



**Hewlett Packard**  
Enterprise

# **HPE LeftHand OS Version 12.6 Release Notes**

Part Number: AX696-96447  
Published: April 2017  
Edition: 6

# Contents

<b>Release Notes.....</b>	<b>4</b>
Description.....	4
Platforms supported for this release.....	4
Update recommendation.....	4
Supersedes information.....	5
Languages.....	5
Enhancements.....	5
Fixes.....	6
12.5 Patch Set 01.....	6
12.0 patch fixes included in 12.6.....	6
Patches supported with 12.6 .....	7
Prerequisites.....	7
System requirements.....	8
Upgrading the SAN.....	9
Supported upgrade paths.....	9
Compatibility/interoperability.....	10
Cross-version compatibility for Remote Copy, the CLI, and the Application Aware Snapshot Manager .....	10
SRA and Site Recovery Manager compatibility.....	11
Mixed LeftHand OS software versions in management groups.....	11
Using Space Reclamation.....	12
Workarounds.....	12
Configuration Interface.....	12
Fibre Channel.....	12
HPE StoreVirtual Centralized Management Console.....	12
HPE StoreVirtual DSM for Microsoft Windows MPIO.....	13
HPE StoreVirtual LeftHand OS Command Line Interface.....	13
HPE StoreVirtual MEM for VMware.....	14
HPE StoreVirtual SRA.....	14
HPE StoreVirtual VSA.....	14
Hardware and platforms.....	15
Installation and upgrades.....	15
Networking.....	16
Notifications and alerts.....	17
Snapshots.....	17
Linux upgrade issue (6.6/6.7 to 7.0).....	17
Option 1: Create new StoreVirtual VSA and swap storage.....	18
Option 2: Chassis swap.....	18
Related information.....	19
Support contacts.....	19
Documentation feedback.....	19

## Notices

The information contained herein is subject to change without notice. The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein.

Confidential computer software. Valid license from Hewlett Packard Enterprise required for possession, use, or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Links to third-party websites take you outside the Hewlett Packard Enterprise website. Hewlett Packard Enterprise has no control over and is not responsible for information outside the Hewlett Packard Enterprise website.

# Release Notes

## Description

These release notes describe Version 12.6 software for the HPE StoreVirtual Storage product, which contains the following components:

- HPE LeftHand OS Software Version 12.6.00.0155
- HPE StoreVirtual Centralized Management Console Version 12.6.00.0155
- HPE StoreVirtual LeftHand OS Command Line Interface (CLI) Version 12.6.0.81
- HPE StoreVirtual REST API Version 1.3
- HPE StoreVirtual VSA 2014 for VMware vSphere, StoreVirtual VSA 2014 for Microsoft Hyper-V, and StoreVirtual VSA 2014 for KVM Version 12.6.00.0155
- HPE StoreVirtual Failover Manager for VMware vSphere, StoreVirtual Failover Manager for Microsoft Hyper-V, and StoreVirtual Failover Manager for KVM software Version 12.6.00.0155
- HPE StoreVirtual Application Aware Snapshot Manager Version 12.6.0.65
- HPE StoreVirtual DSM for Microsoft Windows MPIO Version 12.6.0.56 (installs Microsoft certified DSM driver Version 12.6.0.48)
- HPE StoreVirtual Multi-Path Extension Module (MEM) for vSphere Version 12.6.0.20
- HPE StoreVirtual Recovery Manager Version 1.6.0.128
- HPE StoreVirtual Storage Replication Adapter (SRA) 2.0 Version 12.6.0.48
- HPE LeftHand SNMP MIBs Version 12.6.00.0155

These release notes are current as of the published date.

## Platforms supported for this release

---

### NOTE:

P4000 G2 platforms (P4900 G2, P4800 G2, P4500 G2, and P4300 G2) are not supported with Version 12.6.

---

- HPE StoreVirtual VSA 2014 for VMware vSphere
- HPE StoreVirtual VSA 2014 for Microsoft Hyper-V
- HPE StoreVirtual VSA 2014 for KVM
- HPE StoreVirtual 4335
- HPE StoreVirtual 4730
- HPE StoreVirtual 4730 FC
- HPE StoreVirtual 4630
- HPE StoreVirtual 4530
- HPE StoreVirtual 4330
- HPE StoreVirtual 4330 FC
- HPE StoreVirtual 4130

## Update recommendation

Hewlett Packard Enterprise recommends that all customers running an earlier version of software upgrade to Version 12.6.

As a best practice, Hewlett Packard Enterprise recommends upgrading software during times of non-peak activity to minimize any potential application impact.

# Supersedes information

Version 12.6 supersedes all previous versions on StoreVirtual 4000 Storage and StoreVirtual VSA (2014).

---

## NOTE:

As of June 30, 2015, software upgrades are not supported on legacy VSA versions (P4000 VSA, LeftHand VSA, StoreVirtual VSA). See the customer notice *HP LeftHand, HP P4000 and HP StoreVirtual VSA Software - End of Life Announcement (c04301581)* for more information.

