Dell EMC VxFlex Ready Node

Upgrade Guide

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DELL EMC

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Preface

As part of an effort to improve its product lines, Dell EMC periodically releases revisions of its software and hardware. Therefore, some functions described in this document might not be supported by all versions of the software or hardware currently in use. The product release notes provide the most up-to-date information on product features.

Contact your Dell EMC technical support professional if a product does not function properly or does not function as described in this document.

Note

This document was accurate at publication time. Go to Dell EMC Online Support (https://support.emc.com) to ensure that you are using the latest version of this document.

Previous versions of Dell EMC VxFlex OS were marketed under the name Dell EMC ScaleIO.

Similarly, previous versions of Dell EMC VxFlex Ready Node were marketed under the name Dell EMC ScaleIO Ready Node.

References to the old names in the product, documentation, or software, etc. will change over time.

Note

Software and technical aspects apply equally, regardless of the branding of the product.

Related documentation

The release notes for your version includes the latest information for your product.

The following Dell EMC publication sets provide information about your VxFlex OS or VxFlex Ready Node product:

- VxFlex OS software (downloadable as VxFlex OS Software <version> Documentation set)
- VxFlex Ready Node with AMS (downloadable as VxFlex Ready Node with AMS Documentation set)
- VxFlex Ready Node no AMS (downloadable as VxFlex Ready Node no AMS Documentation set)
- VxRack Node 100 Series (downloadable as VxRack Node 100 Series Documentation set)

You can download the release notes, the document sets, and other related documentation from Dell EMC Online Support.

Typographical conventions

Dell EMC uses the following type style conventions in this document:

Bold	Used for names of interface elements, such as names of windows, dialog boxes, buttons, fields, tab names, key names, and menu paths (what the user specifically selects or clicks)

Italic	Used for full titles of publications referenced in text
`Monospace`	Used for: • System code • System output, such as an error message or script • Pathnames, filenames, prompts, and syntax • Commands and options
Monospace italic	Used for variables
`Monospace bold`	Used for user input
[ ]	Square brackets enclose optional values
|	Vertical bar indicates alternate selections - the bar means “or”
{ }	Braces enclose content that the user must specify, such as x or y or z
...	Ellipses indicate nonessential information omitted from the example

Where to get help

Dell EMC support, product, and licensing information can be obtained as follows:

Product information

For documentation, release notes, software updates, or information about Dell EMC products, go to Dell EMC Online Support at https://support.emc.com.

Technical support

Go to Dell EMC Online Support and click Service Center. You will see several options for contacting Dell EMC Technical Support. Note that to open a service request, you must have a valid support agreement. Contact your Dell EMC sales representative for details about obtaining a valid support agreement or with questions about your account.

Your comments

Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Send your opinions of this document to techpubcomments@emc.com.

CHAPTER 1

Overview

This document describes how to upgrade a VxFlex Ready Node system.

Supported base versions:

- v2.0.1.x
- v2.5

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Upgrading overview

Upgrade VxFlex Ready Node to the latest version.

The non-disruptive operation can upgrade the following components:

- VxFlex OS components (MDM and TieBreaker, SDS, SDC, LIA, and RFcache)
- DAS Cache (for upgrading v2.0.1.4 or v2.5 ESXi-based systems using DAS Cache, follow the recommended steps in the appendix of this guide)
- Operating system patches
- VxFlex OS GUI and AMS
- BMC (iDRAC)
- Node firmware (Storage controller, NIC, disk—see your system's deployment guide for a full list of firmware packages)
- BIOS

Upgrades (including OS updates) can be performed from the VxFlex OS GUI, the AMS CLI, or the REST API. Upgrade files are provided via a TAR file, which also includes an XML file that orchestrates the upgrade process.

When upgrading a pre-v2.6 system to VxFlex Ready Node v2.6 or later, you must replace all SVMs in the VxFlex Ready Node system. Previous versions of SVM were SLES 11.3-based, and the features of this version of VxFlex Ready Node require a SLES 12.2-based SVM.

Note

To upgrade, use the TAR file, exactly as received from Dell EMC. Editing the file may prevent the upgrading from succeeding.

