



Release Notes

Release	DXi 4.0.3 Software
Supported Products	DXi4800 and DXi9000
Date	December 2019

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Purpose of This Release

DXi 4.0.3 Software is a release supporting the DXi4800 and DXi9000 disk backup systems. In addition, DXi 4.0.3 Software includes the following new features and improvements:

- The DXi4800 now supports licensed capacity of up to 315TB with 4 JBODs. Previous maximum storage capacity was 171 TB with 2 JBODs.
- Support for alternate storage vendor and additional memory on DXi9000.

i Note: Quantum recommends upgrading to the latest version of DXi software before installing capacity upgrades, regardless of the capacity increment. Upgrading to 4.0.3 is required for Quantum capacity expansion of more than 171 TB for DXi4800 systems. Version 4.0.2 was created for a specific program. If you have 4.0.2, upgrading to 4.0.3 is recommended but not required.

Product Compatibility List

The following table provides information about hardware compatibility with DXi 4.0.3 Software.

Component	Description
DXi4800	<ul style="list-style-type: none"> • 1 Node • 1 to 2 RAID controller cards. • 0 to 4 Expansion modules (JBODs) • 1 x 1 GbE Ethernet ports • 2 x 10 GbE Ethernet ports • Additional optional network adapter providing combinations of up to 16 x 10 GbE Ethernet ports, 16 x 10 GBase-T Ethernet ports, or 8 x 16 Gb Fibre Channel ports (for VTL or PTT) • 8 TB - 315 TB usable capacity
DXi9000 SD	<ul style="list-style-type: none"> • 1 Node • 1 Array module (RBOD) • 0 to 9 Expansion modules (EBODs) • 1 x 1 GbE Ethernet ports • 2 x 10 GbE Ethernet ports • Additional optional network adapter providing combinations of up to 16 x 10 GbE Ethernet ports, 16 x 10 GBase-T Ethernet ports, or 16 x 16 Gb Fibre Channel ports (for VTL or PTT) • 51 TB - 1020 TB usable capacity
DXi9000 HD	<ul style="list-style-type: none"> • 1 Node • 1 Array module (RBOD) • 1 Expansion module (EBOD) • 1 x 1 GbE Ethernet ports • 2 x 10 GbE Ethernet ports • Additional optional network adapter providing combinations of up to 16 x 10 GbE Ethernet ports, 16 x 10 GBase-T Ethernet ports, or 16 x 16 Gb Fibre Channel ports (for VTL or PTT) • 204 TB - 1020 TB usable capacity

Supported Web Browsers

Web browser software is not included with the DXi4800 and DXi9000. You must obtain and install it separately. The DXi4800 and DXi9000 remote management console supports the following Web browsers:

- Mozilla Firefox 36 or later.
- Google Chrome 40 or later.
- Microsoft Internet Explorer 11.

Additional Information

- For correct operation of the remote management console enable JavaScript in your Web browser.
- DXi Advanced Reporting requires installation of Adobe Flash Player plug-in 10.x or higher.
- DXi Advanced Reporting does not support the 64-bit version of the Flash Player plug-in on Linux. Instead, use the 32-bit Flash Player plug-in and a 32-bit browser.
- If you experience Web browser issues, update to the latest version of your web browser.

Accent File System Plug-In Support

The Accent File System (Accent FS) performs deduplication to minimize bandwidth and sends only unique data over the network. Since the Accent File System appears as a native file system on the *media server* backup host, any program that can write to a file system can use the Accent File System.

The Accent File System uses FUSE (File System in User Space) to export file system requests to a custom daemon. The daemon converts file system requests as appropriate, and transports new user data to the DXi using the distributed deduplication features of the Blockpool API with the DXi's Blockpool (Accent).

The Accent File System is intended to be used by backup applications not supported directly by Quantum application-specific plugins - such as (which has its own share type).

[Click here](#) to download the latest version of the AccentFS Plug-In for DXi4800 and DXi9000.

Required Components

The following components are required for Accent FS operation with the DXi-Series:

- Server Requirements:
 - DXi software version 4.0.1 or greater.
 - One or more application-specific shares.
- Client Server Requirements:
 - FUSE-libs RPM must be installed.
 - Supported platforms:

- Red Hat Enterprise Linux (RHEL) OS 7
- CentOS 7(Linux)

OST Plug-In Support

The Quantum OST plug-ins are based on Veritas OpenStorage API specification Version 11.1.

