

# **Release Notes**

Product	DXi 2.1.1 Software for DXi-Series (DXi4000 Family, DXi6500 Family, DXi6700 Family, and DXi8500)
Supported Browsers (Remote Management Console)	Microsoft Internet Explorer 7.x or higher, Mozilla Firefox 7.x or higher
Date	February 2012

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## **Purpose of This Release**

DXi 2.1.1 Software brings a number of enhancements—first introduced on DXi8500 with the 2.1 software release—to the DXi4000, DXi6500, and DXi6700 families of disk based backup systems.

- Additional OpenStorage (OST) Improvements Enhancements include support for optimized synthetic full backups, and support for HP-UX 11i v3 IA-64 platforms (NetBackup only).
- Replication Throttling and Scheduler With replication throttling, you can
  configure the DXi to limit its outgoing data replication bandwidth to a
  specified maximum in order to avoid network contention. Use the new
  Scheduler page to set up a recurring schedule for replication throttle, and
  to manage schedules for space reclamation and healthchecks.
- AES 256-bit Encryption When sending replicated data to a target system, the DXi can take advantage of 256-bit encryption for stronger security.
- New CLI Functionality The command line interface (CLI) supports new and updated functionality for enabling symlinks and hard links on NAS shares, enabling SMB server signing for NAS shares, mapping OST IP addresses, scheduling replication throttling, and performing advanced configuration of network interfaces.
- Improved Space Reclamation Process The space reclamation process now better adjusts its use of system resources, consuming fewer resources during data ingest and performing space reclamation more quickly when more system resources are available.
- Increased Number of Virtual Tape Drives (VTDs) DXi8500 systems configured with 128 GB of RAM can support up to 512 VTDs (no more than 160 VTDs active at any one time). DXi6701 and DXi6702 systems can support up to 256 VTDs (no more than 80 VTDs active at any one time). To obtain a license for additional VTDs, contact your Quantum Sales Representative.

In addition, DXi 2.1.1 provides the following enhancements:

- Up to 320 TB Capacity for DXi8500 Capacity upgrades up to 320TB are now supported for DXi8500 base systems with 1TB drives in addition to base systems with 2TB drives. For base systems that use 1TB drives, expanding the capacity beyond 200TB requires a system node memory upgrade from 64GB to 128GB.
- Support for Software Upgrades DXi4000, DXi6500, DXi6700, and DXi8500 systems running software version 1.4.3 or later may be upgraded to DXi 2.1.1 Software. To upgrade to DXi 2.1.1 Software, contact Quantum Customer Support (see <u>Contacting Quantum</u> on page 30).
- Bug Fixes For more information, see Resolved Issues on page 8.

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# **Hardware Compatibility List**

The following table provides information about hardware compatibility with DXi 2.1.1 Software. This information is current as of the publication date of these release notes.

Component	Description
DXi4500 - 4510	<ul> <li>1 system</li> <li>1 RAID controller card</li> <li>4 x 1GbE ports</li> <li>2.2 TB usable capacity</li> </ul>
DXi4500 - 4520	<ul> <li>1 system</li> <li>1 RAID controller card</li> <li>4 x 1GbE ports</li> <li>4.4 TB usable capacity</li> </ul>
DXi4000 - 4601	<ul> <li>1 system</li> <li>1 RAID controller card</li> <li>4 x 1GbE ports</li> <li>4–12 TB nominal capacity (3.87–11.61 TB usable capacity)</li> </ul>
DXi6500 - 6510	<ul> <li>1 base node</li> <li>1 RAID controller card</li> <li>2 x 1GbE ports</li> <li>8 TB usable capacity</li> </ul>
DXi6500 - 6520	<ul> <li>1 base node</li> <li>2 RAID controller cards</li> <li>0 to 3 expansion modules (JBODs)</li> <li>6 x 1GbE ports</li> <li>8 TB to 32 TB usable capacity</li> </ul>
DXi6500 - 6530	<ul> <li>1 base node</li> <li>4 RAID controller cards</li> <li>2 to 9 expansion modules (JBODs)</li> <li>6 x 1GbE ports</li> <li>24 TB to 80 TB usable capacity</li> </ul>

Component	Description
DXi6500 - 6540	<ul> <li>1 base node</li> <li>4 RAID controller cards</li> <li>2 to 9 expansion modules (JBODs)</li> <li>6 x 1GbE ports</li> <li>2 x 8Gb Fibre Channel ports (for OST path to tape only, not ingest)</li> <li>24 TB to 80 TB usable capacity</li> </ul>
DXi6500 - 6550	<ul> <li>1 base node</li> <li>4 RAID controller cards</li> <li>2 to 9 expansion modules (JBODs)</li> <li>2 x 10GbE ports plus 2 x 1GbE ports</li> <li>2 x 8Gb Fibre Channel ports (for OST path to tape only, not ingest)</li> <li>24 TB to 80 TB usable capacity</li> </ul>
DXi6700 - 6700	<ul> <li>1 base node</li> <li>4 RAID controller cards</li> <li>2 to 6 expansion modules (JBODs)</li> <li>2 x 1GbE Ethernet ports</li> <li>4 x 8Gb Fibre Channel ports (VTL, PTT)</li> <li>24 TB to 56 TB usable capacity</li> </ul>
DXi6700 - 6701	<ul> <li>1 base node</li> <li>2 or 4 RAID controller cards</li> <li>0 to 9 expansion modules (JBODs)</li> <li>6 x 1GbE Ethernet ports</li> <li>4 x 8Gb Fibre Channel ports (VTL, PTT)</li> <li>8 TB to 80 TB usable capacity</li> </ul>