All VxFlex Ready Node software and hypervisor upgrades (including security patches) in the AMS environment must be orchestrated by AMS.

Upgrades performed using any method other than AMS may impact the AMS management capabilities in general, and orchestrated upgrades in particular.

Follow VxFlex Ready Node AMS documentation for available upgrade paths. Should a required path be missing, contact Customer Support.

The upgrade includes the following phases:

1. Upgrade the AMS.

   Note

   If the AMS is running on a VM, and the virtual nic is of type e1000 vmnic, it may cause upgrade failures. Therefore, change the AMS vmnic configuration to vmxnet3 before commencing the upgrade.

   ---

2. Upgrade the VxFlex OS GUI to the same version as the AMS (when upgrading with the VxFlex OS GUI).
3. Cluster upgrade.
   - Upgrade the LIA and cluster components on all MDM cluster nodes (MDM and TB).
4. Cluster nodes upgrade:

- Upgrade the rest of the necessary (SDS and SDC) files on MDM cluster nodes.
- Upgrade the LIA and all other files (SDS and SDC) on other system nodes, one node at a time.

As nodes are upgraded, they are displayed at different stages of the upgrade process in the **Upgrade** window.

5. After VxFlex Ready Node is upgraded, you must replace the SVMs:
   - Upload OVA.
   - Replace the SVMs.

Before the upgrade begins, it validates the following issues:

- The capacity on all SDS nodes is healthy.
- The MDM cluster is in normal state.
- For ESXi nodes:
  - DRS status, if the ESX hosts are clustered.
  - Configuration of vCenter.
  - Connection of vCenter.
  - Cluster HA admission control is disabled.
- All SDS nodes are connected.
- The MDM packages are available, in case of the need to roll back the upgrade.
- The upgrade TAR has been uploaded.
- Availability of enough spare capacity to ensure data availability during the upgrade on all Storage Pools.
- All Storage Pools are enabled for rebuild.
- All nodes have completed deployment.

Note

DRS uses VMware vMotion. For details on how to configure vMotion for use with VxFlex Ready Node, see Best practices for using VMware vMotion on page 24.

Note

In order to perform the upgrade with an LDAP user, the LDAP user must be assigned the following VxFlex OS roles:

- monitor_role_dn
- backend_config_role_dn

Note

Dell EMC is aware of the side-channel analysis vulnerabilities (also known as Meltdown and Spectre) affecting many modern microprocessors that were publicly described by a team of security researchers on January 3, 2018. We encourage customers to review the Security Advisories in the References section at the following location for more information.
http://www.dell.com/support/article/uk/en/ukbsdt1/sln308588/microprocessor-side-channel-vulnerabilities-cve-2017-5715-cve-2017-5753-cve-2017-5754-impact-on-dell-emc-products-dell-enterprise-servers-storage-and-networking-?lang=en

- AMS deployments include the patches by default.
- Upgrade to version 2.6 via AMS includes the security patching.

CHAPTER 2

Upgrade the VxFlex Ready Node Software Components

This section describes how to upgrade the software components of a VxFlex Ready Node system. Topics include:

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Before you begin to upgrade a VxFlex Ready Node system

Before you begin to upgrade a VxFlex Ready Node system, ensure that the following issues are addressed:

- Ensure that you have administrator access to the management client being used to perform the upgrade.
- Ensure that there are no failed disks (failed capacity).
- Verify that the cluster state is not degraded.
- Ensure that all data NICS are connected.
- Download and save the TAR file, available from Online Support. Use the TAR file, exactly as downloaded. Editing the file may prevent the upgrading from succeeding.

  Note

  All VxFlex OS software and hypervisor upgrades (including security patches) in the AMS environment must be orchestrated by AMS.

  Upgrades performed using any method other than AMS may impact the AMS management capabilities in general, and orchestrated upgrades in particular.

  Follow VxFlex Ready Node AMS documentation for available upgrade paths. Should a required path be missing, contact VxFlex OS support.

- Ensure that vMotion is connected and configured: that there is a vMotion network configured in the vMware cluster, that all networks are connected, and that virtual machines can migrate between hosts.
- If there are non-Storage VMs (not being used by VxFlex Ready Node) on the ESX hosts to be upgraded, you may migrate them, or shut them down, before, or during the upgrade.