---

## Languages

Version 12.6 software supports the following languages:

- English
  - Simplified Chinese
  - Japanese
  - Korean
  - Spanish
- 

## NOTE:

The client version of the CLI is localized. The on-system CLI and the storage system Configuration Interface are not localized.

---

## Enhancements

Version 12.6 includes the following enhancements:

- Hewlett-Packard Enterprise branding has been made to the software and documentation.
- Support for the Windows 2016 initiator has been added for StoreVirtual DSM for Microsoft Windows MPIO.
- Support for VMware ESX initiator 6.5 has been added for HPE StoreVirtual Multi-path Extension Module (MEM) for vSphere.
- Support for HPE Recovery Manager Central (RMC) and RMC-V, which enables application-consistent and crash-consistent snapshots for backup and recovery, has been added for the StoreVirtual product line. For more information, see the RMC documentation in the Hewlett Packard Enterprise Information Library:  
<http://www.hpe.com/storage/rmc/docs>
- HPE StoreVirtual VSA KVM for Red Hat Enterprise Linux 6.7, 7.0, CentOS 6.7, 7.0, and Ubuntu 14.04. See [Linux upgrade issue \(6.6/6.7 to 7.0\)](#) on page 17 for upgrade information.
- The Network Diagnostics utility, which provides ping, traceroute, and IPERF functions to collect diagnostics, was added. In the CMC, select **Diagnostics > Network Diagnostics** from the Node menu.
- The `createSnapshotSet` and `rollBackVolume` action object models were added to the REST API. The `createManagementGroup` API was also added.
- If an upgrade fails, you can now restart the upgrade without assistance from Hewlett Packard Enterprise Support. The upgrade partition is automatically unmounted if the storage system is unreachable. If there is an unrecoverable error, a message displays instructing you to restart each affected storage system.
- The jumbo frame option has been re-enabled for StoreVirtual VSAs.
- If a volume gets into the Unrecoverable IO state, support personnel now have the ability to clear this volume state by overwriting the affected pages or blocks with zeros. This may help in certain data recovery scenarios.
- A new event has been added to the CMC to track retransmit rates over network ports. If the retransmit rate exceeds 0.5%, an event is generated. Increased retransmit rates can affect network performance.

- Continuous code improvements throughout 12.x versions to fix memory leaks.
- The minimum recurrence for snapshot schedules is now 15 minutes (previously, it was 30 minutes). The information in the "Scheduling snapshots" section of the *HPE StoreVirtual Storage User Guide* still indicates 30 minutes. This will be changed in a future update.

## Fixes

- The Maintain storage-system site relationship option has been documented in the "Upgrading the storage systems in a cluster using cluster swap" section in the *HPE StoreVirtual Storage User Guide*.
- The "Enabling Space Reclamation" section in the *HPE StoreVirtual Storage User Guide* was updated to include the step to disconnect and reconnect volumes in the management group that are connected to a Windows server.

## 12.5 Patch Set 01

The following fixes in 12.5 Patch Set 01 are included in Version 12.6.

### LeftHand OS

- Updated the logging interval for latency issues from 60 minutes to 15 minutes. This change enables support personnel to better pinpoint details of the issue.
- Configuring RAID for a storage system now completes successfully. Previously, an error message about insufficient memory would display even though sufficient memory was available.
- Fixed an issue that caused all logging to stop after upgrading to LeftHand OS v12.5.
- Upgrading to LeftHand OS v12.5 in Remote Copy configurations now completes successfully. Occasionally, the upgrade would fail and cause the storage system to unexpectedly shut down.
- Fixed an issue with the `conrep` utility that was preventing it from running. This utility is used by Hewlett Packard Enterprise Support only for managing hardware replacements.

### Application Aware Snapshot Manager

- The localized online help for Application Aware Snapshot Manager is included in this patch.
- When using Application Aware Snapshot Manager to create a snapshot of an ESX cluster that is managed by vCenter Server Appliance on a Linux server, the snapshot is now created successfully. Previously, snapshot creation would fail.
- Debugging logs for Application Aware Snapshot Manager is now enabled on Microsoft Hyper-V hosts. Previously, when debugging was attempted, the Authentication Console displayed the following error message: Exception has been thrown by the target of an invocation.

### Centralized Management Console

- The localized online help for the Centralized Management Console is included in this patch.
- After creating a new network and moving the LeftHand OS interface to that network, the active paths are displayed correctly in the CMC for the cluster and the volume.

### SCVMM

- The LUN details now display correctly in the SCVMM interface.
- On the Create LUN screen, the option to select thin or thick provisioned volumes is now displaying correctly.
- The value for SAN Copy Capable on the SAN volume template now remains YES after a refresh. Previously, the value would change to NO.

## 12.0 patch fixes included in 12.6

Patch 50001 – This patch resolves an issue in which the LeftHand OS 12.0 CMC does not display the correct iLO firmware version after upgrading to iLO version 2.03.

Patch 50003 – This patch fixes the issue of setting the frame size when the NIC used on the VSA system is an E1000 (Intel 82545EM Gigabit) Ethernet NIC.