Component	Description	
DXi6700 - 6702	<ul> <li>1 base node</li> <li>2 or 4 RAID controller cards</li> <li>0 to 9 expansion modules (JBODs)</li> </ul>	
	<ul> <li>2 x 1GbE Ethernet ports</li> <li>2 x 10GbE Ethernet ports</li> <li>4 x 8Gb Fibre Channel ports (VTL, PTT)</li> <li>8 TB to 80 TB usable capacity</li> </ul>	
DXi8500	<ul> <li>1 System Node</li> <li>1 to 2 Metadata modules</li> <li>2 to 10 Array modules</li> <li>0 to 10 Expansion modules</li> <li>1 Fibre Channel switch</li> <li>1 Ethernet switch</li> <li>1 redundant power system (RPS) for the Ethernet switch</li> <li>20TB to 320TB usable capacity</li> </ul>	

## **OST Plug-In Support**

The following components are required for OST (OpenStorage) operation with the DXi-Series:

- Symantec Veritas NetBackup and Backup Exec 2010 (both available from Symantec).
- Quantum OST storage server (included with the Quantum DXi-Series software).
- Quantum OST Plug-in (downloaded separately through the remote management console or from the Quantum Service and Support Web site).

You must use the correct versions of all of these OST components. Refer to <u>Table 1</u>, <u>Table 2</u>, and <u>Table 3</u> for version compatibility information regarding the DXi-Series OST components. The tables include compatibility information for Windows, Linux, and Solaris operating systems. This information is current as of the publication date of these release notes.

For further information concerning the OST plug-in, see the *Quantum DXi-Series NetBackup OST Configuration Guide* or the *Quantum DXi-Series Backup Exec OST Configuration Guide*, located on the documentation CD.

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Table 1 Backup Exec 2010 (or later) Plug-in Compatibility List

Platform	Plug-in Version	DXi Software Version
Windows 2003/2008 32-bit	2.5.1	2.1.1
Windows 2003/2008 64-bit	2.5.1	2.1.1

Table 2 NetBackup 6.5.2 (or later) Plug-in Compatibility List

Platform	Plug-in Version	DXi Software Version
RedHat Linux x86 32-bit	2.5.1	2.1.1
RedHat Linux x86 64-bit*	2.5.1	2.1.1
SUSE Linux x86 32-bit	2.5.1	2.1.1
Solaris 10 and Solaris 11 x86 64-bit	2.5.1	2.1.1
Solaris 10 and Solaris 11 SPARC 32-bit	2.5.1	2.1.1
Solaris 10 and Solaris 11 SPARC 64-bit*	2.5.1	2.1.1
HP-UX 11i v3 IA-64	2.5.1	2.1.1
Windows 2003/2008 32-bit	2.5.1	2.1.1
Windows 2003/2008 64-bit	2.5.1	2.1.1

<sup>\*</sup> RedHat Linux x86 64-bit and Solaris SPARC 64-bit are supported, but you must use the 32-bit OST Plug-in on these platforms.

Table 3 NetBackup 7.x (or later) Plug-in Compatibility List

Platform	Plug-in Version	DXi Software Version
RedHat Linux x86 64-bit	2.5.1	2.1.1
SUSE Linux x86 64-bit	2.5.1	2.1.1
Solaris 10 and Solaris 11 x86 64-bit	2.5.1	2.1.1
Solaris 10 and Solaris 11 SPARC 64-bit	2.5.1	2.1.1
HP-UX 11i v3 IA-64	2.5.1	2.1.1
Windows 2003/2008 32-bit	2.5.1	2.1.1
Windows 2003/2008 64-bit	2.5.1	2.1.1

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## **Replication Compatibility**

The following DXi-Series systems are capable of sending replicated data to or receiving replicated data from a DXi running DXi 2.1.1 Software:

- DXi8500
  - Software Version: 1.4.x\_85, 2.1, 2.1.1
- DXi7500 Express and DXi7500 Enterprise
  - Software Versions: 1.2, 1.2.x, 1.4, 1.4.x, 1.5
- DXi6701 and DXi6702
  - Software Version: 2.0.1.1, 2.1.1
- DXi6700 (VTL Replication only for 1.4.x)
  - Software Version: 1.4.x, 2.0.1.1, 2.1.1
- DXi6500 Family (DXi6510, DXi6520, DXi6530, DXi6540, DXi6550) (NAS Replication Only)
  - Software Versions: 1.3\_65, 1.3.x\_65, 1.4, 1.4.x, 2.0, 2.0.0.x, 2.0.1.1,
     2.1.1
- DXi4000 Family (DXi4510, DXi4520, DXi4601) (NAS Replication Only)
  - Software Version: 1.3.1\_45, 1.4.x, 2.0, 2.0.0.x, 2.0.1.1, 2.0.2\_46, 2.0.2.1\_46, 2.1.1
- DXi2500-D (NAS Replication Only)
  - Software Version: 1.4.x, 1.5

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

**Note:** If data is replicated from a DXi running DXi 2.x Software to another DXi running 2.x, that data cannot be failed back to a DXi running system software 1.x. Perform a failback to a DXi running DXi 2.x Software.

**Replication Compatibility** 

## **Resolved Issues**

The following issues are resolved in DXi 2.1.1 Software.

Bug Number	SR Number	Description	
19782	1279970 1288274 1309174 1318854 1324968 1334540	A kernel panic occurs during I/O after the BFST store connection is modified from 64 down to 16.	
21859	1276522 1343290 1372308 1372630	Namespace replication jobs fail with the error Tag file for bundle already exists for file.	
24083	1353124	A create image operation succeeds on existing image.	
24336	1285598 1297304 1301782 1301890 1319548 1305744 1307908	RAS tickets generated for temporary low swap space.	
24603	1297520 1340452 1351764 1351772 1357496 1358992 1358994 1372802	A file parsing error after a Fibre Channel switch power supply outage sends a DXi8500 into diagnostic mode.	
24753	1301230	A cvfsck operation is very slow when scanning and repairing directories.	
25000	1313976 1309838 1314286 1313976 1316430 1320372 1349668	Multiple <b>telnet</b> sessions to <b>Qfcswitch</b> appear to be stuck in a loop, causing 100% CPU utilization.	
25199	1314742 1317468	The upgrade process does not check for incorrectly sized OST backup images, causing errors following upgrade.	

