

**Dell EMC**

# VxBlock™ Central Upgrade Guide

Document revision 1.0

December 2018

# Revision history

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Date	Document revision	Description of changes
December 2018	1.0	First release of Dell EMC VxBlock Central

# Contents

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# Introduction

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This document provides instructions for upgrading from Vision software versions 3.6.1 and 3.6.2 to Dell EMC VxBlock Central version 1.0.0. For any version older than Vision software version 3.6.1, you first have to upgrade to Vision software version 3.6.1.

Dell EMC VxBlock Central supports the following VxBlock Systems:

- VxBlock System 350
- VxBlock System 540
- VxBlock System 740
- VxBlock System 1000

The target audience for this document includes customers, internal teams working with customers, and professional services.

The [Glossary](#) provides terms, definitions, and acronyms that are related to VxBlock Systems.

# System requirements

System, software, and license requirements specify the minimum support that is required for the VMs.

The following table provides memory requirements, vCPUs, disk size, and license information:

Artifacts/Modules	Memory requirements (GB)	vCPU	Disk Size (GB)	Version	License Requirements
Core VM	8	2	200	1.0.0	Base
MSM VM	12	4	250	1.0.0	Base
MSP VM (optional)	1	2	350	1.0.0	Base
VxBlock Central Orchestration Services VM	4	2	100	1.0.0	Advanced
VxBlock Central Orchestration Workflows plug-in	NA	NA	NA	1.0.0	Advanced
VMware vRO (vRealize Orchestrator)	6	2	17	7.3.x	Included with VMware vSphere license
VxBlock Central Operations Management Pack	NA	NA	NA	1.0.0	Advanced plus
VMware vRealize Operations (vROps)	Follow the VMware guidelines.	NA	NA	6.6 and above	Separate VMware vROPs license required

The Core VM, MSM VM, and MSP VMs can be installed on AMP-2S with VNXe storage or AMP-3S with Dell EMC Unity storage or AMP-VX with vSAN storage.

The VxBlock Central Orchestration Services VM can be installed on AMP-3S with Dell EMC Unity storage or AMP-VX with vSAN storage

① **NOTE:** The unattended configuration tool can be used to configure AMP-2S on the following systems:

- VxBlock 350
- VxBlock 540
- VxBlock 740

## Software and License Requirements

Consider the following when deploying VxBlock Central:

- RAM size on the AMP must be greater than or equal to 128 GB. If the RAM is less than 128 GB, upgrade the AMP to a minimum of 128 GB of RAM. Contact Dell EMC Support for assistance when upgrading the AMP.
- Use the NFS mount from the storage array for the MSP VM, where available.
- For the AMPs, VNXe3100 and VNXe3150, use the local storage capacity. You can add storage (see Cisco documentation), but doing so might add downtime.

Depending on the VxBlock System, the Core VM, MSM VM, MSP VM and VxBlock Central Orchestration Services VM can be installed on either a logical or physical AMP as described in the following table:

<b>VxBlock System</b>	<b>Logical AMP</b>	<b>Physical AMP</b>	<b>AMP-VX</b>
VxBlock System 350	No	Yes	Yes
VxBlock System 540	No	Yes	Yes
VxBlock System 740	No	Yes	Yes
VxBlock System 1000	No	Yes	Yes

# Preparing to upgrade VxBlock Central

Complete the Core VM upgrade before upgrading the MSM VM.

## Upgrade overview

Upgrading enables you to install the most recent version of VxBlock Central or upgrade from Vision software version 3.6.1 and version 3.6.2 to VxBlock Central.

The upgrade process includes the following tasks:

- 1 Download the files that you need to perform the upgrade.
- 2 Install an upgrade bundle on each Core VM.

The upgrade bundle does the following:

- Applies security updates.
- Updates VxBlock Central, system library

- 3 Upgrade the compliance content on the Core VM and MSM VM
- 4 Install an upgrade bundle on each MSM VM

The upgrade bundle does the following:

- Applies security updates.
- Updates VxBlock Central.

- 5 Install an upgrade bundle on the MSP VM. The upgrade bundle applies security and VxBlock Central updates.