Patch 50011 – This patch fixes an issue with a subset of volumes going offline when rebalancing occurs after upgrading to LeftHand OS v12.0.

Patch 50012 – This patch fixes an issue with data corruption that may occur on a remote volume when copying from a RAID5 or RAID6 volume and the primary source is down.

Patch 50013 - The HP Health and SNMP agents have been upgraded to resolve the issue of persistent group reservations taking significant time (7-60 minutes) to be set during the LeftHand OS v10.5 upgrade. This issue caused volumes to become inaccessible during the upgrade.

Patch 50014 - This patch fixes an issue in which NICs are disabled when the bond is deleted after rebooting the system.

## Patches supported with 12.6

---

**NOTE:**

Although these patches are supported with 12.6, the individual patch release notes may not specifically list 12.6 support.

---

- 10059-12 (Remote Copy patch)
- 10111
- 10118
- 10125
- 10126
- 10128
- 10129
- 10133
- 10138
- 10171-02
- 10173
- 10175
- 10176-02
- 10177 (localization patch)
- 10178
- 10179
- 10181
- 10183

## Prerequisites

The patches listed are prerequisites for upgrading to 12.6 and they are installed automatically through the Online Upgrade feature. Firmware patches are only installed if necessary for your hardware. See **Installation and upgrades** on page 15 for information about workarounds for firmware and hardware upgrades.

**Table 1: Prerequisite patches for upgrading**

Patch	Description
10147	Ensures that any patch or LeftHand OS upgrade applied after version 10.5 is successful. Only installable on 10.5 systems and required for any upgrades from 10.5.
10184	This patch updates the iLO 2 firmware to version 2.27 on P4000 G2 systems.

*Table Continued*

Patch	Description
10185	This patch updates the iLO 3 firmware to version 1.82 on the P4800 G2 system.
10186	This patch updates the iLO 4 firmware to version 2.10 on HPE StoreVirtual 4x3x systems.
30528	This patch updates the Emulex 10 GbE NIC firmware to version 10.2.477.10 and driver to version 10.2.477.6. Only installable on 10.5 systems and required for any upgrades from 10.5.
45012	This patch updates the Emulex 10 GbE NIC firmware to version 10.2.477.10 and driver to version 10.2.477.6. Only installable on 11.5 systems and required for any upgrades from 11.5.
50002	This patch updates the Emulex 10 GbE NIC firmware to version 10.2.477.10 and driver to version 10.2.477.6. Only installable on 12.0 systems and required for any upgrades from 12.0.

Hewlett Packard Enterprise recommends upgrading firmware before upgrading to Version 12.6. Firmware upgrades require rebooting the storage systems. Completing required firmware upgrades first ensures that the Version 12.6 upgrade is accomplished more quickly. Review the HPE Single Point of Connectivity Knowledge (SPOCK) website for firmware updates at <https://www.hpe.com/storage/spock>.

## System requirements

### HPE StoreVirtual Centralized Management Console (CMC)

- For the CMC complete installation, 35 MB disk space and 50 MB RAM during runtime
- Minimum monitor resolution for the CMC is 1024 x 600

### Microsoft System Center Virtual Machine Manager (SCVMM) 2012 SP1

Integration is available on System Center Virtual Machine Manager 2012 SP1 running on Windows Server 2012. Hyper-V hosts in this configuration may run:

- Windows Server 2012

---

#### NOTE:

Windows Server 2012 R2 is not supported with SCVMM 2012 SP1.

---

### HPE StoreVirtual Application Aware Snapshot Manager

- Windows
  - Windows Server 2012
  - Windows Server 2012 R2
  - Windows Server 2012 R2 Core
  - Microsoft .NET 3.5 or later
- VMware
  - vSphere 5.0 and 5.1
  - vSphere 5.5
  - vSphere 6.0

### HPE StoreVirtual DSM for Microsoft Windows MPIO

- Windows Server 2012
- Windows Server 2012 R2
- Windows Server 2016 (initiator support only)

### HPE StoreVirtual LeftHand OS Command Line Interface (CLI)



- 10 MB available space
- Windows Vista
- Windows 7
- Windows Server 2012
- Windows Server 2012 R2

#### **HPE StoreVirtual Recovery Manager**

- Microsoft .NET 3.5 or later on the installer client
- SAN/iQ Version 9.5 or LeftHand OS Versions 10.x or later

#### **HPE StoreVirtual Storage Replication Adapter (SRA)**

- Microsoft .NET 3.5 or later
- SAN/iQ Version 9.5 or LeftHand OS Versions 10.x or later
- VMware® vCenter Server® Site Recovery Manager® version 5.0.1 or later, 5.1 or later, 5.5, 5.8, 6.0, 6.1
- Site Recovery Manager running on two sites

#### **HPE StoreVirtual VSA**

- Windows Server
  - Windows Server 2012
  - Windows Server 2012 R2
- VMware vSphere
  - vSphere 5.0, 5.1, and 5.5
  - vSphere 6.0
- Linux (KVM)
  - CentOS 6.6, 6.7, 7.0
  - Red Hat Enterprise Linux 6.6, 6.7, 7.0
  - Ubuntu 14.04

## **Upgrading the SAN**

Automatic Online Upgrades are supported in Version 10.5 or later. See the StoreVirtual Storage upgrade guide for more information.