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Bug Number	SR Number	Description	
25988	1338084	For DXi6550 and DXi6702, the 10GbE Ethernet ports were incorrectly labeled in the GUI (for example, on the <b>Network</b> page) and in the product documentation. The GUI and documentation now correctly show port 4 on top and port 5 on bottom	
26155	1335534	Samba winbindd core occurs during calculate_data_len_tosend() operation.	
26301	1344668	Orphaned ddup.tags and ddup.journal files are not cleaned up from metadata.	
26367	1338606 1334662 1362208 1363292	PERC batteries do not charge correctly due to a firmware bug causing <b>Write Cache</b> to be disabled.	
26508	1349928	Blockpool assertion occurs when handling the too many open files error.	
26521		DXi Advanced Reporting may report incorrect statistics for the size of deduplicated data and the reduction ratio.	
26560		Optimized duplication fails when more than one network interface on the target system is enabled for replication traffic (that is, there are multiple replication IP addresses on the target).	
26568	1343982	The /var/log/DXi/service.log file is not rolled and compressed, consuming disk space.	
26672	1348384 1348694 1352530 1358822 1325992 1371464	Delays and timeouts are reported on <b>copyFileExtent()</b> during OST replication, leading to <b>ostd</b> cores.	
26685	1347460	A core occurs in smbd due to an assertion failure in take_file_lease().	
26701	1349928	Replication does not always repair BLOBs on the target.	
26753	A0589017	Installing the incorrect software version after saving the DXi configuration file results in diagnostic mode after fresh software installation.	
26773 26788		On the <b>Scheduler</b> page, when editing an event that repeats <b>Monthly</b> or <b>Yearly</b> , if a day is not specified, the following error occurs after clicking <b>Save</b> : Invalid entry, check all values and try again. Alternately, a Not a Number (NaN) error occurs.	
26841	1357476 1345854 1363400	Hosts are not presented for mapping in the GUI or GUI timeouts occur when there are more than 50 initiators.	
26904	1356818 1364438	When a problem occurs in <b>tw_cli</b> , a hardware failover is initiated instead of retrying.	

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Bug Number	SR Number	Description
26909	1358756	In some cases, corruption is not corrected when replicating the same BLOB, or a corrupted BLOB is created on the target if the blocklets are already corrupt on the target.
27000	1363308	Configuring a bond IP address through the GUI results in error *Reserved for broadcast messages to the current network*.
27040	1360516	The tag store directory allocator queue may become malformed on startup.
27058	1363580	Replication throttle start times can be specified down to the second rather than minute.
27157	1366328	Adding an OST storage server results in error RDSM has encountered an issue with STS where the server was not found: getDiskVolumeInfoList.

DXi 2.1.1 Software has the following known issues:

- Replication Known Issues on page 11
- Space Reclamation Known Issues on page 13
- Network Known Issues on page 14
- <u>CLI Known Issues</u> on page 15
- **GUI Known Issues** on page 15
- <u>VTL Known Issues</u> on page 18
- OST Known Issues on page 19
- Installation and Upgrade Known Issues on page 21
- Miscellaneous Known Issues on page 23
- Cosmetic Issues on page 25

### Replication Known Issues

Bug Number	SR Number	Description	Workaround
7269		Replicating a filename which begins with & in a directory caused all of the files in the entire directory to replicate to the target.	Do NOT use the & character in a filename.
7915		Aborting a synchronization job when a namespace and synchronize are queued up aborts only the synchronization and leaves the namespace replication in a queued state.	Manually abort the namespace replication.
11683		If the same user exists on both source and target systems, the user should be prompted to overwrite permissions on the target system before synchronization or Directory/File Based replication occurs.	Set the same permissions on both source and target for the same user.
13617		If the replication target is changed while a namespace replication on a NAS share or VTL is in progress (such as due to a power outage), the replication may become stuck or stay queued up.	Cancel the queued job and restart the replication or wait until the next scheduled replication to take effect.
13692		No Service alert is logged for failback jobs when the failure is due to a power outage.	Re-initiate the failback after system resumes operation.
14974	1132956	A Target system will fail a failback operation if the replication target IP (source role) is not configured.	Use an IP address on the Target system to specify the network address of the Source system.
18326		If Directory/File Based Replication is enabled for a share and then disabled at a later time, a replication report will not show any of the replication activity that occurred during the time that Directory/File Based Replication was enabled.	Re-enable Directory/File Based Replication for the share, then run the replication report again to see the historical replication activity.
18787		A manual or scheduled replication initiated immediately after changing the replication target may fail.	Perform the replication again.
18845		An error occurs if the same DXi is configured to be a source as well as the target for replication.	Do not include the configured target DXi in the list of source DXis.