## Supported upgrade paths

Review the supported paths for upgrading VxBlock Central.

If the upgrade path you are looking for is not listed in the following tables then refer to previous versions of the *Vision Intelligent Operations Upgrade Guide* here: <https://cpsdocs.dellemc.com/>

<b>Supported upgrade paths</b>	<ul style="list-style-type: none"><li>• Vision software version 3.6.2 &gt; VxBlock Central version 1.0.0</li><li>• Vision software version 3.6.1 &gt; VxBlock Central version 1.0.0</li></ul>
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**Important:** For any version older than Vision software version 3.6.1, you first have to upgrade to Vision software version 3.6.1, then to VxBlock Central version 1.0.

## Upgrade steps - overview

This topic provides an overview of the steps to upgrade VxBlock Central Base. Refer to *Dell EMC VxBlock Central Installation Guide* to install VxBlock Central Advanced and Advanced Plus.

## Procedure

- 1 Take snapshots for all VMs deployed for Vision: Core VM, MSM VM, MSP VM.
- 2 If you have a single-site environment, it is recommended that you run the simplified one-step upgrade to upgrade Core VM, MSM VM, and MSP VM.

① | **NOTE:** If you have a multisite environment, upgrade manually.

## Downloading VxBlock Central upgrade files

To upgrade VxBlock Central, you must download the files required to upgrade the Core VM, MSM VM, and the MSP VM to the latest version of the software.

### Procedure

- 1 Download the following files from the Download Center for the Core VM and copy to the `/root` directory on the Core VM:

- `VxBlock-Central_core_upgrade-<buildnumber>.vce`

- 2 Download the following files from the Download Center for the MSM VM and copy to the `/root` directory on the MSM VM.

Download the `.tar` file to use simplified version of the VxBlock Central upgrade process. For more information see *VxBlock Central simplified upgrade*. See the Related Information at the end of this topic.

- `VxBlock-Central_msm_upgrade-<buildnumber>.vce`

- ZIP files with the latest version of the compliance content. From VxBlock Central version 1.0 onward, the RCM content and technical content are combined together. There are not two separate files.

- 3 Download the following file from the Download Center for the MSP VM upgrade:

- `VxBlock-Central_msp_upgrade-<buildnumber>.vce`

### Related information

[VxBlock Central simplified upgrade](#) (see page 39)

## Collecting the custom display names

In a single multisystem management (MSM) deployment, custom display names are not retained after an upgrade. Collect the custom display names before you upgrade so you can re-enter them after the upgrade completes. Custom display names are retained in a clustered environment.

### Procedure

Collect any custom display names defined for your existing installation.

## Post-upgrade steps - overview

This topic provides an overview of the post-upgrade steps.

### Procedure

- 1** Follow the Administration Guide for your VxBlock System to complete the following steps:
  - a** Register with Secure Remote Services (SRS) – with new the product **VCEVISION**.
  - b** Configure components for Real-Time Alerts.
- 2** Follow the online help guide to complete the following steps:
  - a** Create Alert Profiles.
  - b** Configure SMTP to receive Email Notification for Real-Time Alerts.
  - c** Configure SNMP to forward traps to any other NMS Server or any other SNMP trap receiver.
  - d** Upload Compliance Policy: Download latest compliance policy from Dell EMC Download Center.
  - e** Set RCM Base Profile and Risk Base Profile: Set RCM Base Profile and Risk Base Profile for each of the systems to run compliance against the specified Base Profile.
  - f** Set Compliance Scan Schedule (Default Schedule is set Every Monday at 2:00 AM GMT).
  - g** Set VxBlock Operations – Set up URLs for Workflow Configuration, vRealize Orchestration, and vRealize Operations instance.
  - h** Configure Active Directory and Roles: Configure Active Directory Setting and Configure Roles.

# Upgrading a VxBlock Central deployment

The steps required to upgrade VxBlock Central in a data center environment vary depending on whether you are using a single-site or multisite environment.

VxBlock Central contains a simplified upgrade process. It is recommend that you follow this process. See the *VxBlock Central simplified upgrade*.

