

Dell EMC PowerStore Release Notes

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Revision History

Document revision	Date	Comments
A00	February 2021	Original release version 1.0.4.0.5.003

Product Description

The ground-breaking Dell EMC PowerStore achieves new levels of operational simplicity and agility, utilizing a container-based architecture, advanced storage technologies, and intelligent automation to unlock the power of your data. Based on a scale-out architecture and hardware-accelerated advanced data reduction, PowerStore is designed to deliver enhanced resource utilization and performance that keeps pace with application and system growth. Utilizing the proven capabilities of VMware ESXi, PowerStore X models with AppsON provide the unique ability to host data-intensive and storage applications directly on the PowerStore system with a storage-based virtualization environment, with the flexibility of seamless movement of applications between the storage system and external VMware servers. PowerStore T models provide organizations with all the benefits of an enterprise unified storage platform for block, file and vVol data, while enabling flexible growth with the intelligent scale-up AND scale-out capability of appliance clusters.

Highlighted features include:

- **Brand new built from scratch all NVMe Platform:**
 - All NVMe
 - Active-Active architecture
 - Container based PowerStore OS
 - Block, File, and vVols
 - NVMe Flash and Storage Class Memory (SCM) media support
 - 25 Gbe iSCSI and 32Gb FC support
 - Compact 2U starting form factor
 - Enterprise Data Services & Leading Data Reduction:
 - Inline dedupe and compression
 - Native async replication
 - Snapshots and space efficient thin clones
- **Enterprise Data Services & Data Reduction:**
 - Inline dedupe and compression
 - Native async replication
 - Snapshots and space efficient thin clones
 - Advanced drive failure protection and sparing technology
- **Simple and intelligent Management & Serviceability:**
 - Embedded management
 - Built in AI for simple, autonomous storage administration and proactive health analytics
 - CloudIQ
 - VM Visibility
 - New Anytime Upgrade Program
 - Integration with automation framework
- **Flexible & Granular Scalability:**
 - Scale Up in single drive increments, up to 2.8 PBe per appliance
 - Scale Out to 4 appliances, up to 11.3 PBe per cluster
 - Scale Down
- **VMware:**
 - VMware vVols 2.0/VASA 3.0 support
 - New AppsOn hypervisor-based deployment, allowing to run Virtual Machines on the same appliance as storage without the need for an external server

PowerStore deployment models and configurations

Deployment Model	Model numbers	Support Configurations
PowerStore T	1000T 3000T 5000T 7000T 9000T	<p>Storage-centric deployments.</p> <p>Both block (storage area networks (SAN)) and file (network attached storage (NAS)) services are supported with PowerStore T deployments.</p> <p>Note: Hypervisor deployments are not supported on this model.</p>
PowerStore X	1000X 3000X 5000X 7000X 9000X	<p>Application and storage-centric deployments.</p> <p>Block (SAN-only) storage services with a hypervisor layer installed on the system. The system software is deployed on the hypervisor, which enables deployment of virtual machines (VMs) and customer applications within the hardware.</p> <p>Note: File (network attached storage (NAS)) services are not supported on this model.</p>

Refer to the PowerStore product support pages (<https://www.dell.com/support>) for detailed user documentation.

New Features

The following functionality was introduced in this release.

Functional Area	Feature Description	Summary of Benefits
Support	This release adds support for Secure Remote Procedure Call (RPC).	Protects against Netlogon vulnerability CVE-2020-1472.

Changed Features

The following functionality has changed.

Functional Area	Feature Description	Summary of Benefits
Support	<p>It is recommended that download all your system and firmware update packages from the Drivers and Download page, located on the Dell Support site product page for the specific model of PowerStore you are updating.</p> <p>For example, if you need update packages for PowerStore 1000T model appliance you would go to the Drivers and Download page at the following location:</p> <p>https://www.dell.com/support/home/en-in/product-support/product/powerstore-1000/drivers</p>	A single location for all upgrade packages for a specific PowerStore model.

Resolved Issues

The following issues have been resolved in this release.

Issue ID	Functional Area	Description
MDT-220508	Install or Upgrade	<p>When you are upgrading a PowerStore X model appliance to PowerStore version 1.0.3.0.5.007, running a Health Check on the PowerStore software upgrade package might result in the following error message:</p> <p>Internal error has occurred</p>
MDT-226425	Connectivity - Networks	An issue caused Storage network reconfiguration flow to fail and left the Storage network in an inconsistent state. The problems exist only in case of reconfiguration performed inside the same IP subnet without changing default gateway IP address.
MDT-239099	Hardware	An unexpected condition caused a rolling node reboot across both nodes during inline deduplication processing.