Bug Number	SR Number	Description	Workaround
20351		If data is replicated from a DXi running DXi 2.x Software to another DXi running 2.x, that data cannot be failed back to a DXi running system software 1.x.	Perform a failback to a DXi running DXi 2.x Software.
20674		An error is returned when attempting to delete a replication source if the source was added with an invalid (cannot be resolved) host name.	Pause replication before deleting a source with an invalid host name.
21612		When recovering or failing back an NFS share, the value of the <b>Commit</b> attribute ( <b>sync</b> or <b>async</b> ) is not preserved.	Manually reset the <b>Commit</b> attribute for the share after it is recovered on the target, or fail back the share to the source.
24005		A missing file error occurs during replication or space reclamation. This can occur if files were deleted while replication or space reclamation was in progress.	Retry the replication or space reclamation. To avoid this issue, do not delete files while performing replication or space reclamation.
24277		If several synchronization jobs are queued, and then while the first job is in progress the other jobs are canceled, the DXi will begin synchronizing the canceled jobs after finishing the first job in the queue.	Cancel the synchronization jobs again.
23228		When attempting to recover or synchronize a VTL partition, a capacity mismatch error occurs if the target DXi does not support the library emulation and drive type used by the original partition.	When creating the source partition, make sure to use a library emulation and drive type supported by the target.
24731		If the configured replication target does not support VTL, enabling replication at the time of partition creation results in an error, and the partition is not created. If you then attempt to create the same partition again, with the same name and replication enabled, the DXi will become unresponsive and must be rebooted.	If the configured replication target does not support VTL, do not enable replication at the time of partition creation.

Bug Number	SR Number	Description	Workaround
24896		An NFS share can perform Directory/File Based (trigger based) synchronization to a CIFS share with the same Sync ID. This should not be allowed due to the protocol mismatch.	When configuring source and target shares for Directory/File Based (trigger based) replication, make sure both the source and target shares use the same protocol (NFS or CIFS).
26167		When performing a failback from a DXi running 2.1 or 2.1.x software to a DXi running software version 2.0.x or earlier, the failback fails if a valid source IP address has not been specified on the DXi running 2.1 or 2.1.x software.	On the DXi running 2.1 or 2.1.x software, specify a valid Source IP Address on the Configuration > Replication > Send page.

### Space Reclamation Known Issues

Bug Number	SR Number	Description	Workaround
20826		After upgrading the system software, the <b>Space Reclaimed</b> statistics are incorrect on the <b>Space Reclamation</b> > <b>General</b> page.	The statistics will be correct after space reclamation is run.
27205		Space reclamation remains at Stage 2 and does not complete even after a long period of time elapses.	Space reclamation cannot complete while directories are continually being renamed on NAS shares or while VTL cartridges are continually being mounted and unmounted. Suspend directory rename and mount/unmount activities until space reclamation completes.

#### **Network Known Issues**

Bug Number	SR Number	Description	Workaround
8628		A replication IP address should not be required to configure the network if the user does not use replication.	Enter a "dummy" IP address. This will be fixed in a future revision.
20448		If a <b>Domain Suffix Search List</b> has not been specified on the <b>Network</b> page, and the DXi is added to an Active Directory server, the DXi is added to the domain with the suffix <b>localdomain</b> . After this, the DXi cannot be managed using Active Directory.	Specify the correct domain suffix in the <b>Domain Suffix Search List</b> before adding the DXi to an Active Directory server. (If adding multiple entries to the list, make sure the correct path is first in the list.)
20572		When using Active Directory, the DXi is not automatically added to the DNS server in the parent domain after the DXi is added to a child domain.	Cross domain joining is not supported by Samba. Instead, manually add a DNS entry to the DNS server.
20574		Unable to manage DXi Local Users and Groups from the Active Directory controller after the DXi is added to a child domain.	Log off of the Active Directory controller, then log back on. Users and groups will be listed correctly.
21603		If the DXi is assigned an IP address in the 10.17.21.0 to 10.17.21.24 range, a network connection to the DXi cannot be established.	The IP addresses in this range are reserved. Configure the DXi using a different IP address.
23808		A CIFS share cannot be mapped when using Windows 2008 R2 SP1 with the <b>RequireSecuritySignature</b> registry key set to 1.	Edit the Windows 2008 registry and set the following key to 0:  HKEY_LOCAL_MACHINE\SYSTEM\Curren tControlSet\Services\LanmanWorks tation\Parameters\RequireSecurit ySignature

### **CLI Known Issues**

Bug Number	SR Number	Description	Workaround
13604		Enabling jumbo frames disrupts active network configurations.	Don't change the setting if I/O is running.
14032		By default the "syscligetstatus jumbo" command displays only bonded network devices' jumbo frame status. If some network devices are not bonded (segmented) the "syscli -getstatus jumbo" will not display jumbo frame status for those devices when using the command without any option specified.  Note: Thegetstatus jumbo command has been deprecated.	To display all the network devices' jumbo frame status, use the "all' option in the command (i.e. syscli –getstatus jumboall"). To display a single network device jumbo frame status, specify the network device using the "dev" option in the command. For example, "syscli – getstatus jumbodev eth0" command displays ETH0 device jumbo status.
27534		When adding or deleting a replication throttle schedule using the CLI, various INFO and ERROR messages may display before the command completes successfully.	If the message Command completed successfully displays, then the throttle schedule was correctly added or deleted, and the INFO and ERROR messages can be ignored.

### **GUI Known Issues**

Bug Number	SR Number	Description	Workaround
7874		Alert > Service Tickets > View Recommended Actions - Quantum Support link hyperlink missing.	Manually copy and paste the hyperlink into your browser to access the Quantum Support web page.
7935		When selecting all share administrators including default domain administrator for deleting, the GUI should display an error indicating that it can not delete the default domain administrator.	The default domain administrator can NOT be deleted.
11790 11792 11954		Usernames beginning with "#" or "\$" characters, or OST LSU names beginning with the "_" character are not displayed correctly.	Do not use these characters to begin usernames or OST LSU names