### **Supported upgrade paths**

Direct upgrades to Version 12.6 can be performed from the following released versions:

- Version 12.5
- Version 12.0
- Version 11.5

Upgrading a management group from 10.5 to 12.6 requires two upgrades. Upgrade to 12.5 first, and then upgrade to 12.6. Use the Online Upgrades feature to complete the upgrade.

#### **Procedure**

1. When prompted by the CMC to upgrade first to Version 12.5, select the option to upgrade to the applicable version, including applicable patches.  
Wait for the upgrade to complete.
2. There are increased memory requirements for the StoreVirtual VSA in Version 11.x, as listed in the *HPE StoreVirtual Storage VSA Installation and Configuration Guide*. If you are upgrading from 11.5, ensure that you increase the memory in the StoreVirtual VSAs before upgrading to Version 12.6.
3. Select the option to upgrade to Version 12.6, including applicable patches.

Wait for the upgrade to complete.

When finished, the system will be running Version 12.6.

## Compatibility/interoperability

For a complete list of supported LeftHand OS software releases and application software compatibility, including for the Failover Manager, Microsoft Windows Server, and VMware vSphere, see the StoreVirtual Compatibility Matrix, which is located at <http://www.hpe.com/info/StoreVirtualcompatibility>.

HPE Insight Remote Support 7.0.8 (with Content Level Update 1) supports LeftHand OS 12.6.

HPE Insight Control for VMware vCenter 7.2.3 or later is required for storage management in vCenter with management groups running LeftHand OS 12.6.

## Cross-version compatibility for Remote Copy, the CLI, and the Application Aware Snapshot Manager

**Table 2: Cross-version compatibility**

	LeftHand OS version <sup>1</sup>			
	9.5	10.5	11.x	12.x
<b>CLI</b>				
9.5	✓			
10.5	✓	✓	✓	✓
11.x	✓	✓	✓	✓
12.x	✓	✓	✓	✓
<b>Remote Copy<sup>2</sup></b>				
9.5				
10.5	✓	✓		
11.x	✓	✓	✓	✓
12.x	✓	✓	✓	✓
<b>Application Aware Snapshot Manager</b>				
9.5	✓			
10.5	✓	✓		
11.x	✓	✓	✓	✓
12.x	✓	✓	✓	✓

<sup>1</sup> See the StoreVirtual Compatibility Matrix for active LeftHand OS versions.

	<b>LeftHand OS version <sup>1</sup></b>
--	---

<sup>2</sup> When using Remote Copy with management groups running different versions of the LeftHand OS, the management group that is the destination for the remote copy must be running the later version. For example, a management group running version 10.5 can create a remote copy to a management group running 12.0. See the *HPE StoreVirtual Storage Upgrade Guide* for more information.

*Table Continued*

## SRA and Site Recovery Manager compatibility

**Table 3: StoreVirtual SRA and vCenter Site Recovery Manager compatibility**

VMware vCenter Site Recovery Manager version	HPE StoreVirtual Storage Replication Adapter <sup>1</sup>			
	9.5	10.5	11.x	12.x
5.0	✓			
5.0.1 or later		✓	✓	✓
5.1 or later	✓	✓	✓	✓
5.5		✓	✓	✓
5.8			✓	✓
6.0			✓	✓
6.1				✓

<sup>1</sup> If you run the HPE StoreVirtual SRA Version 11.x or 10.5 with Site Recovery Manager 5.0, the Recovery operation will not work and the Site Recovery Manager services on the recovery site will stop working. There is no way to make the Recovery operation work with Site Recovery Manager 5.0; this is a known issue in Site Recovery Manager 5.0 and was fixed by VMware in Site Recovery Manager 5.0.1. You must uninstall the Site Recovery Manager and the StoreVirtual SRA on both the protected and recovery sites, and then install the Site Recovery Manager Version 5.0.1 or Version 5.1 and the supported StoreVirtual SRA Version (11.x or 10.5).

## Mixed LeftHand OS software versions in management groups

StoreVirtual Storage management groups can accommodate storage systems that are running different versions of the LeftHand OS software. However, you can only add storage systems that are running a greater software version to a management group that is running an earlier software version. Storage systems with LeftHand OS 12.6 can join management groups running LeftHand OS versions 12.5, 12.0, and 11.5. Storage systems with LeftHand OS 12.6 cannot join management groups running LeftHand OS versions 10.5 and earlier.

If you partially upgrade an StoreVirtual Storage management group, the management group continues to run at the earliest LeftHand OS version until all storage systems in the management group are upgraded. To determine the version of your management group, see the *HPE StoreVirtual Storage Upgrade Guide*.