Issue ID	Functional Area	Description
MDT-221465	Hardware	Prevent an unexpected node reboot caused by a deadlock condition induced by a user service being cleaned up and restarted.
MDT-226692	Hardware	A single node reboot occurred when two kernel processes, one executing nvme_timeout and the other executing nvme_remove, attempt to access locked resources at the same time and they deadlock because each process is holding a resource needed by the other process.
MDT-231562	Install or Upgrade	System upgrade completed successfully but the storage system displayed an older version number.
MDT-222667 MDT-242417	Support	A race condition was causing the scheduler in the service container to stop occasionally, causing service activities to not be processed.
MDT-242760	Support	Stale file handles were accumulating and taking up space needed by support materials.
MDT-233322	Support	Ensure that configuration and telemetry capture can't run more than one instance at a time to prevent resource contention in the system.
MDT-187816	Virtualization	Deployments in environments where vCenter's ESXi host management was not using VMCA mode fail without a clear error message.
MDT-225838	Virtualization	<p>In case vCenter is being used for the initial configuration of a PowerStore X model appliance and vCenter has a self-signed SSL certificate installed in its trust store, the initial configuration fails with "Failed to create ISOs directory" error.</p> <p>This issue is resolved by using SSH on the ESXi host and running the following command prior to creating the cluster:</p> <pre>./bin/clm-cmd/hostscv/advopt/update Config.HostAgent.ssl.keyStore.allowSelfSigned bool "true"</pre> <p>This command ensures that the ESXi host allows non-CA certificate to get pushed to the ESXi host.</p>

Known Issues

The following high severity issues are reported in this release. For a list of the minor issues, see Knowledge Base article SLN320772 PowerStore Release Notes – Minor issues at: <https://www.dell.com/support/article/SLN320772>.

Issue ID	Functional Area	Description	Workaround/Resolution
MDT-245165	Cluster - Creation	Each PowerStore appliance is pre-configured with an Administrator user (admin), which has a default factory password. The PowerStore Initial Configuration Wizard will require you to change this password. Once you have changed the admin user password, you must complete the cluster creation process using this appliance as the primary one. This appliance can no longer be configured as a non-primary appliance in a cluster, because only the primary appliance is permitted to have the non-factory default password.	Contact your service representative if you mistakenly change the password on an appliance, and want it to be a non-primary appliance in a cluster.
MDT-152854	Connectivity - Hosts	Running an unmap operation might cause a host I/O latency impact of more than 15%. You can disable auto-unmap for applications that have this feature, or manually schedule an unmap operation to reduce the impact on hosts.	Disable auto-unmap for applications that have this feature. Schedule unmap operations manually to reduce the impact on hosts.
MDT-139488	Connectivity - Hosts	Xcopy operations can impact host I/O performance.	None
MDT-211358	Connectivity- Networks	TDIP stopped advertising on PowerStore 3000X model.	Perform either one of the following actions to workaround this issue: Either, wait a few minutes for the state of the system to change and try again. or Reset Drive, Mezz or I/O Module if available and wait for few minutes and try again, then reboot the primary node.
MDT-55667	Data Collection	Storage container capacity metrics are not available until I/O operations have begun.	Look at the capacity metrics again after I/O operations on the storage container have been performed.