Bug Number	SR Number	Description	Workaround
15310		When the system is running a backup and a partition is created with > than 5000 cartridges, the GUI displays:	This is normal operation. Wait until the GUI becomes responsive. Do NOT reboot the system.
		PLEASE WAIT	
		The system is either busy with a previous request or in the process of restarting the web-based interface.	
17436		Bold text is not visible in FireFox.	This will be fixed in a future release.
19289		When a Fully Qualified Domain Name (FQDN) is used as an NDMP host name, the NetBackup media server reads data from the DXi to a media server host and then writes the data to a tape connected to the DXi. This results in slow OST path-to-tape (PTT) performance.	Do not use a Fully Qualified Domain Name (FQDN) as an NDMP host name. In this case, the NDMP server on the DXi reads the data from disk and writes it directly to a tape connected to the DXi instead of reading it to a media server. This results in faster OST PTT performance.
20673		On the Email Home > On Demand page, after viewing and saving a configuration data report, the OK button is disabled.	Refresh the Web browser to return enable the <b>OK</b> button.
21019		Immediately after a fresh software install, the disk capacity statistics displayed in the remote management console are incorrect.	Wait a few minutes for the disk capacity statistics to be updated.
21558		On the <b>Network</b> page in the remote management console, if the <b>Advanced</b> option is selected and IP information is entered, but no bonding option is selected, an error does not occur if <b>Apply</b> is subsequently clicked. Instead, the DXi reboots, and basic network settings are applied.	Specify advanced network settings again on the <b>Network</b> page, and make sure to select a bonding option before clicking <b>Apply</b> .
22417		When adding an SNMP community, the following error displays: The IP Address/Network Mask pair does not imply a valid network address. This error occurs even though the pair is in fact valid.	Leave the <b>Network Mask</b> field blank when creating the community.
23165		When deleting host access groups on the <b>Host Mapping</b> page, the job status indicator does not complete.	The host access groups were successfully deleted. To clear the job status indicator, navigate to another page in the remote management console, then navigate back.

Bug Number	SR Number	Description	Workaround
24567		In the OST Wizard, on Step 3: Add LSUs, if you sort the list of LSUs by name, and then select one or more LSUs, the Delete button remains disabled.	Click <b>Previous</b> to return to the previous step, then click <b>Next</b> to return to Step 3. Select the LSUs to delete, and click <b>Delete</b> .
24644		On the Utilities > Diagnostics > System Diag File page, after clicking Generate New to create a new system diagnostics file, the message No file has been generated appears, and the Download Current button remains disabled.	Check the Admin Alerts page to see if an admin alert was generated. If the /scratch file system is out of space, the system cannot create a new diagnostics file, and an admin alert is generated.
26174		On the Configuration > VTL > Media > Actions, when Show All Media is selected in the Action drop-down box, an Unresponsive Script error dialog box may display if there is a very large number of media.	Keep clicking <b>Continue</b> on the error dialog box until the media displays. To avoid this error, view media for a particular partition, or apply a barcode filter.
26245		On the Configuration > Scheduler page, the horizontal scroll bar does not allow you to scroll to the right to see the entire view.	Navigate to a different page in the remote management console, and then navigate back to the <b>Scheduler</b> page.
26021		Web browser save password features (and similar third party browser add-ons) are not able to store and recall the DXi password when logging on.	To maintain proper security, enter the password manually each time you log on to the DXi.
26767		Using the <b>Scheduler</b> page or the CLI, if a replication throttle event is deleted after it has started but before it has ended, then replication throttling mode will continue and will not stop.	To manually stop a replication throttle event, use the following CLI command: sysclidel throttleservice REP  Alternately, on the Scheduler page, create a new event with a start time just after the current system time, a new throttle bandwidth, and a 15 minute duration. The old throttling bandwidth is replaced with the new throttling bandwidth. When the end of the new event is reached, throttling is stopped.
27206		When generating a storage array diagnostics file, the operation does not appear to complete even after a long period of time elapses.	Press F5 to refresh the page. Or navigate to another page, and then navigate back to the Utilities > Diagnostics > Storage Array Diag File page.

Bug Number	SR Number	Description	Workaround
27343		On the Configuration > Scheduler page, if you attempt to edit an instance of a recurring event that has already started, the edit dialog box is grayed out as expected. However, if you then try to edit a future instance, the edit dialog box incorrectly remains grayed out.	Press <b>F5</b> to refresh the page.
27346		On the Configuration > Scheduler page, attempting to modify a future instance of a recurring event that uses the until option to define its end may fail with the error Invalid entry, please check all values and try again.  Note: This issue occurs only if the recurring event was created on a DXi8500 running 2.1, and the DXi was subsequently upgraded to 2.1.1.	<ul> <li>To resolve the issue, do one of the following:</li> <li>Edit the entire recurring series rather than a single event. After saving the changes to the series, you should then be able to edit a single instance.</li> <li>Delete the recurring series, and then add it again.</li> </ul>

### **VTL Known Issues**

Bug Number	SR Number	Description	Workaround
21688		The following error occurs when editing a partition to reduce the number of storage slots:  Error: setting number of slots: 150. Error:-1	To remove slots, the slots at the end of the range of slots must be empty. Export cartridges from the highest numbered slots, and then edit the partition again.
22019		Media can be recycled (erased) on the Media Actions page even if it is write protected (WP).	The WP status is respected by the host but not the DXi. Do not recycle media that has data.
27751		The DXi6700 and DXi8500 online help and <i>User's Guides</i> incorrectly state that an underscore ( _ ) must not be used in the name of a VTL partition.	Underscores ( _ ) are allowed in the names of VTL partitions.

