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Deploy Any Application Architecture with PowerFlex

DELL PowerFlex Defined Storage Software User Guide

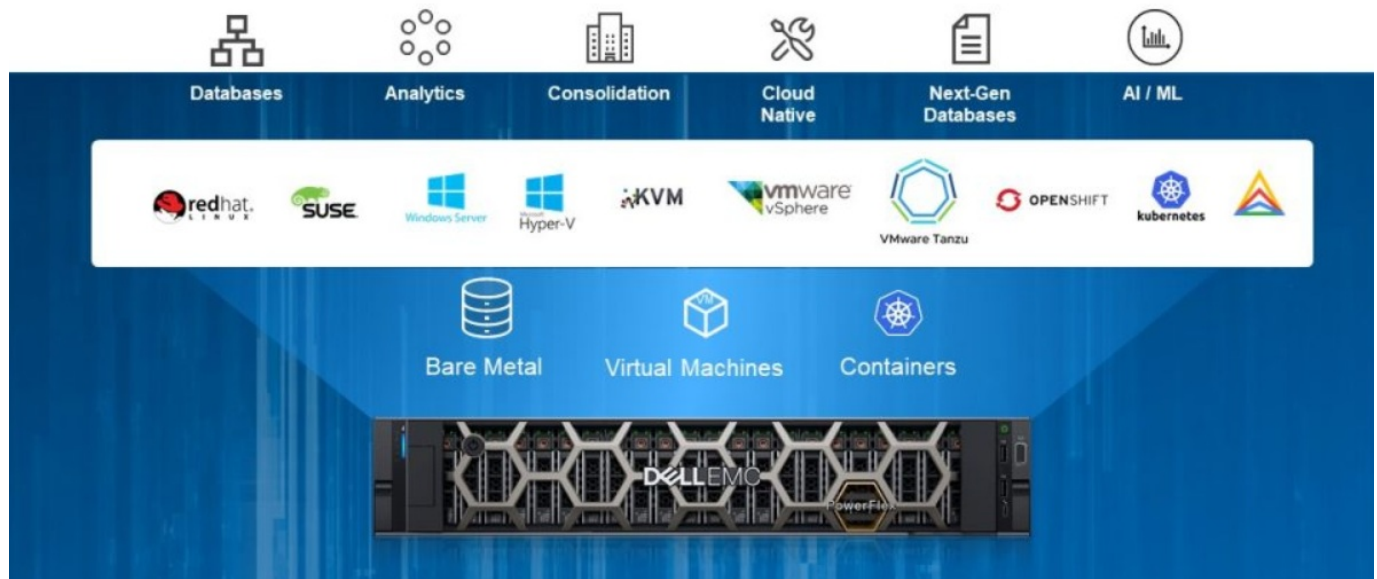## Contents

Dell

DELL PowerFlex Defined Storage Software

Deploy Any Application Architecture with PowerFlex

Product Information

Specifications

- **Product Name**: Dell PowerFlex 4.5.x
- **Release Notes**: September 2023 Rev. 1.0

Introduction
This document provides information about the PowerFlex version 4.5 release. It includes details on new features, known issues, and workarounds.

Product Description
PowerFlex is an enterprise-class, software-defined block and file storage solution. It is deployed, managed, and supported as a single system. PowerFlex allows for highly flexible and scalable configurations, including two-layer (server SAN), single-layer hyperconverged setups, storage-only deployments, PowerFlex file services, and mixed architectures within a single deployment. PowerFlex Manager is the unified tool used for managing and operating PowerFlex.

New Features in PowerFlex Version 4.5
Version 4.5 of PowerFlex introduces the following new features

- Support for Release Certification Matrix (RCM) version 3.7.3.0
- Support for Intelligent Catalog (IC) version 45.373.00 in PowerFlex appliance
- Support for PowerFlex_Software_4.5.0.0 in software-only PowerFlex custom node

Where to Get Help
If you require further assistance or support, please refer to the following resources

- Dell Release Certification Matrix (RCM) Portal for certified versions of software and firmware components
- Dell PowerFlex Appliance with PowerFlex 4.x Support Matrix for firmware, software, and component support
- PowerFlex software technical documentation for additional PowerFlex software documentation

Product Usage Instructions

Supported Configurations
PowerFlex version 4.5 supports the following configurations

- PowerFlex rack with supported firmware and software
- PowerFlex appliance with Intelligent Catalog (IC) version 45.373.00
- Software-only PowerFlex custom node with PowerFlex_Software_4.5.0.0
- VxFlex Ready Node with required software packages for software-only deployments

Target Audience
This document is intended for customers, Dell Technologies teams working with customers, and certified partners.

FAQ

- **Q: What is PowerFlex?**

  PowerFlex is an enterprise-class, software-defined block and file storage solution that offers flexible and scalable configurations.
- **Q: What is PowerFlex Manager?**

  PowerFlex Manager is a unified tool used for the management and operations of PowerFlex.
- **Q: What are the new features in PowerFlex version 4.5?**

  The new features in PowerFlex version 4.5 include support for Release Certification Matrix (RCM) version 3.7.3.0, Intelligent Catalog (IC) version 45.373.00, and PowerFlex_Software_4.5.0.0.

NOTE: A NOTE indicates important information that helps you make better use of your product.
CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.
WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

Introduction

This document provides information about the PowerFlex version 4.5 release, including

- Information about new features delivered in this release for PowerFlex and PowerFlex Manager
- Known issues and steps to work around them

The PowerFlex and PowerFlex Manager version 4.5 release supports

Product	Supported firmware and software
PowerFlex rack	- Version 4.5 adds support for Release Certification Matrix (RCM) version 3.7.3.0. - For the supported certified versions of software and firmware components, see the Dell Release Certification Matrix (RCM) Portal. To access the RCM portal go to the **RCM Portal**.
PowerFlex appliance	- Version 4.5 adds support for Intelligent Catalog (IC) version 45.373.00. - See the *Dell PowerFlex Appliance with PowerFlex 4.x Support Matrix* for supported firmware, software, and components.
Software-only, PowerFlex custom node, VxFlex Ready Node	Version 4.5 adds support for PowerFlex_Software_4.5.0.0. This is a software-only catalog that provides only the packages needed for software-only deployments. It does not include ISOs or SVM packages.

- The target audience for this document includes customers and Dell Technologies teams working with customers and certified partners.
- For additional PowerFlex software documentation, go to PowerFlex software technical documentation.

Revision history

Date	Document revision	Description of changes
September 2023	1.0	Initial release

Product description

- PowerFlex is an enterprise-class, software-defined block and file storage solution that is deployed, managed, and supported as a single system. Highly flexible and scalable, PowerFlex allows customers to mix two-layer (server SAN), single-layer hyperconverged configurations, storage-only, PowerFlex file services, and other mixed architectures within a single deployment.
- PowerFlex Manager is a unified tool that is used for the management and operations of PowerFlex.