  Note

  If the ESX is part of a cluster on which HA/DRS is enabled, the non-Storage VMs will be migrated automatically. To enable the servers to enter maintenance mode, ensure that Admission Control is disabled. For more information, see "Disable VMware Admission Control."

- In order to replace the existing Storage VMs, you must have at least four ESXi nodes, including three cluster members and one standby node. If you don't have an ESXi node with a standby role, perform Workaround when there is no standby node before replacing SVMs on page 26.

Upgrade using the VxFlex OS GUI

Use the VxFlex OS GUI to run the upgrade process.

Before you begin

Ensure that all of the prerequisites described in the "Before you begin" section are completed before beginning the upgrade process.

Note

If the AMS is running on a VM, and the virtual nic is of type e1000 vmnic, it may cause upgrade failures. Therefore, change the AMS vmnic configuration to vmxnet3 before commencing the upgrade.

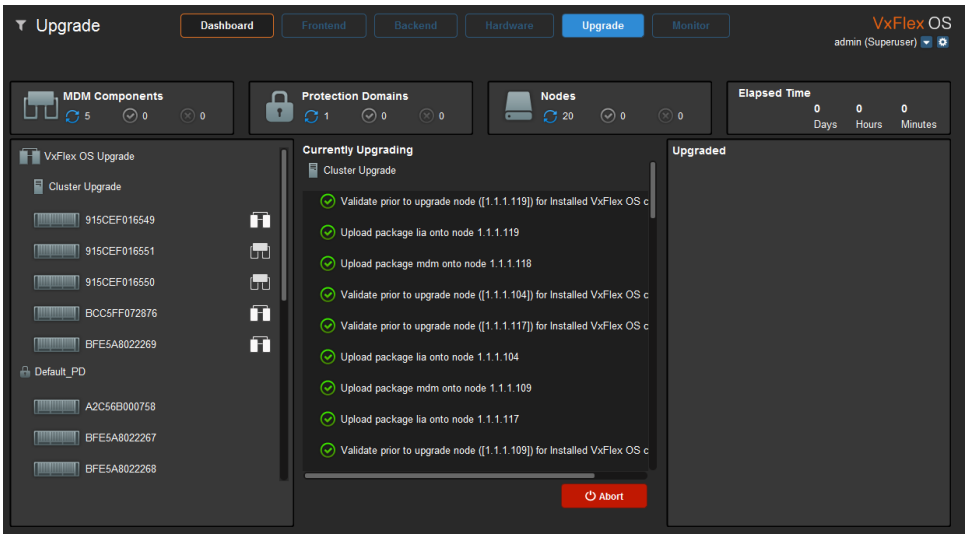
Procedure

1. Upgrade the VxFlex OS GUI and the AMS:

VxFlex OS Component	Package name
GUI	Run this file: `EMC-ScaleIO-gui-2.6-<build>.X.msi`
AMS	Run one of these files: • `rpm -U EMC-ScaleIO-ams-2.6-<build>.x86_64.rpm` • `EMC-ScaleIO-ams-2.6-<build>-x64.msi`

   The VxFlex OS GUI and AMS may be on separate servers. Upgrade each on the respective server.

2. Log in to the upgraded VxFlex OS GUI.
3. From the **System Settings** drop-down, select **Upgrade**.
   The **Start Upgrade** window is displayed. The **Validation Status** section displays the status of various parts of the pre-upgraded system. The **Newest Version in Repository** section displays the version of the newest files in the repository.
4. To upload a TAR file, click in the **Package** field to browse to the TAR file, then click **Upload**.
   When the upload completes, the file versions in the **Newest Version in Repository** section represent the most recent file versions in the repository, as extracted from the upload TAR file.
5. By default, the host security patches (Spectre/Meltdown) are installed and enabled. To disable them, clear **Install Host Security**.
6. To initiate the upgrade, click **OK**.
   The **Start Upgrade** window is closed, and the **Upgrade** window is displayed:



The first phase is the cluster upgrade, during which the LIA and cluster components are upgraded on the nodes in the MDM cluster.