The latest versions of all OST Plug-ins are available for download at:

<http://www.quantum.com/serviceandsupport/softwareanddocumentationdownloads/ostclientplugin/index.aspx>

For more information on OST Plug-in installation, including supported OS and software versions, see the [OST Plug-in Installation Instructions](#).

Required Components

The following components are required for OST (OpenStorage) operation with the DXi4800 and DXi9000:

- Veritas NetBackup 7.6.x or later or Backup Exec 2014 or later.
- If using the Veritas NetBackup 52xx Appliance platform, version 2.6.0.2 or later.
- Quantum OST Plug-in (downloaded separately through the remote management console or from the Quantum Service and Support Web site).
- Quantum OST storage server (included with the DXi software).

RMAN Plug-In Support

The Quantum RMAN plug-ins are based on Oracle Recovery Manager (RMAN) API specification Version 2.1.

The latest versions of all RMAN Plug-ins are available for download at:

<http://www.quantum.com/serviceandsupport/softwareanddocumentationdownloads/ostclientplugin/index.aspx>

For more information on RMAN Plug-in installation, including supported OS and software versions, see the [RMAN Plug-in Installation Instructions](#).

Required Components

- Oracle 11 or 12.
- Quantum RMAN Plug-in (downloaded separately through the remote management console or from the Quantum Service and Support Web site).

Replication Compatibility

The following DXi software releases can replicate data to the DXi appliance. DXi software releases not shown in the list are not recommended.

		DXi 3.0.x	DXi 3.1.x	DXi 3.2.x	DXi 3.4.x	DXi 4.x
Replication Target	DXi 3.0.x	Yes	Yes	Yes	Yes	Yes
	DXi 3.1.x	Yes	Yes	Yes	Yes	Yes
	DXi 3.2.x	Yes	Yes	Yes	Yes	Yes
	DXi 3.4.x	Yes	Yes	Yes	Yes	Yes
	DXi 4.x	Yes	Yes	Yes	Yes	Yes

i Note: The default number of allowed DXi replication sources is 10. If you need to change these default settings, contact Quantum Customer Support.

DXi REST API Compatibility

The following table provides the applicable DXi REST API version for each DXi software version.

DXi REST API Version	DXi Software Version
1.1	4.0.3

Resolved Issues

The following issues were resolved in DXi 4.0.3 Software.

Bug Number	SR Number	Description
50554	501144	Veeam chroot changes.
50637	506519	Need less intrusive way to close active connections to change LSU size.
50956	523813	Throttle uses wrong TC_MTU on platforms newer than DXi6900 and targets the wrong dev with vlan.
50987	524987	"All stitches must be canceled or flushed" in "bp_stitch_master_destroy".
51025	528566	Can't replicate BLOBs with stitches that shrink non-zero pattern blocklets.
51037	528745	Space reclamation is blocked by common verify actions.

Known Issues

DXi 4.0.3 Software has the following known issues:

- [Replication Known Issues](#)
- [Network Known Issues](#)
- [CLI Known Issues](#)
- [GUI Known Issues](#)
- [VTL Known Issues](#)
- [NAS Known Issues](#)
- [RMAN Known Issues](#)
- [Veeam Known Issues](#)
- [Installation and Upgrade Known Issues](#)
- [Miscellaneous Known Issues](#)
- [DXi Advanced Reporting Known Issues](#)

i Note: The Scheduler command line interface (CLI) commands are deprecated in DXi 4.0.3 Software. These commands continue to function in DXi 4.0.3 Software but will be removed in a future software release. To schedule events, use the **Configuration > Scheduler** page in the remote management console instead.