PowerFlex version 4.5

New features in 4.5
PowerFlex release 4.5 introduces the following new features

Feature	Details
Dell APEX Block Storage for AWS	Dell APEX Block Storage for AWS enables you to deploy a PowerFlex cloud-based storage cluster in Amazon Web Services (AWS). This deployment is a manual process.

Dell APEX Block Storage for Microsoft Azure	Dell APEX Block Storage for Microsoft Azure enables you to deploy a PowerFlex cloud-based storage cluster in Microsoft Azure. This deployment is a manual process.
Cloud data mobility with Dell APEX Block Storage	You can move data between on-premises and public cloud or across regions within the public cloud using the Dell APEX Block Storage native async replication feature.
PowerFlex cloud licensing	- When you deploy a PowerFlex cloud-based cluster, you are provided with a free evaluation license. This license gives you 90 days to use the cloud-based storage cluster. After 90 days, the storage is preserved. However, you are not allowed to make configuration changes to the deployment. Once the evaluation license has expired, you must purchase a subscription or permanent license to continue using the cluster with the full range of capabilities. - PowerFlex Manager now shows the start date and end date for both evaluation and subscription licenses on the **License Management** page. Evaluation licenses apply only to cloud deployments, whereas subscription licenses apply to both cloud and on-premises deployments.
PowerFlex support for Dell PowerEdge R660, R760, R6525, and R7625 servers	- PowerFlex 4.5 certifies support of the following platforms for software only and custom node offerings - Dell PowerEdge R660 and Dell PowerEdge R760 servers (Intel based) - Dell PowerEdge R6525 and Dell PowerEdge R7625 servers (AMD based)
SAML for SSO to support cloud integration	You can configure single sign-on (SSO) authentication through an Identity Provider (IdP) using the SAML 2.0 protocol. This makes it possible for cloud users to take advantage of SSO capabilities.

	This release introduces the following NVMe/TCP connectivity enhancements:
PowerFlex NVMe/TCP connectivity	• Host network awareness PowerFlex considers the host networks for resiliency. When a host is losing a network, it can still use other paths through available networks to access the storage. • Network sets PowerFlex supports specifying networks that might fail together. NVMe/TCP connections are allocated to the NVMe/TCP hosts through multiple network sets, offering resiliency to the failure of the network set. • Fault set support NVMe/TCP supports fault sets. Connections allocated to the NVMe/TCP are through targets on multiple fault sets that provide path resiliency to a fault set failure.

Feature	Details

	• NVMe reservations support (SCSI-3 equivalent)
	
	PowerFlex supports NVMe reservations (SCSI-3 equivalent) with NVMe/TCP.
	
	• Persistent discovery controller
	
	NVMe/TCP hosts connect to PowerFlex through persistent discovery, which enables automatic updates of the hosts regarding storage side changes.
	
	• Migration to NVMe/TCP
	
	PowerFlex provides the option to migrate workloads from SDC to NVMe/TCP on ESXi:
	
	1. Online migration using Storage vMotion (VMFS only)
	   • The standard way of moving storage is with Storage vMotion. Storage vMotion also supports switching protocols by migrating to a new DataStore. For more information, see the *Dell PowerFlex 4.5.x Administration Guide*.
	2. Offline migration (VMFS only)
	   • There is a new option for converting an existing VMFS datastore from SCSI (SDC) to NVMe/TCP without having all the data over the network. The offline migration steps are covered in the following KB article: **https://www.dell.com/support/kbdoc/en-us/000213232**.
	
	NOTE: There are not standard ways to migrate Linux environments, ESXi clusters and RDMs.

PowerFlex management controller self- awareness on PowerFlex appliance and PowerFlex rack	PowerFlex 4.5 allows self-awareness of its underlying controller system. This includes upgrade from end-to-end and the ability to receive alerts from issues in the PowerFlex management controller infrastructure.
Multi-network support (available for PowerFlex appliance and PowerFlex rack)	PowerFlex Manager now supports multiple management networks of the same type. The supported networks are • Hypervisor management • PowerFlex management • Hypervisor migration • Replication networks
Modular (single) component upgrade	PowerFlex 4.5 changes the package in the PowerFlex rack or PowerFlex appliance catalogs to newer or older versions. This upgrade depends on customer cases that want to deviate from the Release Certification Matrix or Intelligent Catalog. **NOTE:** By default, this feature is turned off and can only be enabled through an RPQ process. If applicable, contact your account team for details.

Alert intelligence and deduplication	PowerFlex Manager restricts the number of alerts for an event to three per hour. This, in turn, eliminates duplicate alerts for the same event and prevents display of non-actionable items.
Capture the RCM version and send to the ESE data items portal	PowerFlex Manager facilitates sending the active RCM version to the Data Items portal. When multiple resource groups run on different compliance files, all the active RCM versions are sent to the Data Items portal. If PowerFlex Manager is not managing any resource groups then, the default RCM of PowerFlex Manager is sent to the data items section of the Embedded SupportAssist Enabler. By default, this information is sent every Saturday at 02:00 AM UTC.
Troubleshooting bundle includes PowerFlex logs	The PowerFlex Manager troubleshooting bundle now includes PowerFlex logs.
Login with SSH key pairs for nodes, switches, and deployments	You can use SSH key pairs to access PowerFlex systems. When you enable SSH key pairs, PowerFlex Manager uses public/private RSA key pairs to SSH into your nodes and switches securely, instead of using a username and password. When you enable SSH key pairs, PowerFlex Manager also uses RSA public/private key pairs for operating system users and administrators during deployment operations. The root user has no local or remote login capabilities.

Feature	Details
	• To support login by SSH key pairs, you can enable SSH key pairs on the **Node**, **Switch**, **OS Admin**, and **OS User** credential types. • This feature enhances security by blocking the root user and password. This feature is also required for Dell APEX Block Storage for AWS and Dell APEX Block Storage for Microsoft Azure.
Replacement of legacy roles with new roles in the PowerFlex Manager user interface	PowerFlex Manager has replaced the legacy roles from earlier releases with the following new roles: • SuperUser
	SystemAdmin
	StorageAdmin
	LifecycleAdmin
	ReplicationManager
	SnapshotManager
	SecurityAdmin
	DriverReplacer
	Technician
	Monitor
	Support