Issue ID	Functional Area	Description	Workaround/Resolution
MDT-220994	Data Protection	The replication session may not be deleted once a Protection Policy is unassigned from the storage resource.	<p>To delete the replication session, do the following:</p> <ol style="list-style-type: none"> 1. If Protection Policy is not assigned to the storage resource, reassign the the same Protection Policy that was previously assigned to the storage resource. 2. Unassign the Protection Policy from the storage resource.
MDT-133408	Data Protection	When a volume group is created with member volumes and is protected by a protection policy that includes a replication rule, the volume group members may be delayed in being replicated to the remote system until the next RPO cycle. The default replication rule RPO value in PowerStore Manager is 1 hour, but it can range from 5 minutes to 24 hours.	If the remote system connection is healthy, the member volumes should automatically be replicated to the destination during the next RPO cycle. To update the member volumes on the destination before the next RPO cycle, navigate to Protection-> Replication, select the volume group session and perform a "Synchronize" operation.
MDT-146780	Data Protection	When deleting a snapshot rule, the snapshot rule may not appear to be deleted, and the following error appears: "The system encountered unexpected backend errors. Please contact support. (0xE0101001000C)". Do not continue using the rule for protection.	Delete the snapshot rule again. The same error appears, but the rule will be deleted.
MDT-117061	Hardware	When beginning cluster creation, the hardware status is incorrectly indicated as not configured for clustering.	Wait a few minutes and try again.
MDT-190232	Hardware	The svc_node shutdown command may reboot the node instead of powering it off.	Run the svc_node shutdown command again when the node has finished rebooting.
MDT-137439	Import	If an import from a Unity or VNX2 system to PowerStore is cancelled by the user or fails for some reason, it is possible that subsequent attempts to import the volume will also fail.	Remove the Unity or VNX2 as a remote system and then add it again. This action will clear the issue and allow the import to proceed.
MDT-174416	Import	Hosts groups are not supported for agentless import.	None

Issue ID	Functional Area	Description	Workaround/Resolution
MDT-236192	Internal Migration	Internal migration of imported volumes from a remote system using the non-disruptive import variant does not redirect a host application running on either Linux/Windows or VMware to the associated PowerStore volumes.	To ensure a successful migration between appliances for imported volumes, reconfigure the host application to PowerStore volume before initiating intra-cluster migration.
MDT-167020	Internal Migration	Migration of a storage resource failed with the error "Transit object with Handle <id> : status online on only one node." One of the nodes of the migration source appliance was down when the synchronize phase started. Both nodes must be online for migration.	Bring the offline node back online and then try the migration again.
MDT-145764	Internal Migration	During migration the temporary volumes that are created during migration are calculated into the vVol capacity metrics. The temporary volumes should not be included in the calculation.	Wait for migration to complete to get the correct calculation.
MDT-140927	Internal Migration	After a volume is migrated, there may be a dip in capacity and performance metrics reporting for that volume at the end of the migration operation.	None
MDT-164726	Install or Upgrade	If the Pre-Upgrade Health Check fails during an upgrade from PowerStore OS 1.0 to PowerStore OS 1.0.1 or later, clicking the failed operation link under Recent activities might result in an error because of a localization issue with the event message.	None
MDT-219735	Install or Upgrade	If a PowerStore 1.0.3.0.5.007 software upgrade package is uploaded to a PowerStore T model cluster with a single appliance running PowerStore OS version 1.0.1.0.5.002 or 1.0.1.0.5.003, then an appliance running PowerStore OS version 1.0.2.0.5.003 is added to the cluster and another PowerStore 1.0.3.0.5.007 software upgrade package is uploaded to the cluster, performing an upgrade will fail before the upgrade process completes on the primary appliance and the second appliance will not be upgraded.	Contact your service provider.

Issue ID	Functional Area	Description	Workaround/Resolution
MDT-156905	Install or Upgrade	After a software update, the NAS servers may not fail back automatically to the original node.	Manually fail back the NAS servers from PowerStore Manager.
MDT-135505	Install or Upgrade	Drive firmware updates may not get applied to a single or few drives within the appliance. This may occur because of a timing issue between the two nodes in the appliance.	Download and install the drive firmware again to ensure it gets updated on the drives that were missed in the previous attempt.
MDT-170949	Install or Upgrade	Running PowerPath 7.1 and earlier on a Linux host causes an I/O error during the software upgrade of PowerStore OS 1.0 to PowerStore OS 1.0.1.	Apply the next/upcoming PowerPath 7.1 patch, and then run the PowerStore software upgrade to avoid the I/O error.
MDT-146346	Notifications and Alerts	Some hardware alert states may persist for a short time after the health of the object has been restored. The alert states eventually resolve with the correct state.	None
MDT-245640	PowerStore Manager (GUI)	When rebooting or powering off a node from PowerStore Manager, the system may not display any acknowledgement that the process has begun. The Reboot or Power Down button may still appear clickable. Despite the lack of acknowledgment, the operation will be triggered successfully after a single click of the button.	None
MDT-118394	PowerStore Manager (GUI)	Uploading an upgrade package that is larger than 4 GB with Microsoft Edge or Internet Explorer fails.	Try again with a different browser.
MDT-86305	PowerStore Manager (GUI)	When you power down a node in PowerStore Manager, the screen does not automatically refresh the state to indicate that the node is getting powered off.	On the Hardware tab, click the Refresh icon (appears on the top right corner of the tab, next to the base enclosure image) or refresh the browser page.
MDT-145344	PowerStore Manager (GUI)	While performing a Refresh Using Related Volume or Volume Group operation, you might receive an exception error when you select Choose One from the drop-down before you click Refresh. If this occurs, you must restart PowerStore Manager.	When refreshing a resource, do not select the "Choose One" entry in the Refresh from Volume/Volume Group drop-down.
MDT-163489	PowerStore Manager (GUI)	Once a node is replaced, the new node hardware information does not appear in PowerStore Manager immediately.	After replacing a node, wait up to 30 minutes for the PowerStore Manager screen to reflect the update.