After the VM cluster upgrade process begins:

- Do not add any Core VM nodes to MSM VMs in a cluster.
- Do not join any additional MSM VMs to an MSM cluster.

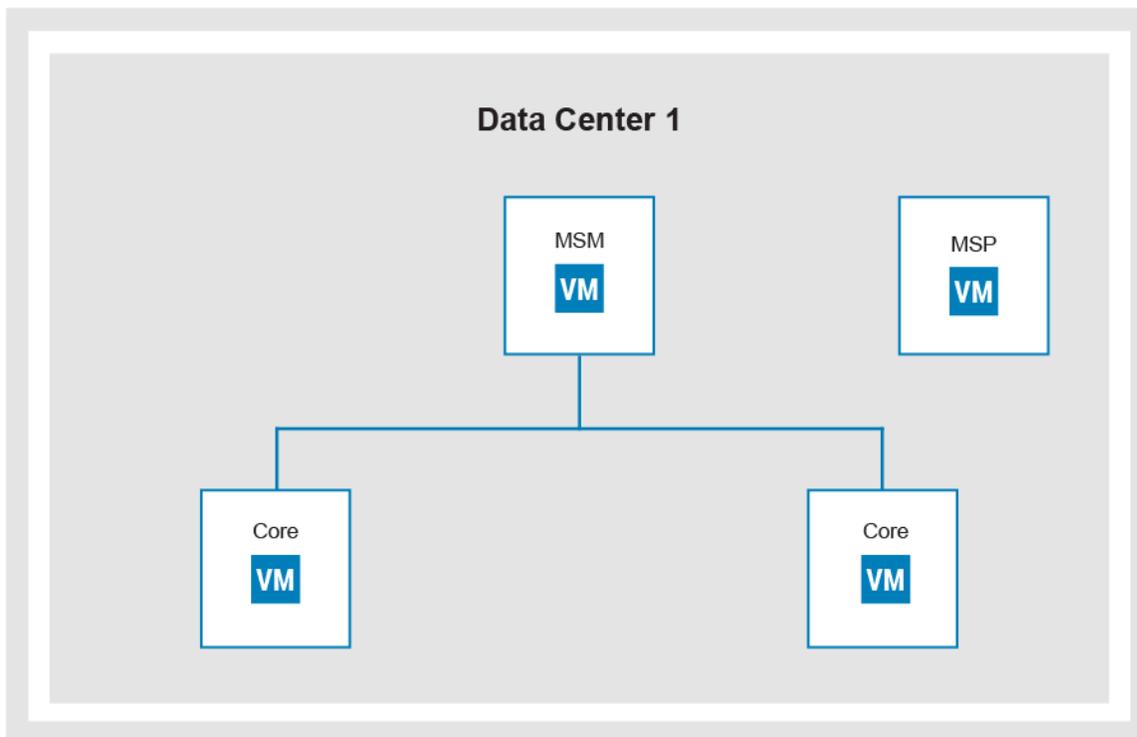
[Related information](#)

[VxBlock Central simplified upgrade](#) (see page 39)

## Upgrading a single MSM VM

Follow this process to upgrade one data center environment with multiple Core VMs mapped to a single MSM VM.

The following illustration is an example of what a single-site cluster might look like.



The following are high-level steps to upgrade a single-site cluster with a single MSM VM:

- 1 Take a snapshot of the VMs.

- 2 Configure the NTP server.
- 3 Upgrade each Core VM.
- 4 Upgrade the MSP VM.
- 5 Upgrade the MSM VM.
- 6 Remove the snapshots of the VMs.

## Taking a snapshot of VMs

Before upgrading, create a snapshot of each VM in the cluster. If you encounter problems during the upgrade process, you can use the snapshot to revert the VM.