## Using Space Reclamation

- Space Reclamation must be enabled manually after upgrading to Version 12.x.
- Ensure that your storage systems are running normally after upgrading and before enabling Space Reclamation. Once Space Reclamation is enabled, you cannot downgrade to earlier versions of the LeftHand OS.
- Space Reclamation increases the memory utilization of the LeftHand OS. StoreVirtual VSAs may require additional memory allocation to use Space Reclamation.

Information about Space Reclamation is available in the *HPE StoreVirtual Storage User Guide* and the *HPE StoreVirtual Storage Online Help*.

## Workarounds

### Configuration Interface

- **Remove a storage system via the Configuration Interface only under specific circumstances**

The "Using the Configuration Interface" chapter in the *HPE StoreVirtual Storage User Guide* includes a procedure about how to remove a storage system from a management group. However, it is not specified in the procedure that you should only use the Configuration Interface to perform this procedure if you cannot log in to or communicate with the storage system using the CMC.

### Fibre Channel

- **After rebooting a storage system, volumes do not immediately display as mounted in the CMC**

When viewing the Servers category, Volume and Snapshots tab, the Active Connection status of volumes reflected in the CMC may take approximately 10 seconds to update following the reboot of a Fibre Channel storage system.

- **Set boot from SAN using the Emulex HBA**

To use boot from SAN with the Emulex HBA, use Emulex OneCommand and set the boot LUN to 5.

- **For a Fibre Channel volume, the Performance Monitor reports 0.0 for the first volume statistics when a second volume is created and mounted on the same server**

This happens because the path of first volume gets changed when the second volume is mounted, so the Performance Monitor displays 0.0 for the older path. To solve this issue, remove the older path and add the new path of the first volume to see the correct performance values.

- **Windows Server 2012 Hyper-V cluster shows disk errors on the active node during scheduled application-managed snapshots when using Fibre Channel**

The snapshot process quiesces the volume, then takes the snapshot, then mounts the snapshot using Fibre Channel, then unmounts the snapshot. Unmounting the snapshot breaks the Fibre Channel connection, and this sometimes generates MPIO and disk errors in the Windows Event log. You can ignore these errors. The snapshot completed successfully.

### HPE StoreVirtual Centralized Management Console

- **The CMC does not work properly with management groups if the configuration is changed using another user interface while the CMC is open**

When changing a management group's configuration (such as adding a node) using a user interface other than the CMC, ensure that the StoreVirtual CMC user interface is closed while making the change. Otherwise, you must either restart the CMC or find the nodes again to ensure the CMC works properly with the affected management group.

- **Incorrect volume information displayed in the CMC after storage system is brought back online**

After bringing a storage system back online after a scheduled shutdown, the CMC may display volume information for a different volume in the same management group but in a different cluster. To resolve this issue, close and re-open the CMC.

- **Active Directory user credentials fail login on a Version 11.0 node in a mixed-version management group**

This issue will occur when the management group contains nodes running Versions 10.x and 11.0. To resolve this issue, upgrade all nodes in the management group to Version 11.5 or later.

- **When a node is added to a two-node system configured with Quorum Witness, the NFS file share used for Quorum Witness is deleted without warning**

Per design, the addition of a third node eliminates the need for Quorum Witness and the Quorum Witness file share is automatically deleted. However, no warning is displayed to advise of the deletion.

- **Snapshot schedules which were paused for upgrade to 12.x did not resume after the upgrade finished**

In some circumstances, snapshot schedules may not resume after upgrading to Version 12.x and applying patches. To resolve this issue, manually resume the snapshot schedules.

- **The CMC displays an error message when changing settings in a management group or storage system**

When performing any operation that modifies settings for a storage system or a management group in the CMC, the following message may display:

```
Unable to get email settings because of CIM or management gateway issue
```

Click **OK** to close the message. The operation you are performing will complete successfully.

- **Volume and snapshot status in a management group does not change to unavailable when the evaluation period expires**

When the evaluation license period for a management group expires, you will no longer have access to volumes in the management group. However, the volume and snapshot status will still display as online. The events for license expiration have changed to Warning (at 60 days) and Critical (at 15 days) to notify you that the license is going to expire. To avoid losing access to volumes, be sure to install a permanent license before the evaluation license expires.

## HPE StoreVirtual DSM for Microsoft Windows MPIO

- **Installing the Version 12.x StoreVirtual DSM on a Microsoft Cluster Node configured for Fibre Channel may cause the failover cluster instance to become inaccessible**

Due to an issue with the Microsoft DSM, when installing the StoreVirtual DSM, and after the required reboot of the storage system, the Fibre Channel-configured Microsoft failover cluster cannot be discovered, opened, or managed.

To resolve this issue, uninstall the StoreVirtual DSM and rediscover the Microsoft cluster instance. In some cases, the Microsoft cluster may not be discoverable, and may have to be reconfigured.

## HPE StoreVirtual LeftHand OS Command Line Interface

- **If an invalid volume name is entered when issuing the createVolume command, the error message does not clearly explain the issue**

When this issue occurs, the error message that displays is "Unexpected Error", which does not clarify the problem. A more descriptive error message will be displayed in a future release.