Issue ID	Functional Area	Description	Workaround/Resolution
MDT-130894	PowerStore REST API	Two invalid resource_types, FEPort and Initiator, may be returned by the event and alert APIs.	Events or alerts with resource_type FEPort or Initiator should ignore the resource_type values. External OpenAPI clients must disable validation for the event and alert APIs with resource_types of FEPort or Initiator.
MDT-153026	Security	When a drive is inserted into an appliance, it will take time for D@RE to unlock it. Most drives take a few minutes. However, it takes more time for a ColdStream drive to unlock. The time is proportional to the size of the Intel Optane SCM drive, for example, 7 minutes for 375 GB, 15 minutes for 750 GB, and 27 minutes for 1.5TB. If you pull a drive out before it is unlocked, the drive will appear as disconnected. However, the drive will not be automatically removed from the appliance.	If you intend to use the drive, re-insert the drive and let the DARE unlock complete. If you intend to stop using the drive, re-insert the drive, wait for enough time (time to unlock plus about 1 minute for other overhead), and then remove the drive. The drive will then become disconnected and automatically removed from the system.
MDT-213516	Security	DNS is not supported for LDAP.	None
MDT-242368	Storage - Block	Unable to delete a volume group after deleting a replication session, due to undeleted replication session system snapshots.	Contact your service provider for the procedure to delete the snapshots.
MDT-121966	Storage - File	The File system deleted alert is displayed as an active alert in PowerStore T even after the file system has been successfully deleted.	Review the alert details, to confirm the alert is for a file system that has been deleted. Once confirmed, ignore or acknowledge the pending alert.
MDT-121784	Storage - File	After a NAS server is successfully deleted, the alerts against the deleted child objects of the NAS server such as DNS servers, file systems, NFS exports, or SMB shares, are not cleared.	Review the alert details, to confirm the alert is for a child object of a successfully deleted NAS server. Once confirmed, ignore or acknowledge the pending alert.
MDT-139095	Storage - File	While trying to create or delete a snapshot the following error message was returned: "Addition [or deletion] of NFS Export failed due to [The path [path_name] was not found on the system and cannot be exported.]"	Wait for some time and try the action again.

Issue ID	Functional Area	Description	Workaround/Resolution
MDT-147688	Storage - File	SMB clients cannot connect to a NAS server when the NAS server name is more than 15 characters. This is because by default the SMB server computer name takes the NAS server name.	Set the NAS Server name with 15 characters or less or set the SMB server's computer name with 15 characters or less. To modify the computer name, select all the characters in PowerStore Manager, and type the new name.
MDT-110930	Storage - File	Access to a snapshot is denied when there is only one snapshot created on the file system, and access to the snapshot is attempted at the time the snapshot is refreshing.	Mount and unmount the export on the client.
MDT-142317	Storage - File	After configuring and running I/O operations to SMB shares and NFS exports events such as an appliance or NAS server reboot, or a file system unmount or remount may cause some negative values to appear in the saved file system performance statistics exported from PowerStore Manager (GUI).	None
MDT-118544	Storage - File	After a request is sent from the REST API with an incorrect GUID, the error message returned displays the invalid UID: 00000000-0000-0000-0000-000000000000.	Ignore the UID in the error message and retry the request with the correct GUID.
MDT-154600	Storage - File	The following alert is sent during upgrade "NAS server [server name] fault tolerance is degraded due to NAS upgrade procedure on a peer NAS cluster node." However, once upgrade is complete the alert is not always automatically cleared.	After upgrade completes, acknowledge the alert to clear it.
MDT-116676	Storage - File	The "NAS node <node name> is down," major alert may be seen after changing the Cluster MTU value. Changing the MTU value may cause degradation or disruption in NAS (file) services.	Wait for the alert to clear before performing any further NAS (File) operations.
MDT-137232	Storage - File	Under rare circumstances, NAS services could be disrupted, if the appliance is close to reaching the maximum used data capacity.	Take one of the following actions on the appliance on which the NAS service is installed: add capacity to the appliance (for example, add drives or expansion enclosures), increase free capacity on the system (for example, deleting unused snapshots, volumes) , or migrate data off the system.