### **OST Known Issues**

Bug Number	SR Number	Description	Workaround
10041	1423609 1066048 1236048	Subsequent Optimized Duplication jobs may fail or become stuck when running jobs are canceled or stopped.	Restart the NetBackup services.
13795	1913763	Unable to delete undiscovered OST devices from Backup Exec 2010.	Reestablish connection from the Backup Exec OST device and the DXi system. The connection can be reestablished by restarting Backup Exec services or rebooting the DXi system. Once the connection is established, the device will be discovered, and the you will be able to delete it.  Alternately, upgrade to Backup Exec 2010 R2, which contains a fix for this bug.
15286		New OpenStorage Devices added to Backup Exec 2010 initially show as "Undiscovered".	Press Refresh in the Backup Exec View pull-down menu until the device show as discovered.
15322		Optimized Duplication Succeeds, but the following error is shown:  V-79-8192-4881 - The count of Files and Directories processed is not available for this operation. The File and Directory count might be displayed as zero.	This is expected behavior. You are able to restore using the duplicated image with no issues.
20587		On a NetBackup media server, temporary files created during backups are not removed.	This issue is resolved. To remove any temporary files that were created by previous versions, delete all files in the / tmp/dm/shadow directory on the NetBackup media server.
21267		A storage server cannot be deleted even when it contains no LSUs and there are no active connections.	Disregard the empty storage server. Note that you cannot use the same name for the storage server, and that the empty storage server counts toward the 100 storage servers limit.
23109		(DXi6700 only) There is a small chance of observing a discrepancy in the aggregate statistics for DXi Accent and the statistics for individual media servers.	Navigate to another page in the remote management console, then navigate back.

Bug Number	SR Number	Description	Workaround
23253		If a storage server is configured to use multiple LSUs, and if LSU spanning is configured, when one LSU gets full and NetBackup is handling a disk full condition, the following errors are logged in OST Plug-in log:  ERROR - 20110526 14:53:50 11818 /pgnimage.cpp:2500 Write to image failed. dm_error: - 812, STS Error: 2060031  ERROR - 20110526 14:53:50 11818 /pgnimage.cpp:2584 EXIT pgn_write_image: (out of space:2060031) ih=0x13c1ed00, bytesWritten=0  OR  ERROR - 20110414 23:27:36 20648 /pgnbfst.cpp:1153 Received error(2060031) from server, OST_RESERVE_LSUSPACE for 262144 bytes failed	If the NetBackup spanning worked as expected, and if the job completed successfully, these errors may be ignored.
24628 26580		When DXi Accent is enabled, a maximum number of jobs (backups, restores, and/ or optimized duplications) can be run against the DXi. The maximum is 10 total jobs for DXi4500 and DXi6510 and 20 total jobs for all other DXi models.  When the limit is reached, the following error is logged to the OST Plug-in log:  VServer "hybrid-dedupe-no-encrypt" limit reached (limit 20).  Also, the following error is logged in the NetBackup progress log:  Critical bpdm (pid=12515) image open failed: error 2060020: storage server connection limit exceeded	If the connection limit is reached on the DXi, the OST Plug-in retries for 300 seconds by default. If the connection cannot be established within 300 seconds, the connection times out and an error is returned.  The default connection timeout is 300 seconds. The timeout value can be increased using the following setting in /usr/Quantum/QuantumPlugin.conf.  DATA_CONNECTION_BUSY_TIMEOUT

Bug Number	SR Number	Description	Workaround
26627		When attempting to perform an optimized synthetic full backup using NetBackup running on a Windows-based media server, a normal synthetic full backup occurs instead. During a normal synthetic full backup, all data is read back to the media server, resulting in a longer backup window.  Note: This issue usually occurs with existing storage servers and disk pools.	Make sure the storage server and disk pools are correctly configured for optimized synthetic full backups. To do this, run the following commands on the media server:  nbdevconfig -changests -stype Quantum -storage_server <ss_name> -setattribute  nbdevconfig -changedp -stype Quantum -dp <dp_name> - setattribute OptimizedImage  To verify the configuration, run the following commands and make sure they return the flag OptimizedImage:  nbdevquery -liststs -U  nbdevquery -liststs -U  For more information, see the following Symantec online support article: <a href="http://www.symantec.com/business/support/index?page=content&amp;id=TECH77767">http://www.symantec.com/business/support/index?page=content&amp;id=TECH77767</a></dp_name></ss_name>
26147		When using OST with a media server configured with RedHat Linux and a Chelsio 10GbE card, restore operations take significantly longer to complete than backup operations.	Use the perftune.sh and ifup-local scripts (provided by Chelsio) to correctly set kernel parameters on the media server. To do this, you must copy the perftune.sh and ifup-local scripts to /sbin on the media server. For more information, refer to the Chelsio driver installation instructions (in the ReadMe file included with the driver).

### Installation and Upgrade Known Issues

Bug Number	SR Number	Description	Workaround
13711		If a power cycle occurs while uploading the software image, the system displays only an "Activation Error Occurred!" message.	Do not power cycle in middle of an upgrade. Begin the upgrade again.
13366		The system goes into diagnostic mode if a SAS cable is pulled during storage expansion upgrade.	Don't pull cables during storage capacity upgrade.

Bug Number	SR Number	Description	Workaround
15362		During installation, warnings appear that the Inode Expand Min, Inode Expand Max, and Inode Expand Inc configuration variables are deprecated.	These warnings do not affect installation and can be ignored.
21270		When upgrading to DXi 2.0 Software, the 1.4.x diagnostic files are deleted.	Before upgrading to 2.0, save copies of the 1.4.x collect logs to a location that is not on the DXi.
24366	1293264	(DXi4500 only) When upgrading to 2.x Software, the following service ticket is generated: fs 'vol0':FSS on host 127.0.0.1 not currently accessible	This is expected behavior during a successful upgrade. You may safely close the service ticket.
24372		After upgrading from 1.4.x to 2.0.x, the following error appears in the upgrade1to2.out log.  *** Speedy VMC_MEDIA_TYPE_GENERIC table upload  *** Error of appending row 9  Loarel: (903) duplicate value for primary or unique key  Loarel: system error: 0  Loarel: (903) duplicate value for primary or unique key in adding row number 1	You may safely disregard this error. The upgrade completed successfully.
26455	1329228	A custom setting for MI thread count in the /etc/init.d/ost file is lost when upgrading and is reset to the default value (20 threads).	Prior to upgrading, note the value for MI threads in the /etc/init.d/ost file, and then reset the value following the upgrade.  Note: In general, in DXi 2.1.x Software, it is no longer necessary to alter the MI thread setting to optimize performance.
27780		On DXi6500 and DXi6700, when upgrading from 1.4.x to 2.1.1, the upgrade process does not complete. The following error is logged to the console and the /var/log/DXi/upgrade1to2.log file: ERROR 1 in upgrade1to2(1787): UpgradeQbfs failed!  Also, an error displays in the upgrade GUI, or the progress bar in the upgrade GUI stops progressing.	Based on the data makeup of the DXi6500 and DXi6700 series, occasionally an upgrade may need to be restarted to complete successfully.  For complete instructions for identifying the issue and restarting the upgrade, see the section "Restarting the Upgrade on DXi6500 and DXi6700" in the DXi 2.1.1 Software Installation and Upgrade Guide (6-67321-02 Rev B).