The steps are displayed in the **Currently Upgrading** section. As steps are completed, their status is updated.

When the cluster upgrade is complete, the first of the nodes begins the cluster nodes upgrade phase. If a node does not have any components that require upgrading, that node will not be displayed in the upgrade process.

Note

During the cluster nodes upgrade phase, you may need to intervene to enable the ESX to enter maintenance mode. If this is necessary, a message is displayed in the **Upgrade** window. For more information, see Upgrade requires ESX to enter maintenance mode on page 23.

As each node is upgraded, it is displayed in the **Upgraded** section, and the next node is displayed in the **Current Upgrading** section.

When the upgrade is complete, a "finished" message is displayed.

7. Click **Close**.

After you finish

- Ensure that the MDM packages were upgraded to the new version (should match the same version of the other components). If not, run the upgrade process again.
- When upgrading a pre-v2.6 system to VxFlex Ready Node v2.6 or later, you must replace all SVMs in the VxFlex Ready Node system.

Replace the Storage virtual machines using the VxFlex OS GUI

Use the VxFlex OS GUI to replace the existing Storage VMs (SVMs) with new ones.

Before you begin

Ensure the following:

- The VxFlex OS GUI and AMS have been upgraded to v2.6.
- You have credentials for an admin user for the VxFlex OS GUI and AMS.
- You know the location of the `Replace_SVM.tar` file for this version.

When upgrading a pre-v2.6 system to VxFlex OS v2.6 or later, you must replace all SVMs in VxFlex OS.

Procedure

1. Log in to the VxFlex OS GUI.
2. From the **System Settings** menu, click **Upload and Deploy OVA**.
3. Click in the **Package** field, then browse to the location of the OVA file to upload.
4. Click **Upload**.

   The SVM deployment process begins on all SVMs, in parallel.
5. When the process is complete, click **Close**.
6. From the **System Settings** menu, click **Replace SVMs**.
7. Ensure that all conditions are met, then click **OK**.

This process may take 1-2 minutes per node. Allow it to continue - uninterrupted - until it is all complete.

8. When all steps are complete, click **Close**.

Results

The SVMs have been replaced. The upgrade process is complete.

Upgrade a VxFlex Ready Node system - AMS CLI

Use the AMS CLI to run the upgrade process.

Before you begin

Ensure that all of the prerequisites described in the "Before you begin" section are completed before beginning the upgrade process.

AMS CLI commands are described fully in the *VxFlex Ready Node CLI Reference Guide*. This section describes the upgrade process.

Procedure

1. Upgrade the AMS. You can upgrade the VxFlex OS GUI, too (optional).

VxFlex OS Component	Package name
GUI	Run this file: `EMC-ScaleIO-gui-2.6-<build>.X.msi`
AMS	Run one of these files: • `rpm -U EMC-ScaleIO-ams-2.6-<build>.x86_64.rpm` • `EMC-ScaleIO-ams-2.6-<build>-x64.msi`

The VxFlex OS GUI and AMS may be on separate servers. Upgrade each on the respective server.

2. Upload the upgrade TAR file:

```
--upload_upgrade_tar
```

Example:

```
java -jar EMC-ScaleIO-ams-cli-2.6-<build>-X.<build>.jar --
upload_upgrade_tar <file path>
```

3. Start the upgrade:

```
--upgrade_start
```

Example:

```
java -jar EMC-ScaleIO-ams-cli-2.6-<build>-X.<build>.jar --
upgrade_start
```

Note

By default, the host security patches (Spectre/Meltdown) are installed and enabled. To disable them, add the `--install_all_packages` flag to this command.

4. You can query the status of an on-going upgrade process using the `--upgrade_task_status` command:

   Example:

```
java -jar EMC-ScaleIO-ams-cli-2.6-<build>-X.<build>.jar --
upgrade_task_status
```

Results

The system is upgraded.

After you finish

- Ensure that the MDM packages were upgraded to the new version (should match the same version of the other components). If not, run the upgrade process again.
- When upgrading a pre-v2.6 system to VxFlex Ready Node v2.6 or later, you must replace all SVMs in the VxFlex Ready Node system.