- **If an invalid cluster name is entered when issuing the createCluster command, the error message does not clearly explain the issue**

When this issue occurs, the error message that displays is "Unexpected Error", which does not clarify the problem. A more descriptive error message will be displayed in a future release.

- **A disassociated Active Directory user can still execute CLI commands**

After a user is removed from an Active Directory group, the user can still successfully execute CLI commands. To resolve this issue, perform one of the following actions:

- Run the `getnsminfo` command using five different user names (either Active Directory or local). This flushes the disassociated Active Directory user name out of the cache. You must repeat this step on each node in the management group.
- Reboot the entire management group.
- **The `getGroupInfo` command displays incomplete data when split networking is enabled**

The `getGroupInfo` command displays information about the LeftHand OS network and the iSCSI network, but not the management network. For complete information, use the `getNSMInfo` command.

## HPE StoreVirtual MEM for VMware

- **After removing a VSA from a cluster containing VSAs, the CMC shows a failed MEM session for a volume that is connected to an ESXi server**

To resolve this issue, perform a rescan on the ESXi server. The failed MEM session may continue to display for up to one hour in the CMC (Sessions tab) but it will eventually be removed.

- **When presenting 256 StoreVirtual volumes to ESXi hosts, some volumes do not get all data paths**

This is a VMware ESXi issue that occurs because the ESXi host is unable to set chap settings. As a result, LeftHand OS fails the connection with an authorization error. The StoreVirtual MEM will display the following information in the SMLog.log file when this issue occurs:

```
ESXi/var/log/SMLog.log cmd is esxcli iscsi adapter target portal auth chap set -
A=vmhba37 -a=10.23.65.170:13849 --authname=__mpio_chap_name --
secret=52ce04fe8d49b344 --level=required --name=iqn.2003-10.com.lefthandnet CHAP
setup ESXCLI cmd failed retrying with LOCALCLI retryct 1
```

## HPE StoreVirtual SRA

- **SRA tasks (test, failover, reprotect) fail if a volume name within the management group contains special characters**

If you plan to use the Storage Replication Adapter, ensure that all volume names do not contain special characters, which include:

```
! @ # $ % ^ & * ( )
```

- **Recovery fails due to management group not having enough space**

During site failover/failback, the volume is automatically converted from RAID 5 to RAID 10. If the volume does not have enough space for RAID 10, the Recovery task fails. To avoid this issue, ensure that the cluster has enough space for the conversion to RAID 10.

## HPE StoreVirtual VSA

- **If using a distributed switch, StoreVirtual VSA for VMware vSphere installer displays the error `Unusable network encountered`**

The StoreVirtual VSA for VMware vSphere Installer does not support distributed switches and will not display a distributed switch as an option. To resolve this issue, set up a standard switch before deploying a StoreVirtual VSA for vSphere. Select the standard switch while deploying the StoreVirtual VSA for vSphere installer.

- **When using StoreVirtual VSAs, creating a management group with the wizard, and selecting `Create Volume on the Create Management Group wizard`, the CMC reports `Insufficient Space to Make Requested Change`**

Skip volume creation during the wizard. Create volumes after the management group and cluster are created.

- **During performance load testing, the StoreVirtual VSA for Hyper-V becomes unresponsive due to network congestion**

This issue affects Windows Server 2012 and 2012 R2. To resolve this issue, configure the StoreVirtual VSAs as follows:

1. Update the Windows Server 2012 R2 operating system with all current fixes.
2. Disable Chimney Offload:

```
netsh int tcp set global chimney=disabled
```

3. Disable Windows auto-tuning:

```
netsh int tcp set global autotuninglevel=disabled
```

4. Set the number of TCP connections as follows:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\TCPIP\ Parameters  
TcpNumConnections 16777214
```

5. Set the TCP ACK frequency:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\  
Interfaces\{Interface GUID}* TcpAckFrequency 1
```

6. Disable Virtual Machine Queue (VMQ) for all network interfaces, including 10 GbE:

```
Set-NetAdapterVmq -Name "Ethernet" -Enabled 0
```

```
Set-NetAdapterVmq -Name "Ethernet 2" -Enabled 0
```

7. To verify VMQ was disabled, run the following command:

```
Get-NetAdapterVmq
```

## Hardware and platforms

- **In the HPE StoreVirtual 4730, when two drives are unavailable and the hot spare is rebuilding, the Device status is not reported properly on the RAID Setup tab in the CMC**

The status remains at 0% *estimating*. However, you can see the updated RAID rebuilding status, with the percentage completed and estimated time remaining, on the storage system Hardware Information tab.

- **Failed drive status in StoreVirtual 4730 shows as Hot spare down, Off or removed**

When a drive is removed in an StoreVirtual 4730, that drive status is incorrectly reported as *Hot spare down, Off or removed*. However, the hot spare drive status is either active or rebuilding against the failed drive at that point in time. The removed drive is the only drive that is off or removed.

## Installation and upgrades

- **Registering a storage system using Import License Keys fails with an incomplete error message**

When using the Import License Key feature, if the license key file contains an incorrectly formatted license key, an error message appears stating, *The following license key file does not match the feature key of any system*. The error message does not describe the requirements for properly formatted license keys. The error message will be improved in a future release.