# Miscellaneous Known Issues

Bug Number	SR Number	Description	Workaround
12454		If a single file is replicated using the Command Line Interface (CLI), the ACL for that file will be lost.	Use Synchronize option from the GUI. See the <i>DXi-Series User's Guide</i> for further information.
12523		Occasionally, the NTP server cannot be contacted, resulting in the following admin alert: WARNING: Unable to access NTP server/pool.	Check the NTP settings on the  Configuration > System > Date &  Time page and change if necessary.  Before a valid NTP Server can be configured by hostname or selected from an NTP Server Pool on the  Configuration > System > Date & Time page, a Primary DNS server must be configured on the Configuration > System > Network page.  When updating the NTP settings through the Getting Started Wizard, configure the Primary DNS Server in the Network step prior to configuring the NTP server in the Date & Time step.
13621		NTP server error and Admin Alert are produced after changing from NTP 24-hr to 12-hr NTP format.	Verify time format has changed. If the time format has changed, ignore the alert.
15848		Backups jobs running to a DXi6550 with the optical option via a Dell 8024f switch may not complete or will complete with very slow performance.	Change the Dell 8024f settings from RSTP to Classic STP. Refer to the Dell switch documentation for more information.
17553		Long backups on a NetBackup client running on Windows 2003 can fail due to insufficient system resources.	Edit the registry settings on the client as described in the following Microsoft knowledge base article: <a href="http://support.microsoft.com/kb/304101/en-us">http://support.microsoft.com/kb/304101/en-us</a>
18370 19091 27478		Errors are received after a DSET log is generated on the <b>Utilities</b> > <b>DSET</b> page. After retrieving a DSET log, the system status can also briefly show the system board as "failed".	You may ignore these error messages, and download the DSET log as usual.
19332		NFS recovery jobs performed with a supported backup application fail to complete.	Make sure the backup client system has a minimum of 8 GB of RAM.

Bug Number	SR Number	Description	Workaround
19935		Attempting to delete a share while performing I/O on the share (for example, copying files to the share) results in an error. After this error occurs, the share cannot be deleted, and replication cannot be performed to the share.	Wait for I/O on a share to complete prior to deleting a share.
19936		A file/directory path with more than 244 characters cannot be accessed on a mapped NAS share.	Limit file/directory paths on a mapped NAS share to 244 characters or less.
20336		When FC port 9 is pulled or down, a correct RAS ticket is generated, but Admin Alerts incorrectly reports that the wrong HBA FC port numbers (FC0, FC1, FC2, FC3, FC4, and FC5) are down.	Although the FC port numbering is incorrect, the Admin Alert is a valid alert indicating that a customer-facing FC link is down. This alert will be fixed in a future release.
20707		If one of the processes in the DataPath cores, this can cause other processes in the DataPath to core as well. Process cores will results in RAS alerts. DataPath consists of the following processes: bpwd, bpwapid, qfsd, ost, ndmp, nas_control, nfslock, smb, nfs	If a core occurs, only the first core requires investigation, as it is the root cause. The subsequent cores are expected and can be disregarded.
21407		Empty files and directories can still be created on NFS shares when the DXi is in a low space condition.	Do not attempt to write files and directories to NFS shares on the DXi when it is in a low space condition. Run space reclamation to free up disk space before writing additional files.
23218		When mounting NFS shares on Solaris clients using the noac option, performance is degraded.	Do not use the noac option when mounting shares, or use a non-Solaris client.
23372		After a reboot, the DXi comes up in diagnostic mode, and attempting to retrieve a collect log does not proceed past the step Collecting -FC scst	Reboot the DXi again using the remote management console or the CLI.
24495		The online help content for the Utilities > Diagnostics > Healthchecks > General page does not include Contact Support in the list of possible healthcheck statuses.	If running a healthcheck results in the <b>Contact Support</b> status, contact Quantum Customer Support.

Bug Number	SR Number	Description	Workaround
26044		If a mounted NFS share containing a large number of files is deleted, and then a new share with the exact same name is immediately created and mounted by clients, then files written to the new share may be lost.	Do not immediately recreate an NFS share after deletion. Instead, wait for the deletion to properly complete, or give the new share a unique name.
26066		When using Quantum Vision to view status and reporting data for a DXi, data is not collected from the DXi at the frequency specified in Vision.	Upgrade to Quantum Vision 4.1 or later.
26248		When a good drive is removed from a storage array, the resulting service ticket incorrectly states that the drive has failed.	Drive status is correctly report on the Status > Hardware > Details > Storage Arrays page.
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.