Default for LACP balance setting has been changed to improve performance	The LACP balance default setting (xmit hash policy) has been changed to 3+4. This change removes an unbalance issue with the previous LACP setting and increases the performance of business applications running on PowerFlex. This LACP change applies only to new deployments. It does not change the setting for one-time migration or upgrade scenarios.
Ability to use a nonroot user for PowerFlex system administration functions	• You can now use a nonroot user instead of the root user for PowerFlex system administration functions. This feature enhances security by disabling the root user during operating system installation and non-disruptive updates. PowerFlex Manager allows you to specify a nonroot user when you configure a template for a compute-only, storage-only, or hyperconverged deployment. You can also use a nonroot user when adding an existing deployment. The ability to use a nonroot user applies to SLES, CentOS, and VMware ESXi, as well as PowerFlex file deployments. • PowerFlex Manager allows you to use an LDAP user for PowerFlex system administration functions. When you create or edit an **OS User** credential, you can optionally specify the LDAP domain. This allows you to use an Active Directory (AD) user rather than a local user for administration functions.
Ability to deploy and provision block and file with a single storage pool	You can deploy PowerFlex block and file services using a single, shared storage pool.
	In release 4.0, the storage pool selected at the time of a PowerFlex File deployment was expected to be empty. A validation error was generated if there were any volumes present on the storage pool. This validation has been removed.
	PowerFlex no longer requires that the storage pool be a dedicated pool used only for PowerFlex File volumes. The storage pool is now available as a shared object for normal volume creation. If you upgrade a PowerFlex management platform from an earlier release, the storage pool for PowerFlex File services is configured so that it is available for normal volume creation for both block and file usage.
	In addition, the storage high and critical threshold values now remain unchanged after a PowerFlex File deployment. By default, the values of these parameters are 80% and 90% respectively. You can change these default values before performing the deployment. The values are not updated during the deployment.
Support for vCLS datastore placement	PowerFlex Manager provides support for vCLS datastore placement with hyperconverged and compute-only VMware ESXi deployments. PowerFlex Manager

Feature	Details

	- configures the allowed list of datastores for new resource group deployments. Whenever possible, it reuses the existing datastores instead of creating new ones. - When you add an existing resource group, PowerFlex Manager does not create more datastores when there are already two or more datastores in the allowed list. - You can check the vCLS datastores in the vSphere Client. Go to the hyperconverged or compute-only cluster and choose **Configure** > **Data stores**. Then, check the **VCLS ALLOWED** tab.
Ability to configure NVMe/TCP host network connectivity	You can configure the data networks that are used for NVMe/TCP host connectivity. The **Settings** page in PowerFlex Manager has a new section that is called **System Data Networks** that provides a user interface for adding the network details. You can configure the system data networks through the PowerFlex Manager user interface, or through an API. An API is also available for configuring NVMe/TCP host groups.
Support for webhooks	PowerFlex Manager enables you to register a notification receiver for pushing alert and event messages through a webhook to a target system. Webhooks provide a one-way system of communication that sends HTTP requests triggered by events that occur in a source system to a destination system. The user interface in PowerFlex Manager provides a way to configure a webhook destination and policy so that events and alerts created or received by PowerFlex Manager can be sent to any webhook destination.

Updated switch support (available for PowerFlex appliance and PowerFlex rack)	PowerFlex Manager has updated its support for Cisco Nexus and Dell PowerSwitch models. PowerFlex Manager can perform the following operations on a wide variety of Cisco and Dell Networking switch models - Upgrade networking operating system versions based on an RCM - Upgrade firmware versions based on an RCM - Report RCM compliance based on an RCM - Identify each switch model and apply the correct firmware version to each model The updated switch support covers the following Cisco models and NX-OS or EPLD versions - N3172TQ (9.3.10) - N31108TC-V (9.3.10) - N3132 (9.3.10) - N3164 (9.3.10) - N9236C (9.3.10) - N9332PQ (9.3.10) - N93180YC-EX (10.3.1) - N93180YC-FX (10.3.1) - N93180YC-FX3 (10.3.1) - N9336C-FX2 (10.3.1) - N93240YC-FX2 (10.3.1) - N9364C (10.3.1) - N9364C-GX (10.3.1) - N92348GC-X (10.3.1) The starting point for any NX-OS upgrades to 10.3.x is 9.3.10 or higher. The updated switch support also covers the following Dell PowerSwitch models and OS10/OS9 versions: - S4148T (10.5.4.5) - S4148F (10.5.4.5) - S5048F (9.14.1.14) - S5224F (10.5.4.5) - S5248F (10.5.4.5) - S5232F (10.5.4.5)

Feature	Details
	S5296F (10.5.4.5) The starting point for any OS10 upgrades to 10.5.4.5 is 10.5.3.x or higher.
REST API support for fault sets with SDTs	PowerFlex provides the ability to add a storage data target (SDT) to a fault set by using a REST API. In addition, for any fault set deployment, PowerFlex adds SDTs to the fault set. Once added, an SDT cannot be removed from a fault set.

PowerFlex file services enhancements	• PowerFlex Manager introduces the following PowerFlex file services enhancements
	• Single namespace
	• Ability to create a global namespace (GNS) supported by the NAS cluster with a single export
	• Allows all hosts with correct access permission to access existing and newly added file systems to the namespace without needing to explicitly mount them on each client
	   ◦ Consists of several file systems that may be SMB or NFS
	   ◦ Common Event Publishing Agent (CEPA)
	   ◦ Support for CEPA, which is part of the Common Event Enabler (CEE) package
	• Ability to receive file event notifications
	   ◦ Ability to use CEPA to see events on some/all of my NFS and SMB file systems
	   ◦ Enhanced scalability
	• Updated scalability limits for file services objects running on PowerFlex For complete details on all product limits, see the *Dell PowerFlex 4.5.x Technical Overview*.

Changed features

This section lists changes to existing features and features that are no longer supported in PowerFlex 4.5.

Operating system highlights
PowerFlex 4.5 enables support of the following operating systems

- Red Hat Enterprise Linux 9.2 or 8.8
- SLES 15.5
- ESXi 8.0 for NVMe over TCP client and NAS client

RFCache
The RFCache feature was removed in 4.0. Any customer using RFCache with 3.6.x.x must first remove the RFCache configuration and packages before initiating an upgrade.

VASA support

- VASA support is not available in this release. VASA support is a future road map item.
- Customers needing VASA support should continue using PowerFlex 3.6.x.x with the latest patch.

Installation and upgrade considerations
You can install and configure PowerFlex version 4.5, or you can upgrade from PowerFlex version 3.6.x to version 4.5. See the Dell PowerFlex 4.5 Install and Upgrade Guide for detailed instructions on installing or upgrading.

Licensing
PowerFlex use requires a license. Contact your Dell account representative to purchase a license for PowerFlex.

Upgrade
The following table lists the versions from which the upgrade can be performed

PowerFlex/ VxFlex OS / ScaleIO base version	Upgrade path	Supporting documentation
v3.6.0.x	One-step upgrade flow 1. Upgrade to v4.5.x	*Dell PowerFlex 4.5.x Install and Upgrade Guide*
v4.0.x	Two-step upgrade flow 1. Upgrade to v4.0.2 2. Upgrade to v4.5.x	*Dell PowerFlex 4.5.x Install and Upgrade Guide*
v3.0, v3.0.0.x, v3.0.1.x, v3.5.x	Two-step upgrade flow 1. Upgrade to v3.6.0.x 2. Upgrade to v4.5.x	*Upgrade PowerFlex to v3.6 Guide*
v2.0.1.4, v2.6.x	Three-step upgrade flow 1. Upgrade to latest version of v3.0.1.x 2. Upgrade to v3.6.0.x 3. Upgrade to v4.5.x	*Upgrade VxFlex OS to v3.0.x Guide Upgrade PowerFlex to v3.6 Guide*

In release 4.5, PowerFlex supports CloudLink 7.1.7 and 7.1.8.