The license key information includes the required file name format and optional characters for tracking purposes as follows:

- Required—The file name format must contain the storage system MAC address using only upper case alphanumeric characters (for example, 00.15.5D.D4.F5.04.dat).
- Optional—Additional file name characters may be added by the StoreVirtual administrator to help manage or track feature key usage (for example, DatacenterB\_Rack3\_00.15.5D.D4.F5.04.dat).
- **On RHEL 6.6–32 bit, upgrading the CMC from 11.5 to 12.0 using Online Upgrade does not use the custom CMC installed path**

While upgrading the CMC, if it is installed into a custom directory, for example `C:\Users\Administrator\Desktop\UI`, the installer does not select that custom directory for the upgrade. The installer wizard presents the default directory in the **Choose Install Folder** window. You must navigate to the custom directory to have the CMC upgraded into the existing location.

- **During the online upgrade from 10.5 to 11.x or later, if the storage system encounters an error such as a disk failure, and is powered off after the second stage of the upgrade has started on the storage system, the storage system becomes unavailable and the CMC becomes unresponsive**

Stop the CMC using the Windows Task Manager. Contact Hewlett Packard Enterprise Support for assistance with the storage system issue.

- **The Hewlett Packard Enterprise Support Alerts window in the installer wizard uses incorrect characters and font set for Japanese**

This issue only occurs on the Hewlett Packard Enterprise Support Alerts page. You can use the CMC without any other font issues.

- **Uninstalling the CMC from a Linux server does not remove the HPE\StoreVirtual folder**

The uninstallation is still successful. You can manually delete the HPE\StoreVirtual folder if needed.

## Networking

- **If you create a bonded interface on the primary site while Remote Copy is occurring, the routing information for the bond will be deleted**

After creating the bond, enter the routing information and Remote Copy will work successfully.

- **The CMC allows a storage system or VSA to be added when its LeftHand OS network interface is on a different subnet than the management group's LeftHand OS network interface**

Prior to adding a node to a management group, ensure that the traffic type of its network interface is configured the same as other nodes in the management group. If this issue occurs, use the Configuration Interface to do one of the following:

- Configure the IP addresses correctly.
- Remove the node from the management group, configure the node's IP addresses correctly, and then add it to the management group again.
- **When deleting the ALB bond on a storage system that has been upgraded from 9.5 to 11.5, both NIC ports become disabled**

The ports lose the assigned IP addresses and the CMC cannot find the storage system. To resolve this issue, log in to the Configuration Interface using iLO or KVM solution (Keyboard, Video, Mouse), or connect to the StoreVirtual VSA using Hyper-V Manager or vSphere Client and reassign the IP addresses to the storage system interfaces.

- **10 GB NIC status in TCP status shows failed after changing the NIC Flow Control settings**

Do not configure the flow control or speed settings on 10 GB network interface cards. If you attempt to change the setting, the change does not take effect.

---

### NOTE:

The default flow control setting on rack mount storage systems is off. The default flow control setting on blade storage systems is on.

---

To recover from this situation, call Hewlett Packard Enterprise Support for assistance.



## Notifications and alerts

- **The email alarm does not clear when a DNS server is fixed or comes back online**

The following warning may display when the system attempts to send an email alert:

```
EID_GLOBAL_CONFIG_MISCONFIGURED: The 'Email' configuration status is 'Misconfigured'.
```

If DNS and the email server are unavailable briefly, the email configuration is deleted. When DNS and the email server become available again, this message displays because the email configuration no longer exists. You must reconfigure the email configuration to stop this warning message and begin receiving email alerts again.

## Snapshots

- **An application-managed snapshot cannot be taken when Symantec BackUp Exec is simultaneously running on the server where the volumes are mounted**

If this issue occurs, the CMC will indicate that a point-in-time snapshot should be taken. When Symantec BackUp Exec has completed the backup, you can successfully take an application-managed snapshot. As a best practice, ensure that application-managed snapshots are not scheduled or taken at the same time a backup is being performed.

- **When a remote snapshot schedule is first created, the Remote Snapshot Details window displays "N/A" for Completion Time and "Never" for Next Occurrence**

This issue only occurs when the schedule is created. To resolve the issue:

1. In the CMC, select the applicable volume.
2. Select the **Schedules** tab and then select the affected schedule.
3. Select **Schedule Details** and then select **Edit Schedule**.
4. No actual changes need to be made. Click **OK**.

The schedule details should now display correctly.

- **Creating an application-managed snapshot of a Fibre Channel volume generates an error**

When creating application-managed snapshots for a Fibre Channel volume, make sure to include the IQN of the server name using the CMC. Otherwise, you may receive an error message from the VSS Provider that the volume arrival is taking too long.

- **Incorrect Windows support listed in the Application Aware Snapshot Manager deployment guide and online help**

In the "Supported versions of Microsoft Windows Server" section, support for Microsoft Windows Server 2008 versions is incorrectly listed. Windows Server 2008 support is dropped in LeftHand OS 12.6. The correct information is listed in **System requirements** on page 8 of this document. The deployment guide and online help will be corrected in a future update.