### Procedure

- 1 Power off and take a snapshot of each Core VM being upgraded.  
 **NOTE:** Do not power on the Core VMs until snapshots have been taken of the other VMs.
- 2 Power off and take a snapshot of the MSP VM being upgraded.  
 **NOTE:** Do not power on the MSP VMs until snapshots have been taken of the other VMs.
- 3 Power off and take of snapshot of each MSM VM being upgraded.  
 **NOTE:** Do not power on the MSM VMs until snapshots have been taken of the other VMs.
- 4 Power on and log in to each Core VM associated with the MSM VM.
- 5 Power on and log in to the MSM VM.
- 6 Power on and log in to the MSP VM, if one is associated with the MSM VM.

### Related information

[Taking a snapshot of the Core VM](#) (see page 25)

[Taking a snapshot of the MSP VM](#) (see page 36)

[Taking a snapshot of the MSM VM](#) (see page 30)

## Verifying that the NTP server is configured on the VM

Ensure that each VM is configured to use an NTP server.

### Procedure

- 1 Check whether an NTP server is configured on each Core VM, MSP VM, and MSM VM.
- 2 Configure the NTP server if necessary.

[Related information](#)

[Configuring the VMs to use the NTP server](#) (see page 30)

## Upgrading a Core VM

Use this procedure to upgrade the Core VMs associated with the MSM VM in parallel.

**Procedure**

- 1 Start the Core VM upgrade.
- 2 Verify the Core VM upgrade.
- 3 Upgrade compliance content for the Core VM.

[Related information](#)

[Verifying a Core VM upgrade](#) (see page 28)

[Starting a Core VM upgrade](#) (see page 26)

## Upgrading the MSP VM

Use this procedure to upgrade the MSP VM.

**Procedure**

- 1 Start the MSP VM upgrade.
- 2 Verify the MSP VM upgrade.

[Related information](#)

[Starting the MSP VM upgrade](#) (see page 36)

[Verifying the MSP VM upgrade](#) (see page 38)

## Upgrading the MSM VM

Use this procedure to upgrade the MSM VM.

**Before you begin**

Before starting the upgrade process for the MSM VM, collect the custom display names.

**Procedure**

- 1 Start the MSM VM upgrade.

- 2 Update the MSM credential manager service.
- 3 Verify the MSM VM upgrade.
- 4 In MSM, open the file: `/opt/vce/multivbmgmt/conf/cvm-config.properties`
- 5 At the end of the file add the following two lines:
  - `operationSettingFileLocation = /opt/vce/multivbmgmt/conf`
  - `operationSettingFile = operations-configuration.xml`
- 6 Restart service tomcat.
- 7 Upload compliance content.
- 8 Reenter the custom display names.

① **NOTE:** You can use the simplified script for the single site upgrade.

#### Related information

[Starting an MSM VM upgrade](#) (see page 31)

[Updating the MSM credential manager service](#) (see page 33)

[Verifying the MSM VM upgrade](#) (see page 33)

[Reentering the custom display names](#) (see page 35)