Issue ID	Functional Area	Description	Workaround/Resolution
MDT-210085	Storage - File	Unable to add a Tree Quota to a File system because there the description is too large (more than 512 bytes).	Add a shorter description to the Tree Quota.
MDT-195652	Storage - File	Unable to remove the description from an NFS Export.	To change the description, overwrite the current description with a blank character space. Save the NFS Export with no description, then go back and update the description again.
MDT-148608	SupportAssist	Attempts to upload Support Materials fail. SupportAssist is unable to upload files when there is insufficient free space in the system partition.	Delete old Data Collections to increase the available space in the file system so that SupportAssist can make a backup copy of the file for upload.
MDT-153771	SupportAssist	Enabling either Direct connect with remote access or Gateway connect with remote access may fail.	If enabling either higher tier type, Direct connect with remote access or Gateway connect with remote access, fails, wait for the backend issue to clear, then do the following: <ol style="list-style-type: none"> 1. Enable the related lower tier type, Direct connect without remote access or Gateway connect without remote access. 2. Disable the related lower tier type. 3. Re-enable the higher tier type, Direct connect with remote access or Gateway connect with remote access type. If the issue persists, contact your service provider.
MDT-109970	Virtualization	Unable to create a vVol storage container in PowerStore, after having just deleted a vVol datastore with the same name from vSphere.	Either create the vVol storage container in PowerStore using a different name or allow some more time before creating the new vVol storage container in PowerStore with the same name that was used in vSphere.
MDT-111956	Virtualization	In rare case, the automated mounting of a user-created PowerStore vVol storage container on an ESXi host could fail with the following error message displayed in vCenter "Timed-out waiting to get datastore information from host".	Manually mount the vVol storage container from the VMware vSphere GUI or CLI.

Issue ID	Functional Area	Description	Workaround/Resolution
MDT-156507	Virtualization	In high scale VMware vSphere environments, where the ESXi hosts and vCenter server are highly loaded (for example, simultaneous powering on a large number of VMs), heartbeat messages sent by the ESXi hosts to the vCenter server may not be delivered in time. When the heartbeat is not received in the 60-second timeout interval, the host is considered as not responding, and the host is marked as disconnected. This may result in the vSphere High Availability (HA) to trigger VM migrations to other hosts in the cluster.	In vCenter server, increase the heartbeat timeout interval to 120 seconds. See VMware Knowledge Base article 1005757. In case some VMs appear as invalid or orphaned as a result of the ESXi host disconnect, see the VMware Knowledge Base article 1003742 for instructions on recovering the VMs.
MDT-146763	Virtualization	During a vMotion process, some vVols are deleted. If the VASA provider becomes unavailable during a storage vMotion operation, the deletion of the vVols fails. These vVols are left orphaned and may appear as duplicates.	Delete the orphaned vVols using PowerStore CLI or REST API.
MDT-151804	Virtualization	In a PowerStore cluster with multiple VMFS datastores that are mapped to multiple hosts, a performance impact might occur if several VMs are powered off or powered on simultaneously.	Refer to the Dell knowledge base article SLN320477: “Best practices for VMFS datastores – for Bootstorm or Failover with VMware SRM” for additional details.
MDT-152993	Virtualization	A periodic, automatic cleanup process on vSphere that is performed randomly (every few days) deletes empty config vVols (directories). However, this process also deletes the ISOs folder that is pre-created by PowerStore in case you have not placed any ISO images into the folder.	Recreate the ISOs folder using the following PowerStore CLI command: pstcli -service storage_container -id <id where to create the folder> create_directory -size 100G -name ISOs By default PowerStore creates a 500 GB folder, but you can specify another size if necessary.