Supported operating systems
For a list of supported operating systems, see the Storage section of the Dell Technologies Simple Support Matrices at **https://elabnavigator.dell.com/eln/modernHomeSSM.**

SDC compatibility
By design, the PowerFlex SDC in this release is compatible with newer and previously released systems that are currently supported (for example, VxFlex OS v3.0.1). In addition, the PowerFlex system (backend) in this release is backward and forward compatible with previously released SDC versions that are currently supported.

Some limitations may apply to mixed-version systems, such as

- Replication is not supported on SDC releases earlier than PowerFlex v3.5.
- The CHAP component authentication feature cannot be enabled unless every MDM, SDC and SDS in the system is at least version 3.5, and conversely, if the feature is enabled, no pre-v3.5 SDCs can be added.
- Fine granularity storage pool-based volumes cannot be mapped to a ScaleIO/VxFlex OS v2.x SDC.
- Snapshot policy management is not available with SDC releases earlier than VxFlex OS v3.0.

Known issues in 4.5

- The Dell engineering team is working to resolve known issues.
- Before getting started with PowerFlex and PowerFlex Manager, review the following known issues in version 4.5

CLI

Issue ID	Symptom	Recommended action
SCI-67737	If the generate_ login certificate scli command is run without parameters, it fails.	Run the command with a single known parameter (scli — generate _login_ certificate –username for example) or use the full help request scli — help — generate_ login_ certificate.

MDM

Issue ID	Symptom	Recommended action
SCI-65059	IP addresses are not rebalanced when MDM disconnects from SDT.	- If an SDT is unreachable, the SDT_NOT_CONNECTED_TO_HO - ST alert is raised. - You can use connectivity monitoring utilities (such as ping) to monitor the network health.

SDS

Issue ID	Symptom	Recommended action
SCI-67744	All SDS devices get into an error state during and after server reboot. This can happen if you run NVME IO for a long time, then run reboot -f now.	Do not use -f with the reboot now command.
SCI-67359	- If a device-at-fault event occurs while an SDS is in protected maintenance mode (PMM), some capacity may become unwriteable, resulting in I/O errors until the PMM is aborted. - The device-at-fault event occurs when a device is readable but not writable.	Remove from PMM.

SDC

Issue ID	Symptom	Recommended action
SCI-75418	- A user writing a script to orchestrate replication failover or switchover for SDC volumes must have a way to know when the destination volumes are R/W. Currently, the failover state = DONE when the call to change the access mode is made. This situation makes it difficult to write a failover script that runs successfully. PowerFlex does not provide a state that the automation script can read to determine whether the volumes are accessible. - This situation can happen when SCSI Persistent reservation is not in use.	None.

SDT

Issue ID	Symptom	Recommended action
SCI-76885	Remove job gets stuck "in progress" and is not seen in the progress for any of the SDTs. The operating system crashes and the data are not accessible until the reboot.	None.

SCI-77134	Panic in an SDT occurs when an NVMe host is running on the same machine as the SDT. NVMe connect-all command that should have been finished does not finish and uses up all the CPU resources on the machine. You may see a temporary drop in performance until the SDT reboots.	None.
SCI-76523	Multiple NVMe kernel crashes occur in a data mobility workflow. This problem has been observed in an RHEL9 environment. All the processes on the server are impacted during the reboot. If the SDS resides on the server, the system is degraded. If the primary MDM is on the server, a switchover occurs.	Run the SDTs on separate servers.
SCI-76303	- In an NVMe configuration with load balancing, the I/O controllers may not be created on sysports on some hosts when changing max sysports to 13 in 1 K hosts. - After changing the max sysports, you may notice that some of the hosts had sysports not connected, but all should be connected.	Manually perform the connect using the NVMe CLI.
SCI-74444	Mount mapped volumes over network latency is very slow.	None.
SCI-69737	Ubuntu 22.04 gets stuck in "connecting/resetting" NVMe connections state when attempting to establish I/O and network connections.	None.
SCI-69736	NVMe host restarts when I/O and network errors occur on SLES 15 sp4. You may see many failed connection attempts with the following error message: Error: Trying to connect new controller to already connected port	None.
SCI-67009	In some cases where the number of hosts and active connections is close to using the maximal number of NVMe controllers permitted by the NVMe standard, adding a new SDT to the system may fail.	- Disconnect one or more hosts from the system to allow the system to reclaim NVMe controller IDs. While the addition of the - SDT is blocked, the system can still function properly and serve all currently connected hosts.

Issue ID	Symptom	Recommended action
SCI-66722	- It is possible to remove 2 SDTs that are the only paths of a volume. - When removing 2 SDTs, after removing the first one, the MDM will replace it in the host connectivity goal with a port from the other SDT and will update all paths that used it with system-ports from other SDTs. (Some might get a path from the new port in the goal.) When removing the second one, the MDM does the same as in the first removal. However, now some mappings that got the first new port in the goal after the first removal might also get the second	Dell Technologies recommends not removing or entering into maintenance mode a number of SDTs that is greater than or equal to the number of paths per volume, without reconnecting the hosts.

Issue ID	Symptom	Recommended action
	new port in the goal. Those mappings stay without connection.	
SCI-66645	- An incorrect alert definition is provided for SDT_MULTIPLE_DISCONNECTIONS_FROM_STOR AGE_BACKEND_COMPONENTS. - After bringing an interface down on an SDS, SDTs disconnect from it as expected and an alert is generated and processed by PowerFlex Manager. Upon recovery (NIC up), the events confirm that the SDTs and SDCs are connected back to that interface. However, this alert stays in the user interface. Sometimes, SDT alerts do not get properly cleared.	None.
SCI-66285	SDT performance drops approximately 30% when SDT processes span 2 numas. Deploying SDT and SDR on the same server can lead to reduced performance.	Avoid deploying SDT and SDR on the same server.
SCI-64187	NVMe namespace paths may change following disconnect and reconnect to PowerFlex NVMe Target, such that volumes may be used by different paths. Use by-id paths to maintain a stable path to devices across disconnect operations.	Use /dev/disk/by-id/<unique device path>.

SDR

Issue ID	Symptom	Recommended action
SCI-70298	If you use a CSV file to configure the PowerFlex cluster, it may fail to add an SDR. The failure produces an error that says "There is no available replication capacity". The cause of the failure is that there was not enou gh journal capacity to add the SDR.	Adjust the journal capacity.

PowerFlex Manager

Issue ID	Symptom	Recommended action
VXFM-36773	Expansion of fault sets on a storage-only r esource group is failing. This failure affects multi-network deployments with fault sets.	None.
VXFM-36355	A hyperconverged resource group with mul tiple networks and replication is failing on S VMs	None.
VXFM-36338	• On the **Resources** page, the **View Details** screen is not showing all firmwa re and software components for a deplo yed resource group. • The **Resource Groups** page is showing these components.	Look at the compliance report for the resou rce group to see the correct list of firmware and software components.
VXFM-36320	CSV deployment fails due to sshd security settings.	Remove additional settings from SSH confi g file.
VXFM-36315	The **Resource Group Details** page is not showing the MVM tag next to data network s for the PFMC service. This can happen if you	If the other IPs for the MVMs are from a sta tic network, you can see those IPs on the **Resource Group Details** page without the MVM tag.