## Removing a VM snapshot

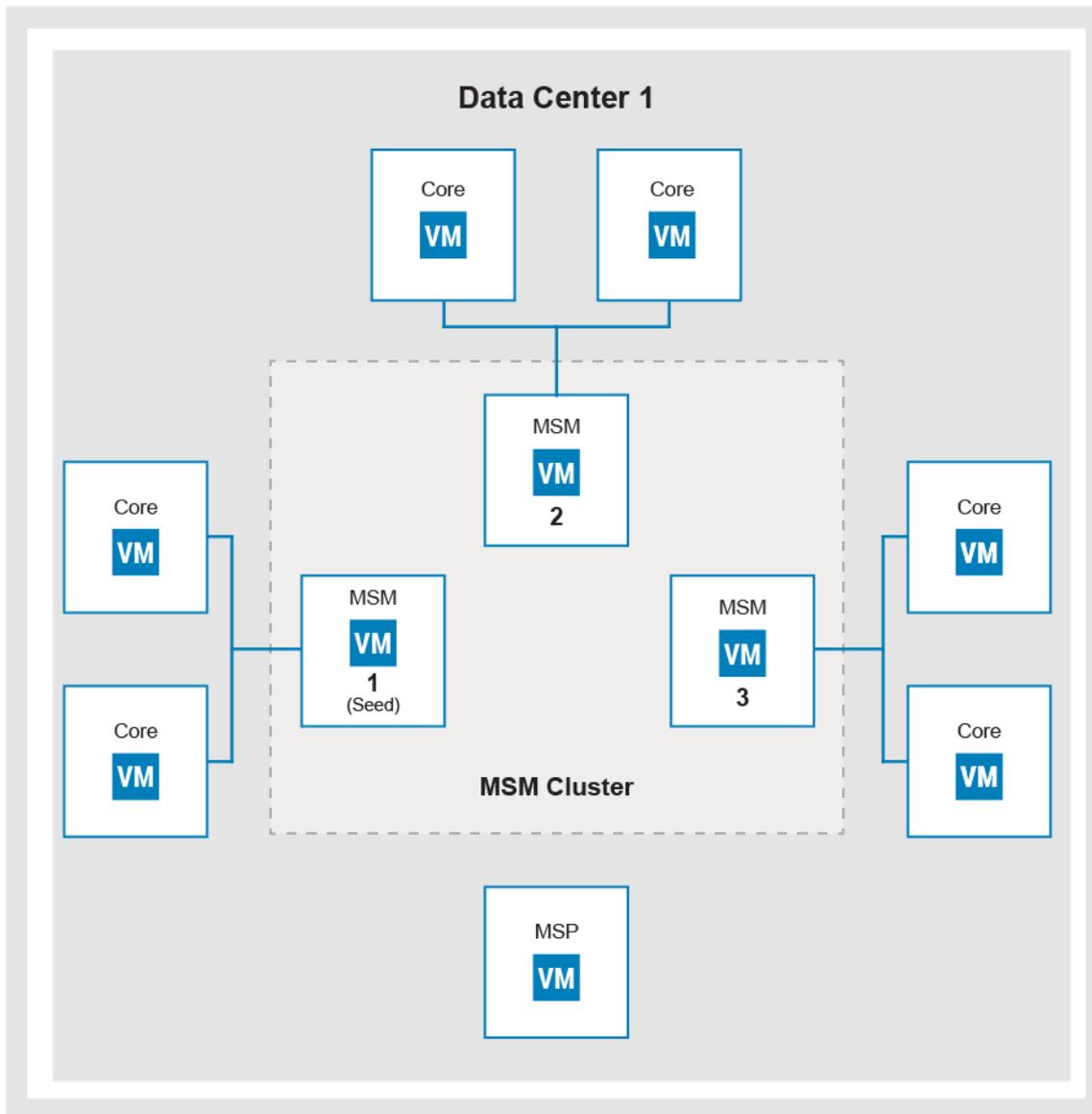
As a best practice, remove VM snapshots after you successfully upgrade the VMs. If a VM is part of a cluster, do not remove the VM snapshot until all VMs are successfully upgraded. Refer to the VMware documentation for more information. VMware knowledge base article ID 1025279 provides information about best practices for snapshots in a VMware environment.

## Upgrading a single-site cluster containing multiple MSM VMs

Follow the process outlined here to upgrade VxBlock Central one data center environment with multiple MSM VMs, each associated with up to two Core VMs.

VxBlock Central contains a simplified upgrade process. It is recommended that you follow this process. See the *VxBlock Central simplified upgrade*.

The following illustration is an example of what a single-site cluster containing multiple MSM VMs might look like.



The following are high-level steps that are required to upgrade a single-site cluster with multiple MSM VMs:

- 1 Take a snapshot of the VMs in the cluster in a powered-down state. Power up each in reverse sequence, in five minute intervals.
- 2 Identify the MSM VM acting as the Cassandra seed node.
- 3 Configure the NTP server.
- 4 Upgrade each Core VM.
- 5 Upgrade the MSP VM.
- 6 Upgrade the MSM VMs.

- 7 Remove the snapshots of the VMs in the cluster.

#### Related information

[VxBlock Central simplified upgrade](#) (see page 39)

## Taking a snapshot of VMs in the cluster

Before upgrading, create a snapshot of each VM in the cluster. If you encounter problems during the upgrade process, you can use the snapshot to revert the virtual machine.