Issue ID	Functional Area	Description	Workaround/Resolution
MDT-119414	Virtualization	<p>Deploying a VM fails, and checking the vvol.log vCenter log file reveals the following messages:</p> <pre> 2019-11-15T05:24:35.161Z info vvol[2112740] [Originator@6876 sub=Default] VVolAbandonedObjectScan::ProcessNa mespace examining namespace /vmfs/volumes/<storage-container- identifier>/<vvol-identifier> and 2019-11-15T05:24:35.318Z warning vvol[2112740] [Originator@6876 sub=Lbs] 2112740:VVOLLIB : VVollib_OpenObjectTrackingFile:11348 : VVollib_OpenObjectTrackingFile: Failed to open object tracking file /vmfs/volumes/<storage-container- identifier>/<vvol-identifier> /.vvolObjList with error 6 where <storage-container-identifier> is the UUID of the storage container and <vvol-identifier> is the alphanumeric identifier of the config-vVol of the VM. </pre>	<p>Try to deploy the VM again. For more information, see the Dell knowledge base article SLN320647.</p>

Limitations

The following limitations exist in this release.

PowerStore T and PowerStore X model limitations

The following limitations exist in PowerStore T and PowerStore X deployment models.

Functional Area	Description
Importing external storage to PowerStore	<p>A maximum of 16 import sessions is supported in the Ready-For-Cutover state during an import. In some cases, when several dozen import operations are run back-to-back, intermittent failures of alternate import sessions may occur. If this occurs, do the following:</p> <p>Remove the remote system and then add it again.</p> <p>Run fewer set of imports (16 or less) at a time. It is recommended to start all these import sessions with automatic cutover turned off.</p> <p>Once all imports have reached the Ready-For-Cutover state, do a manual cutover.</p> <p>After one set of imports is completed, run the next set of imports after a delay of 10 minutes. This delay allows enough time for the system to cleanup any connections to the source system.</p>
PowerStore Management access	<p>Use the PowerStore cluster management IP address to access the PowerStore Manager and the PowerStore REST API. The appliance management IPs are intended primarily for service use.</p>
PowerStore scalability limits	<p>The <i>PowerStore Simple Support Matrix</i> lists the scalability limitations in PowerStore models. The PowerStore Simple Support Matrix is available from PowerStore documentation page at: https://www.dell.com/powerstoredocs</p>
Internal migration	<p>Prior to performing an internal migration, please refer to <i>PowerStore:Supported Host OS for Non-Disruptive migration of Storage resources</i> at: https://www.dell.com/support/article/en-us/how17129/ for a list of supported configurations and limitations.</p>
Security	<p>DNS is not supported for LDAP.</p>
SupportAssist	<p>SupportAssist cannot be enabled on PowerStore models configured with IPv6 for the management network. SupportAssist is not supported over IPv6.</p>

PowerStore X model limitations

The following limitations exist in PowerStore X deployment models.

Functional Area	Description
Clustering	Clustering with multiple PowerStore X appliances is not supported
Replication of Virtual Volumes (vVols)	Replication of vVols is not supported
Storage – File	NAS services are not supported in PowerStore X models.
Support for Virtual Machines	Virtual Machines (VMs) running on PowerStore X internal nodes only supports Virtual Volumes (vVols). Virtual Machine File System (VMFS) is not supported for internally running VMs, but is supported when using PowerStore X with external ESX servers attached via Fibre Channel or iSCSI.

Refer to the PowerStore product support pages (<https://www.dell.com/support>) for detailed user documentation.

Environment and System Requirements

All PowerStore deployment models must meet the following environment and system requirements.

Support Matrix

For compatibility and interoperability information, see the *PowerStore Support Matrix* which can be downloaded from the PowerStore Documentation page at: <https://www.dell.com/powerstoredocs>.

Host Configuration requirements

For host connectivity to PowerStore appliances, please refer to the *Dell EMC PowerStore Host Configuration Guide*.

Installation and Upgrade Considerations

Installation considerations

Before you begin to install PowerStore, review the *PowerStore Deployment Checklist*. Once you have completed all the planning steps in the *PowerStore Deployment Checklist*, you are ready to install your system.

The *PowerStore Deployment Checklist* can be downloaded from the PowerStore Documentation page at: <https://www.dell.com/powerstoredocs>.

Upgrade considerations

Before upgrading PowerStore refer to the *Dell EMC PowerStore Software Upgrade Guide*, which can be downloaded from the PowerStore Documentation page at: <https://www.dell.com/powerstoredocs>.

PowerStore T model appliance

To upgrade your PowerStore T model cluster to PowerStore version 1.0.4.0.5.003:

1. Download the latest PowerStore T software upgrade package named PowerStoreT-1.0.4.0.5.003.tgz.bin from the Dell Digital Locker at <https://www.dell.com/support/software>.