Replace the Storage virtual machines - AMS CLI

Use the AMS CLI to replace the existing Storage VMs (SVMs) with new ones.

Before you begin

Ensure the following:

- The AMS has been upgraded to v2.6. If you use the VxFlex OS GUI, upgrade that, too.
- You have credentials for an admin user for the VxFlex OS GUI and AMS.
- You know the location of the `Replace_SVM.tar` file for this version.

When upgrading a pre-v2.6 system to VxFlex OS v2.6 or later, you must replace all SVMs in VxFlex OS.

Procedure

1. Upload the upgrade TAR file:

   If this file was just uploaded, you can skip to the next step.

```
--upload_upgrade_tar <file path>
```

Example:

```
java -jar EMC-ScaleIO-ams-cli-2.6-<build>-X.<build>.jar --
upload_upgrade_tar <file path>
```

2. Deploy the OVA:

```
--replace_svm_deploy_ova
```

Example:

```
java -jar EMC-ScaleIO-ams-cli-2.6-<build>-X.<build>.jar --
replace_svm_deploy_ova
```

You can check the status with this command:

```
--replace_svm_deploy_ova_status
```

3. Start the SVM replace process:

```
--replace_svm_start
```

Example:

```
java -jar EMC-ScaleIO-ams-cli-2.6-<build>-X.<build>.jar --
replace_svm_start
```

You can check the status with this command:

```
--replace_svm_task_status
```

Results

The SVMs have been replaced. The upgrade process is complete.

Upgrade a VxFlex Ready Node system - REST API

Use the REST API to run the upgrade process.

Before you begin

Ensure that all of the prerequisites described in the "Before you begin" section are completed before beginning the upgrade process.

REST API commands are described fully in the *VxFlex Ready Node REST API Reference Guide*. This section describes the upgrade process.

Procedure

1. Upgrade the AMS. You can upgrade the VxFlex OS GUI, too (optional).

VxFlex OS Component	Package name
GUI	Run this file: `EMC-ScaleIO-gui-2.6-<build>.X.msi`
AMS	Run one of these files: • `rpm -U EMC-ScaleIO-ams-2.6-<build>.x86_64.rpm` • `EMC-ScaleIO-ams-2.6-<build>-x64.msi`

The VxFlex OS GUI and AMS may be on separate servers. Upgrade each on the respective server.

2. Upload the TAR installation file:

```
/api/hardware/instances/System/action/uploadTar
```

```
curl -k -H "Content-Type: multipart/form-data" -F
"files=@test.tar" -u user:$tempToken -X POST https://AMS-IP:
443/api/hardware/instances/System/action/uploadTar
```

3. Start the upgrade process:

```
/api/instances/System/action/startUpgrade
```

```
curl -s -k -i -X POST -H "Content-Type:application/json" -u
admin:$TOKEN https://AMS-IP/api/hardware/instances/System/
action/startUpgrade -d ''
```

Note

By default, the host security patches (Spectre/Meltdown) are installed and enabled. To disable them, add the `applyAllOptionalPackageGroups` flag to this command.

4. To see how the upgrade is progressing, query the upgrade status:

```
/api/hardware/instances/System/action/taskStatus
```

```
curl -s -k -i -X POST -H "Content-Type:application/json" -u
admin:$TOKEN https://AMS-IP/api/hardware/instances/System/
action/upgradeStatus -d ''
```

Results

The system is upgraded.

After you finish

- Ensure that the MDM packages were upgraded to the new version (should match the same version of the other components). If not, run the upgrade process again.
- When upgrading a pre-v2.6 system to VxFlex Ready Node v2.6 or later, you must replace all SVMs in the VxFlex Ready Node system.

Replace the Storage virtual machines - REST API

Use the REST API to replace the existing Storage VMs (SVMs) with new ones.

Before you begin

Ensure the following:

- The AMS has been upgraded to v2.6. If you use the VxFlex OS GUI, upgrade that, too.
- You have credentials for an admin user for the VxFlex OS GUI and AMS.
- You know the location of the `Replace_SVM.tar` file for this version.