Issue ID	Symptom	Recommended action

	- define GPL networks (flex data) as static instead of DHCP. In this case, then PowerFlex Manager shows data networks for MVMs, but does not show "MVM" next to the networks. - Currently, the MVMs have more than one IP address: one management IP and two data IPs. According to the current implementation, the "MVM" tag shows only with the management IP of the MVM only in the **Resource Group Details** page.	
VXFM-36270	On the **Resources** page, the hover help for the **Hostname** field in the **Discovery Wizard** does not display any information.	Click the ? button in the upper right corner of the window.
VXFM-36255	Firmware and software updates are not blocked in a resource group when CloudLink Center is non-compliant. PowerFlex Manager permits you to initiate the update, but the update fails.	Be sure to upgrade CloudLink Center before performing firmware and software updates.
VXFM-36253	- After a one-time migration from 3.x to 4.x, health monitoring may report "Powerflex Unreachable". When the one-time migration is complete, the gateway version may still be 3.x. In this situation, subsequent operations are not performed, such as updating resource group details. - This issue is not persistent. Health monitoring will correct itself once the gateway is updated from 3.x to the 4.x.	None.
VXFM-36244	If you upgrade the PowerFlex System gateway after a one-time migration from 3.x to 4.x, you are not able to perform a non-disruptive upgrade on the resource group unless it is removed and added back.	Remove the resource group and then add the existing resource group again.

Issue ID	Symptom	Recommended action
VXFM-36202	Installation with SSH keys uses the ansible - generated SSH key, instead of the customer key. This issue causes an install failure in the case where customer PFMP nodes have configured a custom location for authorized keys files to be placed. CMO automation unnecessarily generates its own keys and copies to the PFMP nodes, but they always copy to ~/.ssh/ authorized_keys, which may not be the correct location.	The options to work around the failure are as follows: 1. Remove the customization of authorized _keys location. 2. Exec into the CMO installer docker container running on the PFMP Installer node and manually copy the customer key to / root/.ssh/id_rsa. Then, retry the install. The installation will use the customer key, instead of the CMO generated key.
VXFM-36099	Ubuntu deployment is only supported via the CSV option.	None.
VXFM-35909	If multiple virtual routing and forwarding (VRF) instances are configured on a Dell OS 10 switch, a firmware update fails. You must upgrade the switch manually with this configuration.	Upgrade the switch manually.
VXFM-35808	CSV based deployment using SSH keys of type RSA with RHEL 9 nodes is failing.	Use username/password, or SSH key with type id_ecdsa.
VXFM-35792	Volume creation fails without displaying an error message indicating that the creation failed. This situation might arise if the requested volume size exceeds the volume allocation limit of 1048576.	None.

Issue ID	Symptom	Recommended action
VXFM-35563	PowerFlex Manager does not present the current status of MDM cluster nodes on the **Resources** page. MDM changes are not being processed correctly in the user interface.	Wait for the hourly inventory of the PowerFlex System gateway, or run a manual inventory to update the MDM cluster information.
VXFM-35398	An attempt to modify event publisher parameters for a stand-alone NAS server fails when the publisher contains an SMB server account.	For a stand-alone NAS server, the event publisher must have a "custom user account" specified.
VXFM-35355	For software-only deployments where SSH Key pair based authentication needs to be used, the OS User and OS Admin credentials need to have a password string defined. However, this password is not used. The password is required to support compatibility with rack and appliance based OS credentials.	Provide a dummy password.

VXFM-35247	• On the system capacity dashboard, the Total Capacity shown under Usable Capacity is supposed to represent the overall usable capacity of the system. However, if you trigger an • SDS failure by putting one SDS into instant maintenance mode, the Total Capacity and Free Capacity values increase, which is not correct. This issue applies to the main dashboard capacity, as well as to the Protection Domain and Storage Pool capacity reports.	After exiting instant maintenance mode on the SDS, all values should return to normal.
VXFM-35230	An incorrect error message is displayed on the Resources page in PowerFlex Manager when a power cable is pulled out from the server.	Log in to iDRAC to see the actual cause of the failure.
VXFM-34926	For PowerFlex file deployments that use a global namespace, the single namespace links are restricted to the single namespace quota limit, irrespective of their own quota limits. This situation can arise when there is a collision between the name of the unified namespace and the name of the file system.	Avoid using the same name for the unified namespace and the file system.
VXFM-34912	If you modify the event publisher to MSRPC protocol with CEPA servers in IP format, the modification fails without showing a failure message in the user interface.	When using the MSRPC protocol, be sure that all CEPA servers are in FQDN format.
VXFM-34909	CSV deployments may fail when you use a non- default SSH key name. For cloud and software deployments only, users can only use a standard/ default name. This limitation applies only to CSV deployments, and not to rack or appliance.	Use the default name.
VXFM-34531	If you use a CSV file to extend a PowerFlex cluster with a duplicate SDC name, you may see no warning or error message. The new SDC is installed, but it has no name.	Rename the SDC to work around this issue.
VXFM-34458	The primary MDM node log is missing from the troubleshooting bundle log when running the troubleshooting bundle for the first time on a CSV deployment setup.	Use the command add_ certificate to add the CA to the CLI's truststore.

Issue ID	Symptom	Recommended action
VXFM-34388	For PowerFlex file deployments that use CEPA, the CEPA CEE server connection shows "ONLINE" when an invalid password is passed for a custom user in the event publisher. If you replace a valid CEPA or CAVA user password	None.

Issue ID	Symptom	Recommended action
	with a wrong one, the server may continue to work using the old Kerberos ticket for about 10 hours, until this ticket expires.	
VXFM-34381	The DataMobility Test Remote Connectivity API fails to respond for the first time when a large number of volumes are mapped to the host (Source system).	Try again after a few seconds and you should see the output.
VXFM-33379	When the MDM is not connected to the Block gateway, the gateway returns default version "4.0". This version number is a transient value. Once the MDM is connected (a resource group is deployed), the value is updated to list the MDM version installed on the cluster.	None.
VXFM-31338 and VXFM-31116	A user with the Snapshot Manager or Replication Manager user role is not able to create, map, or unmap snapshots.	Use another role such as Super User or System Admin to manage snapshots.
VXFM-31232	- During a 4.0.0.1 to 4.0.1 Upgrade, NFS requires an extra load balancer (LB) IP due to changes to local external traffic policy. This extra LB - IP used during the upgrade must be freed up after the upgrade. If you attempt to configure Dell SupportAssist on this appliance now, it fails, because there are no spare LB IPs to configure it.	
VXFM-31230	The **Getting Started** page presents an empty page after a CSV deployment. If you click the **Deploy with Installation File** button, then click **Next** and **Cancel**, you see an empty page if you go to **Settings** and click **Getting started**.	Refresh the browser, or log out.