Replication Known Issues

Bug Number	SR Number	Description	Workaround
31605		On the Home page and the Status > Disk Usage page, the value for Data Size After Reduction is larger than the value for Data Size Before Reduction .	<p>This issue can occur when replication is enabled for a share or partition, but replication is rarely or never run. In this case, continuously replicated data accumulates on the target system, but this data is not included in the value for Data Size Before Reduction until a replication job is performed and a snapshot is saved.</p> <p>To correct the issue, manually initiate replication of the share or partition on the Replication > Send page, and allow the replication to complete.</p> <p>To avoid this issue in the future, schedule replication for the share or partition on the Configuration > Scheduler page. Alternately, you can enable Directory/File or Cartridge Based replication for the share or partition.</p>
36811		Some chargeback reporting statistics are not maintained for failback operations.	<p>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.</p> <p>i 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.</p>

Network Known Issues

Bug Number	SR Number	Description	Workaround
34125		On the Configuration > System > Network page, editing the IP Address , Netmask , and Gateway for a network interface results in the following error: Destination Gateway: <ip_address> is not reachable by any of the current configured IP addresses.	Delete the existing network interface and add a new interface with the desired IP Address , Netmask , and Gateway .

CLI Known Issues

Bug Number	SR Number	Description	Workaround
35104		When using the --edit emailrecipient CLI command, the same e-mail address can be assigned to multiple recipients.	Use the Configuration > Notifications > Email > Recipients page in the remote management console to edit e-mail recipients.

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.

Bug Number	SR Number	Description	Workaround
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.
32609		On the Configuration > Scheduler > Calendar page, after you add or edit an event and specify recurrence until a date, if you hover the cursor over the event, the UNTIL date does not display in human readable format.	Open the event by double-clicking it to view the UNTIL date.
32659		If you reboot or shut down the DXi using the Utilities > Reboot & Shutdown page and leave the web browser window open, after the DXi comes up again, refreshing the open web page causes the reboot or shut down command to be sent to the DXi again.	After you reboot or shut down the DXi using the Utilities > Reboot & Shutdown page, make sure to close the browser window. In general, you should not refresh the web browser (unless instructed to do so) or copy and paste URLs between tabs.
36926		When adding a scheduled event on the Scheduler page, the message Saving, please wait displays, the but the save action does not complete, and the schedule is not set.	Refresh the browser window, and add the scheduled event again.
39135		If a very long security notice is specified on the Configuration > System > Security > Security Notice page, the end of the message may be truncated in the Security Notice dialog box that displays after logging on.	Specify a shorter message on the Configuration > System > Security > Security Notice page.

Bug Number	SR Number	Description	Workaround
39824		On the Status > Hardware > Details > Storage Arrays page, an Attention link displays next to Controllers and Volumes , but clicking the link displays an empty list of non-normal controllers or volumes.	Even though the Attention link displays, drives that are rebuilding are considered normal by the system. Click the Controllers or Volumes link to see a list of all drives.
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.

VTL Known Issues

Bug Number	SR Number	Description	Workaround
41109		Intermittent backup failures occur with the IBM LTO-5 tape drive emulation selected.	Force disable append only mode in NetBackup: Unix Use the following touch file to disable append mode: <code>/usr/openv/netbackup/db/config/DISABLE_APPEND_MODE</code> Windows Use the following touch file to disable append mode: <code>%install_path%\Veritas\Netbackup\db\config\DISABLE_APPEND_MODE</code>

NAS Known Issues

Bug Number	SR Number	Description	Workaround
27908	1387940 1408612 1465392 1493203	Files copied to exported NFS and CIFS shares do not retain their original creation time.	To determine the creation time, examine the original file rather than the copy on the share.

RMAN Known Issues

Bug Number	SR Number	Description	Workaround
45854		<p>Incorrect pop-up failure message appears when attempting to configure an RMAN share replication to a target that does not support RMAN shares.</p> <p>Depending on the target configuration, the following error messages appear:</p> <p>"Source and Target Share Type's are not matching. Source share type is cifs and Target share type is nfs"</p> <p>"Source and Target Share Type's are not matching. Source share type is cifs and Target share type is cifs"</p>	<p>If this error message appears, you are attempting to replicate to a target that does not support RMAN shares. Replicate to a target that supports RMAN shares.</p>

Veeam Known Issues

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

Installation and Upgrade Known Issues

Bug Number	SR Number	Description	Workaround
36686		If the Software Upgrade Utility dialog box is open, and the session logs out due to inactivity, the Login window does not automatically display, and the Software Upgrade Utility remains open. Clicking the Check Now button results displays the following error: PollUpgradeJob not authenticated .	Close the Software Upgrade Utility , log back on to the system, and then access the Software Upgrade Utility . Clicking Check Now will now work as expected.