Upgrade package name	Package type	Description	Required
PowerStoreT-1.0.4.0.5.003.tgz.bin	Software release	PowerStore OS and node firmware updates	Yes

2. Perform the steps in the Upgrading PowerStore T model clusters section of the *PowerStore Software Upgrade Guide* to upgrade your PowerStore T model cluster.

PowerStore X model appliance

To view a list of compatible PowerStore OS and ESXi/vCenter versions for PowerStore X model appliances, see the *VMware Licensing and Support for PowerStore X* table in the *PowerStore Simple Support Matrix* which can be downloaded from the PowerStore Documentation page at: <https://www.dell.com/powerstoredocs>.

To upgrade your PowerStore X model appliance to PowerStore version 1.0.4.0.5.003:

1. Download the latest PowerStore X model software upgrade .zip file named PowerStoreX-1.0.4.0.5.003.zip from the Dell Digital Locker at <https://www.dell.com/support/software>
2. Extract the software upgrade packages from the .zip file to a folder on your computer. The contents of the PowerStore X software upgrade .zip file are:

Upgrade package name	Package type	Description	Required
ESXi670-202008001.zip	ESXi update	Dell EMC qualified VIB with ESXi 6.7 P03, which is the minimum version of ESXi required for PowerStore OS 1.0.4.	Required if the internal ESXi hosts are running ESXi 6.7 EP 15 or earlier. Not required if the internal ESXi hosts are running ESXi 6.7 P03 or later.
PowerStore-node_firmware-1.57.tgz.bin	Hotfix	PowerStore node firmware updates	Required when upgrading from PowerStore OS 1.0.2 or earlier. Not required when upgrading from PowerStore OS 1.0.3.
PowerStoreX-1.0.4.0.5.003.tgz.bin	Software release	PowerStore OS updates	Required Note: The PowerStore OS upgrade package is the only package that is required when upgrading from PowerStore OS 1.0.3.
PowerStoreX1.0.4_README	README file	PowerStore software upgrade README file	Not applicable

Upgrade package name	Package type	Description	Required
PowerStoreX-PreUpgrade_Package-1.9.tgz.bin	Hotfix	Custom Dell EMC qualified VIBs for ESXi hosts	Required when upgrading from PowerStore OS 1.0.2 or earlier. Not required when upgrading from PowerStore OS 1.0.3.

3. Perform the steps in the *Upgrading PowerStore X model appliances* section of the *PowerStore Software Upgrade Guide* to upgrade your PowerStore X model appliance:

The order that the software upgrades must be performed are:

1. Preupgrade - PowerStoreX-PreUpgrade_Package-1.9.tgz.bin
2. Node firmware - PowerStore-node_firmware-1.57.tgz.bin
3. ESXi update - ESXi670-202008001.zip
4. PowerStore OS - PowerStoreX-1.0.4.0.5.003.tgz.bin

The upgrade packages that must be uploaded to the PowerStore X model appliance are:

- PowerStoreX-PreUpgrade_Package-1.9.tgz.bin
- PowerStore-node_firmware-1.57.tgz.bin
- PowerStoreX-1.0. 1.0.4.0.5.003.tgz.bin

The update package that must be uploaded to the vCenter Server is ESXi670-202008001.zip.

NOTE: Note: If the ESXi update package ESXi670-202008001.zip has been previously applied to the ESXi hosts on the PowerStore X model appliance, the ESXi update does not need to be performed again during the PowerStore X upgrade. However, if the ESXi update is not performed during the PowerStore X upgrade, the ESXi hosts on the nodes of the appliance must be rebooted to complete the installation of the preupgrade package and node firmware updates before upgrading the PowerStore OS. For more information, see the *Upgrade the PowerStore OS* section of the *PowerStore Software Upgrade Guide*.

NOTE: Do not perform a Health Check on the PowerStore X model appliance before the preupgrade package and node firmware upgrades are installed on the appliance. Performing a health check on the PowerStore X model appliance before the preupgrade package and node firmware upgrades are installed results in an internal error message, which can be ignored.

Where to Get Help

Dell Technologies maintains support pages for all products at <https://www.dell.com/support>.

The product support pages provide important product information such as product and user documentation, knowledge base articles, drivers and other software installation packages downloads, advisories, knowledge base articles, and more.