		Use the REST API instead.
VXFM-31163 and V XFM-29528	The Modify IP Role feature is not working f or SDRs and SDTs.	• The REST command is modifyIpRole. F or example: /api/instances/Sdt::<id>/act ion/ modifyIpRole -d '{"ip":"<ip>", "newR ole":"<role>"}' • The role can be one of the following stri ngs: StorageOnly, HostOnly, StorageAn dHost
VXFM-31160	When you create a volume on the **Block** ta b, the **Map** button does not open the **Map Volumes to Hosts** window after the volum e is successfully created.	Click the **Cancel** button and try again.
VXFM-31093	While registering **SupportAssist** from the **Settings** page, PowerFlex Manager enabl es two policies by default once the registrat ion is successful. Instead of enabling the p olicy that was already there, PowerFlex Ma nager creates a second one.	Delete the duplicate entry if you do not wan t to use it.
VXFM-30855	The MDM events extractor now supports m ultiple IP addresses for each MDM. If the s ystem is configured with two or more mana gement IP addresses per MDM, the extract or tries to connect to each one. If the connection to multiple interfaces is lost, the	None.

Issue ID	Symptom	Recommended action
	• extractor does not recognize the discon nect and thinks that it is still connected, and does not show an alert indicating th at all are down. • If only one connection goes down, you do see an alert.	
VXFM-30806	When an LDAP user is assigned to an LDA P group, and the LDAP group is configured with a user role, a REST login command m ay fail with an error stating "no role assigne d to user". This failure can happen if you d elete the LDAP user, and try to log in with t hat user.	Define groups before adding explicit users. Also, If necessary, keep another local or fe derated user that can be used to log in.
VXFM-30798	Running the reset_PFMP.sh script reboots all three nodes simultaneously. If they are co- resident nodes running PowerFlex, this will cause a data unavailability condition on the PowerFlex cluster.	Do not run the reset_PFMP.sh script or dea ctivate the PowerFlex protection domain pr ior to running it.

VXFM-30792	On the **Getting Started** page, If you try to deploy a CSV installation file that has errors, the **Upload Installation CSV** button is disabled after the error message appears. This button should be enabled to allow you to upload a fixed file.	Close the wizard and open it again. Then, upload the fixed file.
VXFM-30663	Under rare circumstances, some snapshots may be missing from the file system user interface.	Use the export mountpoint to view the missing snapshots.
VXFM-29962	During an upgrade, a standby PostgreSQL node may end up in a failed state.	None.
VXFM-29896	When reconfigure network after docker already running the install_PFMP.sh phase failed.	None.
VXFM-29892	Remove any text from the UI which supports the statement that additional networks can be added for SO resource group.	None.
VXFM-29880	The block-legacy-gateway still shows under Target PowerFlex Gateway.	None.
VXFM-29803	- A service that was imported into version 3.8 of PowerFlex Manager cannot use **Update Resource Group Details** in version 4.x. - This situation could happen if you perform a one- time migration on a 3.8 environment that includes a service that was originally imported through **Add Existing Service**. If you remove a node from the resource group after the migration, and then perform **Update Resource Group Details**, you might see a 500 exception.	Remove the resource group, and readd it by using **Add Existing Resource Group**. This workaround ensures that the resource group is re-created with the correct data for the nodes.
VXFM-29710	The old REST API for logging out does not work. If you logout with GET https://<ip>/api/ logout, the API returns a 500 error code. In this release, you need to use both the "access_token" and the "refresh_token" you got when you performed the login. The old API uses only one token, so the API returns an error.	Logout with the new API: POST https://<ip>/rest/auth/logout
VXFM-29705	When a PowerFlex cluster deployment fails, you may see errors from a previous run if you attempt to redeploy repeatedly in quick succession.	None.

Issue ID	Symptom	Recommended action

	This error is a logging issue only. If you run deployments over and over quickly, the logs may bleed over into subsequent deployments.	
VXFM-29656	The Notifier service fails to handle ALM events with "send_to_srs"=false due to a key error. This results in some low-level information being sent when it should not be.	None.
VXFM-29637	It takes PowerFlex Manager up to 40 minutes to fully load after reboot, crash, or power off.	None.
VXFM-29619	**Delete Resource Group** does not remove nodes from CloudLink Center in the case of resource groups with encryption. The nodes are still present, but they are in a **Disconnected** state.	None.
VXFM- 29602	The PowerFlex gateway still responds to the old alert query API, but this was deprecated. • In older versions of PowerFlex, alerts were queried by the gateway using the following API: /api/types/Alert/instances • In this release, the alerts are handled by the alert service and queried by using this API: / rest/v1/alerts The deprecated API should return an error, but instead it responds normally and returns incorrect data that does not include some alerts.	Do not use the deprecated API. Use the new API instead.
VXFM- 29600	The node deployment status on the **Resources** page is set to **Deployment Cancelled** state after a successful non-disruptive update. This is a temporary state and should be corrected in a few minutes.	Check again in a few minutes to see if the deployment status has been updated.
VXFM-29584	The exception only flag for IM log collection is not supported. This flag has been deprecated and is ignored.	None.

Issue ID		
VXFM-29543	The management workflow to allow swapping primary and backup nodes has not been added to the restricted operations after a NAS server has entered into an out-of-service state. This situation might occur in the following scenario: 1. You make a NAS storage pool full. 2. The NAS server on the storage pool becomes read-only. 3. You try to move the NAS server (this operation is a prohibited.) 4. You try to perform a swap of the NAS server (this is successful). This issue has no visible impact on file service operations.	None.
VXFM-29500	PowerFlex Manager does not provide the ability to place an SDT in maintenance mode within the user interface.	None.

Issue ID	Symptom	Recommended action
VXFM-29496	If you run the reset_PFMP.sh script to remove an old install and reinstall PFMP, the script removes pre-requisite software rpms: • jq • nmap • skopeo The install fails if these RPMs are not there already.	Install the missing RPMs again.
VXFM-29494	Filtering events by timestamp does not work correctly with milliseconds. For example, the following API call might return events that do not match the filter: • https://10.234.222.15:31943/rest/ v1/events? filter=timestamp+gt+2022-07-05T14 • :57:27.807Z&filter=service_instan ce_id +le+Value+above+limit+`-=/ • <>,.?|;:[] • {}&order=resource_id.dsc	None.