Miscellaneous Known Issues

Bug Number	SR Number	Description	Workaround
26610	1349564	Spectra Logic T120 and greater libraries cannot be discovered on the Configuration > PTT > Physical Device Discovery page.	Before attempting to discover the Spectra Logic, place the library into STK L700 emulation mode. Data partitions must be individually configured to use the Sun/StorageTek L700 emulation mode. Only data partitions configured to use the STK L700 emulation mode are recognized by the DXi.

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.
51084		Cannot download replication chargeback from classic DAR.	If the web browser supports Flash, use Flash based DAR.

Documentation

For the latest DXi4800 and DXi9000 using 4.0.3 software, see the following DXi Documentation Centers:

- **DXi4800 Documentation Center:** www.quantum.com/DXi4800Docs
- **DXi9000 Documentation Center:** www.quantum.com/DXi9000Docs

Supported Backup Applications

For the current list of backup applications supported for use with DXi 4.0.3 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.

i 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 4.0.3 Software, refer to the following sections.

- [Email Reports](#)
- [Configuring a Constant Replication Bandwidth Throttle](#)
- [System Metadata](#)
- [Date & Time Configuration](#)
- [Network Hostname Restrictions](#)
- [Internet Explorer Security Level](#)
- [Changing the Number of Allowed Sources](#)

- [Quantum Vision](#)
- [StorageCare Guardian](#)
- [Running Healthchecks](#)

Email Reports

Quantum recommends enabling **Email Reports** after upgrading to DXi 4.0.3 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 new **Software Upgrade Utility**. Quantum Support can use this information to provide a better support experience in the future.

To configure **Email Reports**:

1. Make sure a valid outgoing e-mail server is specified on the **Configuration > Notifications > Email > Server** page.
2. (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.

Configuring a Constant Replication Bandwidth Throttle

The **Configuration > Scheduler** page can be used to create a recurring series of replication throttle events. However, if you want a replication throttle bandwidth to always be in effect at all times, you need to configure a constant replication throttle bandwidth. To configure a constant replication throttle bandwidth, do not use the **Scheduler** page to schedule the throttle event. Instead, use the following CLI command:

```
syscli --add throttle --service REP --bw <bandwidth><K|M>
```

For example, to enforce a constant replication throttle of 32KB/s at all times:

```
syscli --add throttle --service REP --bw 32K
```

i Note: For more information about using CLI commands, see the *DXi-Series Command Line Interface (CLI) Guide*.

System Metadata

The **System Metadata** statistic appears in two locations in the DXi remote management console:

- On the **Home** page, under **Disk Usage > Show More**.
- On the **Status > Disk Usage** page, under **Used**.

The **System Metadata** statistic represents all internal usage of disk space on the DXi . This statistic is calculated using the following formula:

$$\text{System Metadata} = [\text{File System Used Space}] - [\text{Reclaimable Space}] - [\text{Blockpool Reduced Data Size}] - [\text{Non-Deduplicated Data Size}]$$

The following values are used in this formula:

- **File System Used Space** - All space used by all parts of the system. This includes temporary files (such as those used by replication, space reclamation, and healthchecks), as well as cached files that have not yet been truncated.
- **Reclaimable Space** - The disk space that can be used for new deduplicated data. The DXi will automatically compact reclaimable space to create more free space as needed.
- **Blockpool Reduced Data Size** - The amount of deduplicated data in the blockpool that has non-zero reference counts (that is, data that is not a candidate for space reclamation). During space reclamation, this value will decrease as reference counts are decremented.
- **Non-Deduplicated Data Size** - The size of data stored on shares that do not have data deduplication enabled. This value increases or decreases as data is added to or removed from these shares.

Because **System Metadata** is affected by many values and represents the internal operations of the system, you might not always be able to easily correlate changes in this statistic to your typical usage patterns.

Date & Time Configuration

The date and time settings are configured using either the **Getting Started Wizard** at installation or the **Configuration > System > Date & Time** page in the remote management console.

Although you may specify the date and time manually for your system, we highly recommend that you configure your system to use NTP (Network Time Protocol) to maintain accurate date and time settings.