When upgrading a pre-v2.6 system to VxFlex OS v2.6 or later, you must replace all SVMs in VxFlex OS.

Procedure

1. Upload the upgrade TAR file:

   If this file was just uploaded, you can skip to the next step.

   ```
   /api/hardware/instances/System/action/uploadTar
   ```

   ```
   curl -k -H "Content-Type: multipart/form-data" -F
   "files=@test.tar" -u user:$tempToken -X POST https://AMS-IP:
   443/api/hardware/instances/System/action/uploadTar
   ```

2. Deploy the OVA:

   ```
   /api/hardware/instances/System/action/deployOvaStart
   ```

   ```
   curl -s -k -i -X POST -H "Content-Type:application/json" -u
   admin:$token https://AMS-IP/api/hardware/instances/System/
   action/deployOvaStart -d ''
   ```

3. Start the SVM replace process:

   ```
   /api/hardware/instances/System/action/startReplaceSvm
   ```

   ```
   curl -s -k -i -X POST -H "Content-Type:application/json" -u
   admin:$token https://AMS-IP/api/hardware/instances/System/
   action/startReplaceSvm -d ''
   ```

Results

The SVMs have been replaced. The upgrade process is complete.

2-layer architecture - Compute only manual SDC upgrade

You can manually upgrade the SDC on an ESXi host.

Procedure

1. Upgrade the SDC offline bundle:

   ```
   esxcli software vib install -d <full_path_to_offline_bundle>
   ```

   where *<full_path_to_offline_bundle>* is the full path to the `sdc-2.6-<build>.X-esx<version>.zip` file.

   Note

   The SDC offline ESXi 6.0 bundle is the same for all ESXi 6.x versions.

2. Reboot the ESX host.
3. Ensure that the driver is loaded:

   ```
   vmkload_mod -l | grep scini
   ```

   Output, similar to the following, indicates that the driver is loaded:

   ```
   scini 2 808
   ```

   The SDC component is installed on the ESXi host.

CHAPTER 3

VxFlex Ready Node Upgrade-Related tasks

This section describes tasks that may be needed as part of the upgrade of a VxFlex Ready Node system. Topics include:

- Disable VMware Admission Control 22
- Port usage and changing default ports 22
- Upgrade requires ESX to enter maintenance mode 23
- Best practices for using VMware vMotion 24
- Upgrading Java 25
- Workaround when there is no standby node before replacing SVMs 26

Disable VMware Admission Control

Enable ESXi servers to enter maintenance mode by disabling the VMware Admission Control feature.

Admission Control must be disabled before upgrading a VxFlex Ready Node system. If the ESXi cluster was configured by the VxFlex Ready Node Compute feature with HA enabled, this setting will be configured correctly automatically.
This procedure is relevant for administrators that create an ESXi cluster either not via the AMS orchestration, or via AMS but with HA disabled.

Procedure

1. Disable Admission Control:

Client	Procedure
vSphere Web Client	a. From the vSphere Web Client, log in to the vCenter. b. Select the cluster that contains the VxFlex Ready Nodes. c. Select the **Configure** tab. d. Select **Services** > **vSphere Availability**. e. At the bottom of the window, expand **Admission Control**, and ensure that it is **Disabled**.
vSphere Client	a. From the vSphere client, log in to the vCenter. b. Right-click a cluster that contains VxFlex Ready Nodes and select **Edit Settings**. c. Click the **vSphere HA** menu, and ensure that **Admission Control** is set to **Disable**.

Port usage and changing default ports

The following table lists the TCP ports that are used by VxFlex OS. Prior to installing or upgrading a system, ensure that these ports are not in use by other processes.

If they are in use, either free them or change them to another available port.