## Linux upgrade issue (6.6/6.7 to 7.0)

If you attempt to upgrade the KVM host server from Linux version 6.6 or 6.7 to version 7.0, the upgrade will fail and may leave the system in an unrecoverable state. This applies to Red Hat Enterprise Linux and CentOS. Although version 7.0 is the first major Red Hat release to support in-place upgrades from a previous 6.x version and despite following the steps in the following article, upgrading to 7.0 does not work.

<https://access.redhat.com/solutions/637583>

Hewlett Packard Enterprise is investigating this issue with Red Hat. In the interim, you should not attempt to upgrade the KVM host server from version 6.6 or 6.7 to version 7.0 for either Red Hat Enterprise Linux or CentOS.

The following options are available as workarounds. Advantages and disadvantages for each option are also listed.

- Option 1: Create a new StoreVirtual VSA for KVM using Linux version 7.0 and then swap the storage with the existing StoreVirtual VSA
  - Advantage: Data availability throughout the operation without interruption.
  - Disadvantages: An additional server and a temporary license for the server are required. You will also need to work with Support to obtain new licenses.
- Option 2: Perform a chassis swap
  - Advantage: The time normally consumed for a restripe is saved. This is the preferred option.
  - Disadvantages: Data will be unavailable during the chassis swap.

## Option 1: Create new StoreVirtual VSA and swap storage

### Procedure

1. Install a new RHEL or CentOS 7.0 server.
2. Install the 12.6 StoreVirtual VSA for KVM on the Linux server.
3. Make sure that the size of the new StoreVirtual VSA is the same or greater than the existing StoreVirtual VSA (running on a Linux server with version 6.x).
4. Swap the StoreVirtual VSAs in the cluster:
  - a. Add the storage systems being swapped to the management group that contains the cluster.
  - b. Select the cluster in the navigation window.
  - c. Click **Cluster Tasks**, and select **Edit Cluster > Swap Storage Systems**.
  - d. To review the list of available storage systems along with the storage systems that are in the cluster, click **View Storage System Details**.
  - e. In the **Swap Cluster Storage Systems** window, for each storage system being replaced in the left column, select an available storage system from the list in the right column.
  - f. Repeat the process for each storage system to be swapped.
  - g. Click **Swap Storage Systems** when you are finished.

---

#### NOTE:

The swap operation may take some time, depending upon the number of storage systems swapped and the amount of data being restriped.

---

## Option 2: Chassis swap

### Procedure

1. Deploy a StoreVirtual VSA for KVM (called KVM VSA1 in this procedure).
2. Install the license.
3. Create a management group, cluster, and volumes with or without other nodes.
4. Power off KVM VSA1 and remove the data disks.
5. Install a new StoreVirtual VSA for KVM (called KVM VSA2 in this procedure) on the backup server running RHEL or CentOS 7.0 with a single, minimum-sized data disk.
6. Power off KVM VSA2.
7. Remove and delete the new data disk.
8. Assign the original data disks (disk of KVM VSA1) to KVM VSA2.
9. Set the IP address of KVM VSA2 to the IP address used for KVM VSA1.
10. Power on KVM VSA2.
11. Verify that KVM VSA2 rejoins the management group.

## Related information

The latest StoreVirtual documentation is available at:

- HPESC: <http://www.hpe.com/support/StoreVirtualManuals>
- Storage Information Library: <http://www.hpe.com/info/storage/docs>

For additional information, see the following StoreVirtual white papers:

- StoreVirtual Storage VSA design and configuration guide: <http://www8.hp.com/h20195/v2/GetDocument.aspx?docname=4AA4-8440ENW>
- Configuring StorVirtual Storage with Microsoft Windows Server: <http://www8.hp.com/h20195/v2/getDocument.aspx?docname=4AA2-5502ENW>
- StoreVirtual Storage with VMware vSphere: Design considerations and best practices: <http://www8.hp.com/h20195/v2/GetDocument.aspx?docname=4AA3-6918ENW>
- StoreVirtual Storage: Network design considerations and best practices: <http://www8.hp.com/h20195/v2/GetDocument.aspx?docname=4AA2-5615ENW>

## Support contacts

Telephone numbers for worldwide technical support are listed on the Hewlett Packard Enterprise Support Center: <http://www.hpe.com/support>

Receive support alerts announcing product support communications, driver updates, software releases, firmware updates, and customer replaceable component information, in your e-mail by signing up at:

[www.hpe.com/support/e-updates](http://www.hpe.com/support/e-updates)

To change options for support alerts you already receive, click the link to **Sign in** on the right.

## Documentation feedback

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, send any errors, suggestions, or comments to Documentation Feedback ([docsfeedback@hpe.com](mailto:docsfeedback@hpe.com)).

When submitting your feedback, include the document title, part number, edition, and publication date located on the front cover of the document. For online help content, include the product name, product version, help edition, and publication date located on the legal notices page.