If you have configured at least one DNS (Domain Name Server) IP address during network configuration, then you should select one of the Timeserver Pools. The Timeserver Pool most appropriate for your system will depend upon your geographical location. For example, if you are located in the United States we recommend you select **us.pool.ntp.org**.

If you have not configured your system to utilize at least one DNS IP address, then you cannot use a timeserver pool and must specify an NTP timeserver IP address, directly. The **Date & Time** page will provide a recommended default timeserver address of **208.66.174.71**; however, it is possible that the default timeserver may occasionally fail to respond to an NTP query. In this case you may receive an error message attempting to apply NTP settings using the default timeserver address. If you experience an issue with the default timeserver, we recommend that you try an alternate timeserver address (such as **192.43.244.18**) or select another timeserver address from the NTP support Web site at:

<http://support.ntp.org>

Network Hostname Restrictions

The network hostname must not exceed 64 characters.

Internet Explorer Security Level

The remote management console has been designed to function with Internet Explorer's default security level. If you happen to experience problems logging into the remote management console, then you can view/set your browser's security level by clicking on Internet Explorer's **Tools** menu, selecting the **Internet Options** menu item, and clicking on the **Security** tab in the new window that opens.

Changing the Number of Allowed Sources

The default number of allowed DXi replication sources is 10. If you need to change these default settings, contact Quantum Customer Support.

Quantum Vision

You must update to the latest version of Quantum Vision (4.4.1 or later) to operate with DXi 4.0.3 Software.

StorageCare Guardian

You must update to the latest version of StorageCare Guardian (2.0.7 or later) to operate with DXi 4.0.3 Software.

StorageCare Guardian - DXi9000

- To configure your DXi9000 into Guardian, contact Quantum Customer Support to install the *StorageCare Guardian Connectivity for the DXi9000* TSB.
- The Diagnostic Collect and Storage Collect capture log features will not work for DXi 4,x software without first applying the appropriate patch. Contact Quantum Customer Support and reference the *StorageCare Guardian Connectivity for the DXi9000* TSB.
- You will need to enable the CLI Administrator user and set the password to cliadmin. This will allow Guardian to capture the Diagnostic Collect and Storage Collect log logs.

Running Healthchecks

Quantum recommends running the **Healthcheck** utility (**Utilities > Diagnostics > Healthchecks**) daily to ensure data integrity.

DXi Advanced Reporting Additional Notes

Historical Stats Not Always Visible After Upgrade

Galaxy 2.0 Software changes the format of data presented by DXi Advanced Reporting. This format change makes concurrent viewing of DXi Advanced Reporting data collected before and after an upgrade to Galaxy 2.0 impossible. DXi Advanced Reporting will display data gathered before upgrade to Galaxy 2.0 ONLY when the timeframe covers dates before the DXi was upgraded to Galaxy 2.0 . If the timeframe includes dates after the upgrade to Galaxy 2.0 , then only the data collected after the upgrade is visible.

The historical data remains in the logging database. However, the data cannot always be displayed because of the way that the data was initially recorded. Since the older 1.x data and the newer 2.x data reside in different databases with different fields and limitations, such as Truncation start/end, some of these historical statistics do not display.

However, if you select a timeframe which is *entirely* before the 2.x upgrade (**END-Time < Upgrade-Time**), the system reverts to the old-style display. If you select a timeframe where the **END-Time > Upgrade-Time**, the display changes to the new style, eventually causing the left-hand porting of the graph, which refers to older times, to be blank.

Logging On to DXi Advanced Reporting

If you cannot access the DXi Advanced Reporting Login window, launch a supported Web browser on a workstation that has network access to the DXi system for which you want to view reports, and in the browser address box, type **http://<IP_address>/reports/index.html** where <IP_address> is the IP address of the system, and then press **Enter**.

Decrease in Before Reduction Data

Backup expiration by your backup application causes the Before Reduction data to decrease immediately in graphs like Data Volume Overview. In earlier versions of the software, backup expiration was not reflected in Before Reduction data until space reclamation was run. The effect of this change is an immediate drop in Before Reduction data any time you expire backups.

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:

<http://www.quantum.com/serviceandsupport/get-help/index.aspx#contact-support>