### **Cosmetic Issues**

Bug Number	SR Number	Description	Workaround
11800		Although all NAS shares are deleted, if there is at least 1 OST share, the target will still have value and display grayed out.	This issue can be ignored and does not impact functionality.
11803		On the Ethernet performance page, the "average" drop-down menu reflects "all" ports and not just the "active" ports.	When viewing the Ethernet performance "average," be aware that the calculation is affected by potentially inactive ports, including one of the service ports.
12092		Service Ticket: Recommended Actions: Contains information on barcode/ cartridge when a NAS share fails.	This issue can be ignored and does not impact functionality. This will be fixed in a future release.

Bug Number	SR Number	Description	Workaround
20505		If you have used the Configuration Wizards to configure the system, after the DXi reboots, the green check marks on the <b>Wizards</b> menu that indicate a wizard was completed no longer display.	This is cosmetic only. All settings made using the Configuration Wizards are retained after a reboot.
21497		The first time an NFS share is modified after a CIFS share is modified, a message appears incorrectly stating that the CIFS service was started successful.	Click <b>OK</b> to dismiss the message.

## **Documentation**

The following documents are currently available for the DXi-Series:

Document Number	Document Title
6-67093	DXi4500 Site Planning Guide
6-67084	DXi6500 Site Planning Guide
6-67200	DXi6700 Site Planning Guide
6-67206	DXi8500 Site Planning Guide
6-67128	DXi4500 User Essentials
6-67120	DXi6500 User Essentials
6-67193	DXi6700 User Essentials
6-67107	DXi8500 User Essentials
6-67092	DXi4500 User's Guide
6-67083	DXi6500 User's Guide
6-67199	DXi6700 User's Guide
6-67205	DXi8500 User's Guide
6-67094	DXi4500 Installation and Configuration Guide
6-67085 6-67086 6-67087 6-67088 6-67089	<ul> <li>DXi6500 Installation and Configuration Guides</li> <li>Model 6510</li> <li>Model 6520</li> <li>Model 6530</li> <li>Model 6540</li> <li>Model 6550</li> </ul>

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Document Number	Document Title
6-67201 6-67196	DXi6700 Installation and Configuration Guides • Model 6700 • Model 6701 and Model 6702
6-67090	DXi6500 and DXi6700 Expansion Module Upgrade Instructions
6-67203 6-67204	DXi8500 Unpacking and Installation Guides • Pre-Racked Configurations • Un-Racked Configurations
6-67036	DXi8500 Array and Expansion Module Upgrade Instructions
6-67079	DXi-Series Symantec NetBackup OST Configuration Guide
6-67080	DXi-Series Symantec Backup Exec OST Configuration Guide
6-67081	DXi-Series Command Line Interface (CLI) Guide
6-67082	DXi-Series SNMP Reference Guide

# **Supported Backup Applications**

The following backup applications are supported for use with DXi 2.1.1 Software:

Backup Application	Revision
Symantec NetBackup	6.0 and later
Symantec Backup Exec	12.5 and later
EMC NetWorker	7.4 and later
CommVault Simpana	7.0 and later
CA ARCserve	12.5 and later
Oracle Secure Backup	10.2 and later
IBM Tivoli Storage Manager	5.5.4 and later
HP Data Protector	6.0 and later
Quest NetVault	8.x and later
Atempo Time Navigator	4.2 and later

Backup Application	Revision
Syncsort Backup Express	3.1.x and later

**Note:** Contact the backup application vendor for the latest software revision information.

### **Additional Notes**

#### 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

**Note:** For more information about using CLI commands, see the *DXi-Series Command Line Interface (CLI) Guide* (6-67081).

#### **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:

System Metadata = [ File System Used Space ] - [ Blockpool Reduced Data Size ] - [ 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.
- **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 first increase as reference counts are decremented, and then decrease as data with zero reference counts is removed from the blockpool.

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• 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 DXi, you might not always be able to easily correlate changes in this statistic to your typical usage patterns.

Because of the way it is calculated, the system metadata statistic can be affected by space reclamation activity. During space reclamation, the file system used space value includes un-referenced data that will not be freed up until compaction is complete. Because of this, the value for system metadata may appear larger during space reclamation.

# 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: <a href="http://support.ntp.org">http://support.ntp.org</a>

#### Network Hostname Restrictions

The network hostnames 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.

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# 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.

#### **Space Reclamation**

The **Space Reclaimed** value displayed on the **Space Reclamation** > **General** tab displays the amount of physical disk space that will be reclaimed as a result of deleting deduplicated data. However, the actual amount of physical disk space may be less than the value indicated because of fixed overhead of the deduplication module. Since the disk space usage in the system is also dynamic, other activities in the system may impact the accuracy of the **Space Reclaimed** value.

#### **Quantum Vision**

You must update to the latest version of Quantum Vision (4.0.4 or later) to operate with DXi 2.1.1 Software.

#### StorageCare Guardian

You must update to the latest version of StorageCare Guardian (2.0.5 or later) to operate with DXi 2.1.1 Software.

#### **OST NetBackup Version**

You must use NetBackup version 6.5.3 or higher to resolve the following known issue in older versions of NetBackup:

• Subsequent Optimized Duplication jobs may fail or become stuck when running jobs are canceled or stopped.

#### **Running Healthchecks**

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

## **Contacting Quantum**

More information about this product is available on the Service and Support website at <a href="https://www.quantum.com/support">www.quantum.com/support</a>. The Service and Support Website contains a collection of information, including answers to frequently asked questions (FAQs).

For further assistance, or if training is desired, contact Quantum:

United States	800-284-5101 (toll free) 949-725-2100
EMEA	00800-4-782-6886 (toll free) +49 6131 3241 1164

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APAC	+800 7826 8887 (toll free) +603 7953 3010
For additional contact information:	www.quantum.com/support
To open a Service Request:	www.quantum.com/osr

For the most updated information on Quantum Global Services, please visit: <a href="https://www.quantum.com/support">www.quantum.com/support</a>

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