Number	SR Number	Description	Workaround
39487		On the Replication Ingest report, data for small replication jobs is not graphed accurately, especially when longer time ranges are selected.	See the exported CSV file (Reports > Replication Ingest > Export Replication Chargeback) for the correct data.

Documentation

For the latest DXi V5000, DXi4800, and DXi9000 Series documentation using DXi 4.5.2 software, see the following DXi Documentation Centers:

- DXi V5000 Documentation Center: www.quantum.com/dxiv5000docs
- DXi4800 Documentation Center: www.quantum.com/DXi4800Docs
- DXi9000 Series Documentation Center: <u>www.quantum.com/DXi9000Docs</u>

Supported Backup Applications

For the current list of backup applications supported for use with DXi 4.5.2 Software:

1. Click on https://www.quantum.com/swcompguide.aspx

The Support > Software Compatibility With Tape Libraries page appears.

2. In the Compatibility Guide list, select Software / Disk-Based Backup Systems.

3. (Optional) Select your system and software from the **Storage Device** and **Application Software** lists.

Note: If the storage device and application software are not selected, a full list of all available devices and software will appear and requires a minute or two to populate. Select your system and software for a faster-appearing, shorter list.

4. Click Submit.

(i) Note: Contact the backup application vendor for the latest software revision information.

DXi Additional Notes

For additional information about DXi 4.5.2 Software, refer to the following sections.

- Email Reports
- Quantum Vision

Email Reports

Quantum recommends enabling **Email Reports** after upgrading to DXi 4.5.2 Software (if not already enabled). When enabled, **Email Reports** periodically sends system configuration and status information to Quantum, including any software upgrades you have installed using the **Software Upgrade Utility**. Quantum Support can use this information to provide a better support experience in the future.

To configure Email Reports:

- Make sure a valid outgoing e-mail server is specified on the Configuration > Notifications > Email > Server page.
- (Optional) Specify any additional recipients to receive the reports on the Configuration > Notifications > Email > Email Reports > Recipients page.
- 3. Make sure a weekly **Email Reports** schedule is configured on the **Configuration > Scheduler** page. Configure two weekly recurring events: one for **Status** reports and one for **Configuration** reports.

Quantum Vision

You must update to the latest version of Quantum Vision (4.4.1 or later) to operate with DXi 4.5.2 Software.

Contacting Quantum

More information about this product is available on the Service and Support website at http://www.quantum.com/serviceandsupport/get-help/index.aspx. The Service and Support website contains a collection of information, including answers to frequently asked questions (FAQs). You can also access software, firmware, and drivers through this site.

For further assistance, or if training is desired, contact the Quantum Customer Support Center:

Region	Support Contact
North America	1-800-284-5101 (toll free) +1-720-249-5700
EMEA	+800-7826-8888 (toll free)
	+49 6131 324 185
Asia Pacific	+800-7826-8887 (toll free) +603-7953-3010

For worldwide support:

https://www.quantum.com/serviceandsupport/get-help/index.aspx#contact-support