VXFM-29404	A hyperconverged resource group fails if an NFS datastore is already present.	Remove the NFS datastore and retry the resource group.
VXFM-29386	The **Latency** graph on the dashboard does not show any data for NVMe/TCP.	None.
VXFM-29304	Some event and alert services cannot recover from a configuration or certificate change in the AMQ service. All services may lose connection to AMQ and reconnection attempts may fail.	Restart the pod of services that did not disconnect.
VXFM-29291	On the **File** > **NAS Servers** or **File** > **File Systems** page, the performance details do not get updated on the side pane for a selected NAS server or file system.	Click somewhere else on the page and click back again to see the performance details.
VXFM-29272	A hyperconverged deployment fails in a partial network configuration when DNS is not configured in the hypervisor management network.	Configure DNS.
VXFM-29234	- When you create a login certificate and it later expires, an attempt to login with the expired certificate gives a misleading error message: **scli –login —p12_path /root/.scli/admin_cert.p12 –p12_password password Error: Failed to connect to MDM 127.0.0.1:8611** - There should be some indication that the certificate is no longer viable and you need to create a new one.	None.
VXFM-29190	NVMe drive replacement fails with the error "Removal of the operating system failed". The error is confusing because it says it failed, but you can remove the drive without issue and the	None.

Issue ID	Symptom	Recommended action
	new drive is detected and can be added back to PowerFlex and CloudLink.	
VXFM-29174	The **Edit Management Software Upgrade Settings** page does not have a **Test Connection** button. However, when you click **Save**, PowerFlex Manager displays a message indicating whether the supporting connections that are required for the upgrade are valid.	None.
VXFM-29095	There is no way to delete a source or destination on the **Notification Policies** page.	Remove or disable all the policies involving this source or destination.

VXFM-28986	PowerFlex Manager allows you to deploy 16 nodes for a PowerFlex File (NAS) compute-only deployment. This is not supported. The limit is 16 nodes. The user interface should block NAS deployments that exceed 16 nodes.	None.
VXFM-28983	When trying to add an additional node to a resource group, you may see the deployment fail with a 500 error, if the storage pool media type is set to "transitional". The "transitional" media type is not supported.	None.
VXFM-28829	If you click **Add Template** in the **Deploy Resources** section of the **Getting Started** page, the user interface shows the **Create** wizard as expected. After selecting **Create a new template**, entering a **Template Name**, and clicking **Next**, the **Create Template** page shows up correctly. After entering all fields and clicking **Save**, the user interface does not show the template details to allow further editing of the template, as it would if you clicked **Lifecycle** > **Templates** and then clicked **Create**. However, the template is created.	Navigate to **Lifecycle** > **Templates**. You see the template in the list under **My Templates**. You can then click the template name to edit the template as expected.
VXFM-28828	The **Compliance Versions** page is not refreshing to show the new state of the compliance file when **Allow Unsigned File** is selected.	Refresh the page or navigate away from the page and come back. The **Compliance Versions** page then shows the state correctly.
VXFM-28715	You are unable to save changes in the **Destination Protocol Settings (SupportAssist)** window if you attempt to change the connection type from **Connect via Gateway Server** to **Connect Directly**.	Deregister before you try to change from one connection method to another.
VXFM-28693	The error message displayed in PowerFlex Manager is not clear when the logged in user tries to change their password.	None.
VXFM-28532	- Resizing the service volumes (vCLS volumes) should be blocked by PowerFlex Manager. - Currently, you can increase the vCLS volume size. After resizing the volumes, you may also see unexpected behaviors. For example, you may see a message saying that the service is in lifecycle mode because the vCLS volumes are on local storage.	None.

VXFM-28433	When trying to export a template without an encryption password, you may see an error.	Create a password on the **Backup Settings** page and the export works as expected.
VXFM-28291	An ambiguous error appears during node expansion if a reverse DNS lookup for a	None.

Issue ID	Symptom	Recommended action
	- hostname fails to find an IP address. The **Summary** screen for adding the node shows: - An unexpected error occurred on the system. Retry the operation later.	
VXFM-28281	PowerFlex Manager allows multiple instances of an iDRAC password update job to run on the same node simultaneously.	None.
VXFM-28194	- If there is a larger than expected time difference (over 1 hour) between PowerFlex Manager - and the PowerFlex storage nodes, an upload license action may fail with the following error: License Enforcement – Wrong - Command Parameters. This error is displayed on the **License Management** page in PowerFlex Manager. - In the PowerFlex Manager log file, the following error appears: "error_code":62, "error_message":"Li cense Enforcement – Wrong Command Parameters." - In the primary MDM logs /opt/emc/ scaleio/mdm/logs/trc.z.XX, the error displays as follows: Error, license activation date in the future	Align the time between the management platform and storage nodes and upload the license again.
VXFM-27411	Uploading a 4.0 license to an existing service that is still on 3.6 should show a more meaningful error message.	Apply the license through the CLI.

Issue ID	Symptom	Recommended action
VXFM-27388	If you upload a certificate file you have uploaded before using the same name you have used before, PowerFlex Manager does not display an error message and overrides the existing certificate.	None.
VXFM-26570	An attempt to tear down a storage-only CloudLink resource group does not remove the machine groups from CloudLink Center.	None.
VXFM-26550	If you run the command **"powerflex_cli events quwery –session_token 98329575cf390107 –limit 2 –order timestamp.asc"** with wrong command flag **"quwery"**, the command fails with error "Error: unknown flag: –limit". This is the incorrect error message.	Run the command with the correct command flag: **"powerflex_cli events query –session_token 98329575cf390107 — limit 2 –order timestamp.asc"**
VXFM-26549	When using power_cli to query events with filter "severity in (MAJOR,MINOR)" it fails with a parsing error. This error occurs because the "in" operator does not exist in the CLI.	The same query can be achieved by running the query a few times, once for each value in the "in" clause.
VXFM-26476	When using the REST API to query event history, if there is an error in the filter field, the filter is ignored, and the unfiltered list is returned instead of an error message.	Correct your query and run it again.
VXFM-25895	PowerFlex Manager is unable to configure a Dell OS10 switch for deployment.	None.

Issue ID	Symptom	Recommended action
VXFM-25284	While creating a snapshot rule, you need to provide the time of day. By default, the value that is populated on this field is current time in EST. However, internally, the snapshot rule is created with the value in UTC. This may lead to confusion as snapshots are not getting created as expected.	None.
SCI-67737	If the generate_ login _certificate scli command is executed without parameters, it will fail.	Run the command with a single known parameter (scli –generate_ login_ certificate –username for example) or use the full help request scli –help — generate _login _certificate.

Operating system known issues and limitations

This section lists known issues and limitations for specific operating systems.