Table 1 Default ports

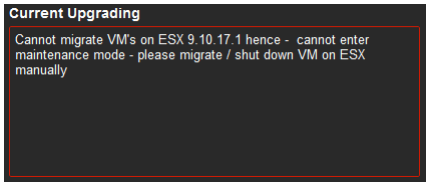
Port used by	Port #	Protocol	File to change	Field to modify (or to add, if it does not exist)	Notes
AMS and MDM listener	6611	Protobuf over TCP	**Note** Cannot be modified, and must be available		
MDM Cluster member	9011	Protobuf over TCP	`/opt/emc/scaleio/mdm/cfg/conf.txt`	`actor_cluster_port=`*<NEW_PORT>*	

Table 1 Default ports (continued)

Port used by	Port #	Protocol	File to change	Field to modify (or to add, if it does not exist)	Notes
SDS listener	7072	Proprietary protocol over TCP	`/opt/emc/scaleio/sds/cfg/conf.txt`	`tgt_port=`*<NEW_PORT>*	SDCs connect through this port for data communication and to the MDM for meta-data communication. When multiple SDSs are installed on the same physical server, use ports 7072+*x*, where *x* is the index of the SDS (for example, 70721, 70722).
LIA listener	9099	Protobuf over TCP	`/opt/emc/scaleio/lia/cfg/conf.txt`	`lia_port=`*<NEW_PORT>*	The VxFlex OS Installation Manager connects to the LIA to perform installation and maintenance-related operations.
SNMP	162	SNMP v2 over UDP			SNMP traps for system alerts are sent to a trap receiver via this port. The VxFlex OS Gateway sends messages to: snmp.traps_receiver_ip on the port snmp.port
SDBG for MDM (Manager)	25620				Used by VxFlex OS internal debugging tools to extract live information from the system for debugging purposes. When multiple SDSs are installed on the same physical server, use ports 2564+*x*, where *x* is the index of the SDS (for example, 25641, 25642).
SDBG for MDM (Tie Breaker)	25600				
SDBG for SDS	25640				
AMS (secure)	443		`AMS installation directory\conf\server.xml`	`redirectPort=`*<NEW_PORT>* `Connector port=`*<NEW_PORT>*	After changing the port, you must restart the VxFlex OS Gateway service/daemon: • Linux: Run `service scaleio-gateway restart` • Windows: Restart the VxFlex OS Gateway service
AMS (not secure)	80		`AMS installation directory\conf\server.xml`	`Connector port=`*<NEW_PORT>*	

Upgrade requires ESX to enter maintenance mode

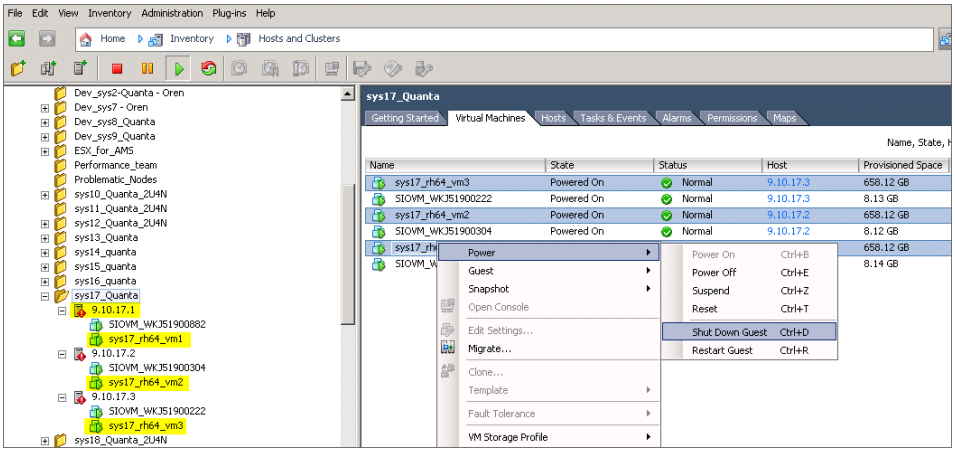
During the upgrade process, your ESX may require to enter maintenance mode. If this is the case, and if it cannot do so, a message, similar to the following is displayed:



To continue, perform the following:

Procedure

1. In the vCenter client, find the ESX that is identified in the message, in our example, 9.10.17.1.
2. From the Virtual Machines tab, shut down the non- (Storage VM) on all the hosts that are being upgraded:



3. The upgrade process will continue, on its own, after the VMs are shut down.

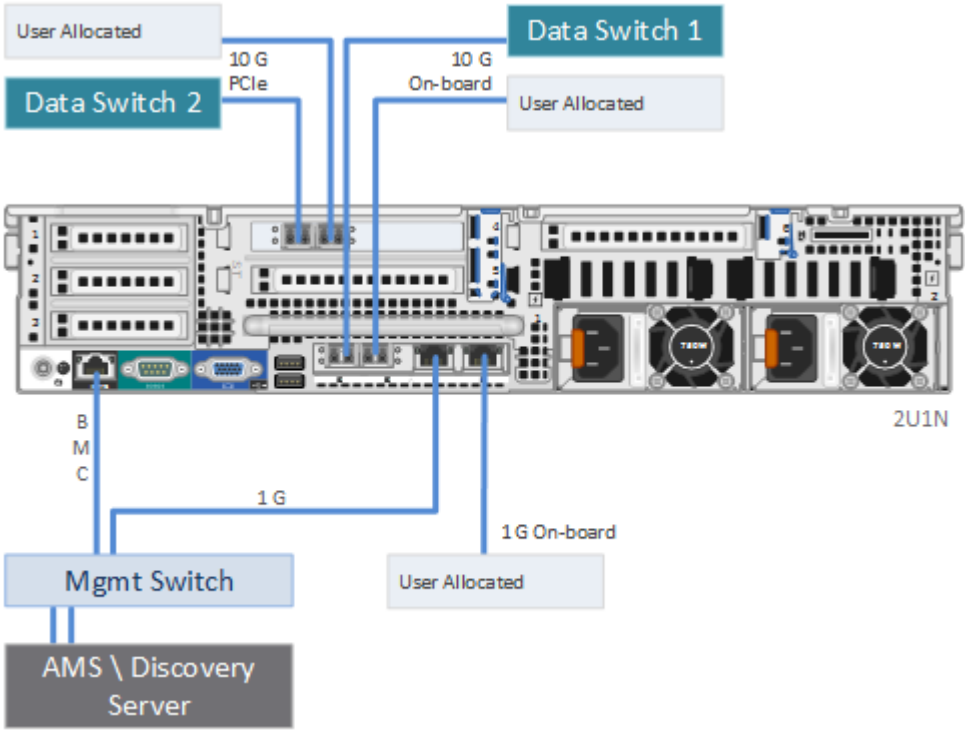
Best practices for using VMware vMotion

To use VMware vMotion, set the vMotion status to Enabled for every ESX.

The following ports can be used for vMotion on the ESX. The recommended priority indicates which ports VxFlex OS recommends be used in order to limit the impact on VxFlex OS performance:

Recommended priority	Port	Role	Performance impact
P1	1G port, right port onboard	Unused	None
P2	Bond option of both 1G ports together	AMS management network	May impact AMS management traffic (though negligibly in most cases)
P3	Client 10/25/100 GbE ports: 10/25/100 GbE right onboard and 10/25/100 GbE right on PCI-E slot	Customer network	May impact customer traffic
P4	1G management port, 1G left port onboard	AMS management network	Minimal impact to AMS management traffic

Figure 1 Network ports



Upgrading Java

Before changing the Java version of a node that is running the VxFlex OS Gateway or AMS of VxFlex OS v2.5 or later, you must prepare lockbox-related files.

The lockbox in VxFlex OS v2.5 saves files in the Java folder of the VxFlex OS Gateway and the AMS. These files need to be saved before any Java version update, then pasted back into the folder.

Procedure

1. From the `jre\lib\ext` (or `jre/lib/ext` for Windows) Java folder, copy these files to a different folder:
   - `commons-lang3-3.6.jar`
   - `cryptoj-6.2.3.jar`
2. Update the Java version.
3. Paste these files back to the folder from where you copied them.

Workaround when there is no standby node before replacing SVMs

If you don't have an available standby ESXi node, perform this workaround before replacing the Storage VMs.

Procedure

1. In the **Hardware** view, add a RHEL node as a standby node.
2. Replace one ESXi node with the RHEL node.
3. In the **Hardware** view, remove the standby node.
4. In the **Hardware** view, remove the standby package from the node.

After you finish

Replace the Storage VMs using either the VxFlex OS GUI, AMS CLI, or REST API.