Issue number & SR number	Problem summary	Workaround
VXFV-360	The device name appears incorrectly as a non- PCI device instead of iDRAC, but the current and baseline versions are accurate (6.00.30.201 to 6.00.30.202, respectively).	Dell recommends upgrading the OME catalog to the latest version.
	PowerFlex nodes running CPLD 1.0.7 stop responding during Power On Self-Test (POST) when upgrading to certain RCM or IC packages that include BIOS 1.8.2 and iDRAC 6.00.30.202.	Before upgrading to the latest version of PowerFlex, ensure that the PowerFlex nodes are running CPLD 1.0.8 or later. For details, see **https://www.dell.com/support/ kbdoc/en-us/000205925**.
VXFV-296	Mixing the Mellanox CX-6 100GbE NIC driver with the Broadcom PCIe/OCP 25GbE NIC driver is not supported.	Remove the bnxt_en driver and install the Mellanox driver.
VXFV-283	iDRAC support for "Prepare for Removal" on PowerEdge R650/R6525/R750/ nodes fails.	NVMe hot-swap on Linux operating systems is supported. Skip the Prepare for Removal step in iDRAC.
VXFV-265	During execution of the command create- namespace with 4k alignment on RHEL 8.4, the following error is encountered: **Warning:** namespace0.0 unable to validate alignment	This is a false notification. The command result is as expected, and the resulting DAX device can be used with PowerFlex acceleration devices.
VXFV-243	Upgrade of a RedHat-based operating system to RHEL 8.3 fails if the node contains NVDIMMs. This is due to a known issue on RHEL 8.3: **https://access.redhat.com/documentation/ en-us/red_hat_enterprise_linux/8/html-single/ 8.3_release_notes/index#known-issue_installer- and-image-creation**	Follow the procedures described in "RHEL/ CentOS upgrade to version 8.3" in the .

Resolved issues in 4.5

Resolved issues are defects that exist in the previous release but are resolved in the 4.5 release of PowerFlex and PowerFlex Manager.

Issue ID	Symptom
VXFM-35527	When a Node is scaled up using the scaled-up CentOS as a duplicate, the SVM OS Type under SVM OS Settings is a duplicate.
VXFM-35157	After a one-time migration, the MDS gateway moved to a critical state with the error "MDM_CONNECTION_LOST, in the MDM cluster/PowerFlex gateway".
VXFM-35132	SDC installation for ESXi base installation fails when there are multiple ingress instances and ESXi management is not the first ingress that is defined on the cluster.

VXFM-34878	On completion of a successful NDU on the Resource group, the nodes are compliant but the Gateway moves to critical state and alert messages are displayed.
VXFM-34612	The 4.0.2 software catalog does not have SLES 15 SP4 in it, so upgrades performed through the user interface for that operating system do not work.
VXFM-34284	Many pods fail after an increase in inventory and, some containers restart at regular intervals even after a long time since the failure.
VXFM-31193	After a nondisruptive upgrade completes on a storage-only resource group, the Tie Breaker node compliance state is in 'Pending Upgrade', even though the upgrade completed successfully. The state is reported incorrectly in the user interface.
VXFM-31191	If the CIFS password begins with a special character, such as a dollar sign ($), a restore to an existing cluster may fail.
VXFM-31185	If you attempt to perform a CSV deployment in the user interface without loading the MDM RPM, the deployment fails with an unhelpful message. The error should indicate that the MDM RPM is missing.
VXFM-31179	If you try to delete a hyperconverged resource group, the teardown operation does not delete the vCenter cluster. Also, the wizard for deleting the resource group does not show the checkbox that allows you to delete the cluster and remove it from vCenter.
VXFM-30889	When removing a resource group, you do not have the option to choose whether resources should be left in a managed or unmanaged state. Instead, PowerFlex Manager automatically leaves the nodes in a managed state.
VXFM-30624	After performing a new resource group deployment, PowerFlex Manager shows a node with an update failed status, but the deployment was successful. This status is incorrect, since no update was performed.
VXFM-29795	When importing a version 3.6 PowerFlex cluster to PowerFlex Manager, you may see that when the MDM primary node was changed, the certificate was not approved before. Therefore, the user is not recognized and the import cannot be done.
VXFM-29543	The management workflow to allow swapping primary and backup nodes has not been added to the restricted operations after a NAS server has entered into an out-of-service state. 1. This situation might occur in the following scenario 2. You make a NAS storage pool full. 3. The NAS server on the storage pool becomes read-only. 4. You try to move the NAS server (this operation is prohibited.) 5. You try to perform a swap of the NAS server (this operation is successful). This issue has no visible impact on file service operations.
VXFM-29381	The **Summary** page of the **Initial Configuration** wizard remains static for 30 seconds while PowerFlex Manager is enabling SupportAssist.
VXFM-29294	The dashboard I/O performance numbers do not correlate with I/O performance numbers reported by SCLI.

Issue ID	Symptom
VXFM-28034	If you create volumes on the **Block** page, volume creation is cancelled when you switch away from this page. Volume creation should be continued in the background. Instead, volume creation is stopped and there is no progress or completion status when the **Block** page is opened again.
VXFM-27967	The **View Details** page for Cisco switches shows a blank page and no metrics.

Environment and system requirements

This section provides information on the contents of the PowerFlex 4.5 software packages.

Download location

- The PowerFlex complete software package, containing most of the packages listed below, can be downloaded from the following location:
  https://www.dell.com/support/home/en-us/product-support/product/scaleio/overview
- The RCM for PowerFlex rack can be downloaded from the following location

PowerFlex rack RCM software

Packages

Package name	Size	Contents
PFMP bundle	~19.2 GB	PFMP2-4.5.0-1189.tgz
RCM for PowerFlex rack	~24.6 GB	Flex_RCM_3_7_3_0_r31.zip
Intelligent catalog for PowerFlex appliance	~23.4 GB	Intelligent_Catalog_45_373_00_r31.zip
Software-only ZIP	~5.9 GB	Software_Only_Complete_4.5.0.0_287.zip. Includes the following • PowerFlex_4.5.0.0_287_Complete_Core_SW.zip (3.4 GB) • PowerFlex_4.5.0.0_287_SDCs_for_manual _insta ll.zip – SDC RPMs (0.6 GB) • PowerFlex_Software_4.5.0.0_287_r1.zip – software-only catalog (1.9 GB)
Compatibility file		cm-20230901.gpg (compatibility file)
PowerFlex Manager OVA ZIP	~24.5 GB	PowerFlex_Manager_4.5.0-1189.zip • PFMP2-4.5.0-1189.ova (PFMP _Installer for installing Kubernetes cluster) (23 GB) • pfmp-k8s-153L-20230809.ova (Kubernetes OVA) (2.3 GB)

Where to get help

The Dell Technologies support site contains important information about products and services, including drivers, installation packages, product documentation, knowledgebase articles, and advisories.
A valid support contract and account might be required to access all of the available information about a specific Dell Technologies product or service.

Documents / Resources

[DELL PowerFlex Defined Storage Software](#) [pdf] User Guide
PowerFlex Defined Storage Software, Defined Storage Software, Storage Software, Software

References

- 🎩 **[8.3 Release Notes Red Hat Enterprise Linux 8 | Red Hat Customer Portal](#)**
- 🛡 **[RCM](#)**
- 💻 **[Submit Form](#)**
- 💻 **[Support | Dell US](#)**
- 💻 **[15G PowerFlex Family running CPLD 1.0.7 can hang during POST when updating to BIOS 1.8.2 and iDRAC 6.00.30.202 | Dell US](#)**
- 💻 **[Dell PowerFlex Software - Technical Documentation | Dell US](#)**
- 💻 **[Sign In | Dell US](#)**
- **[User Manual](#)**