#### Procedure

- 1 Power off and take a snapshot of each Core VM being upgraded.  
**NOTE:** Do not power on the Core VMs until snapshots have been taken of the other VMs.
- 2 Power off and take a snapshot of the MSP VM being upgraded.  
**NOTE:** Do not power on the MSP VMs until snapshots have been taken of the other VMs.
- 3 Power off all MSM VMs in the correct sequence. Note the following:
  - The MSM VM that is acting as the Cassandra seed node should be the last MSM VM to be shut down.
  - Record the order in which the MSM VMs are shut down. This is used when powering on the MSM VMs.
  - Shut down the MSM VMs in the cluster one by one, in five minute intervals.**NOTE:** Do not power on the MSM VMs until snapshots have been taken of the other VMs.
- 4 In the powered-off state, take of snapshot of each MSM VM being upgraded.
- 5 Power on and log in to each Core VM associated with the MSM VMs in the cluster.
- 6 Power on all MSM VMs in the reverse sequence of how they were shut down, starting with the seed node. Allow five minute intervals between powering up each MSM VM.
- 7 Power on and log in to the MSP VM, if one is associated with the cluster.

## Verifying that the NTP server is configured on the VM

Ensure that each VM is configured to use an NTP server.

#### Procedure

- 1 Check whether an NTP server is configured on each Core VM, MSP VM, and MSM VM.
- 2 Configure the NTP server if necessary.

[Related information](#)

[Configuring the VMs to use the NTP server](#) (see page 30)

## Upgrading a Core VM

Use this procedure to upgrade a Core VM.

**Before you begin**

You can upgrade the Core VM associated with MSM VMs in the cluster in parallel.

**Procedure**

- 1 Start the Core VM upgrade.
- 2 Verify the Core VM upgrade.

[Related information](#)

[Starting a Core VM upgrade](#) (see page 26)

[Verifying a Core VM upgrade](#) (see page 28)

## Upgrading the MSP VM

Use this procedure to upgrade the MSP VM.

**Procedure**

- 1 Start the MSP VM upgrade.
- 2 Verify the MSP VM upgrade.

[Related information](#)

[Starting the MSP VM upgrade](#) (see page 36)

[Verifying the MSP VM upgrade](#) (see page 38)

## Identifying the MSM VM acting as the Cassandra seed node

Use this procedure to find the MSM VM acting as the Cassandra seed node and determine the MSM VM with which to start the upgrade.

**Procedure**

- 1 Start an SSH session to any MSM VM in the cluster.

- 2 Type the following command: `grep seeds: /opt/cassandra/conf/cassandra.yaml`

The IP address in the output is the IP address of the MSM VM acting as the Cassandra seed node. For example: `seeds: ip address`

## Upgrading an MSM VM

Use this procedure to upgrade each MSM VM.

### About this task

Perform the upgrade for each MSM VM, beginning with the one acting as the Cassandra seed node. Perform the upgrade of the MSM VM cluster members sequentially.

### Before you begin

Make sure that the following are complete before starting the upgrade process for the associated MSM VM cluster members:

- Upgrade of Core VMs
- Upgrade of the MSP VM

After the VM cluster upgrade process begins:

- Do not add any Core VMs to any MSM VMs in the cluster.
- Do not join any additional MSM VMs to the MSMs cluster.

**NOTE:** After an MSM VM in a cluster is upgraded, exceptions might be displayed in the `/opt/vce/multivbmgmt/logs/CollectionManager.log` until all MSM VMs are upgraded. Collections can temporarily fail on all non-upgraded MSM VMs until they are upgraded.

**Important:** Start the upgrade process with the MSM VM that is acting as the Cassandra seed node.

### Procedure

- 1 Start the MSM VM upgrade.
- 2 Update the MSM credential manager service.
- 3 Verify the MSM VM upgrade.

### Related information

[Identifying the MSM VM acting as the Cassandra seed node](#) (see page 17)

[Starting an MSM VM upgrade](#) (see page 31)

[Updating the MSM credential manager service](#) (see page 33)

[Verifying the MSM VM upgrade](#) (see page 33)

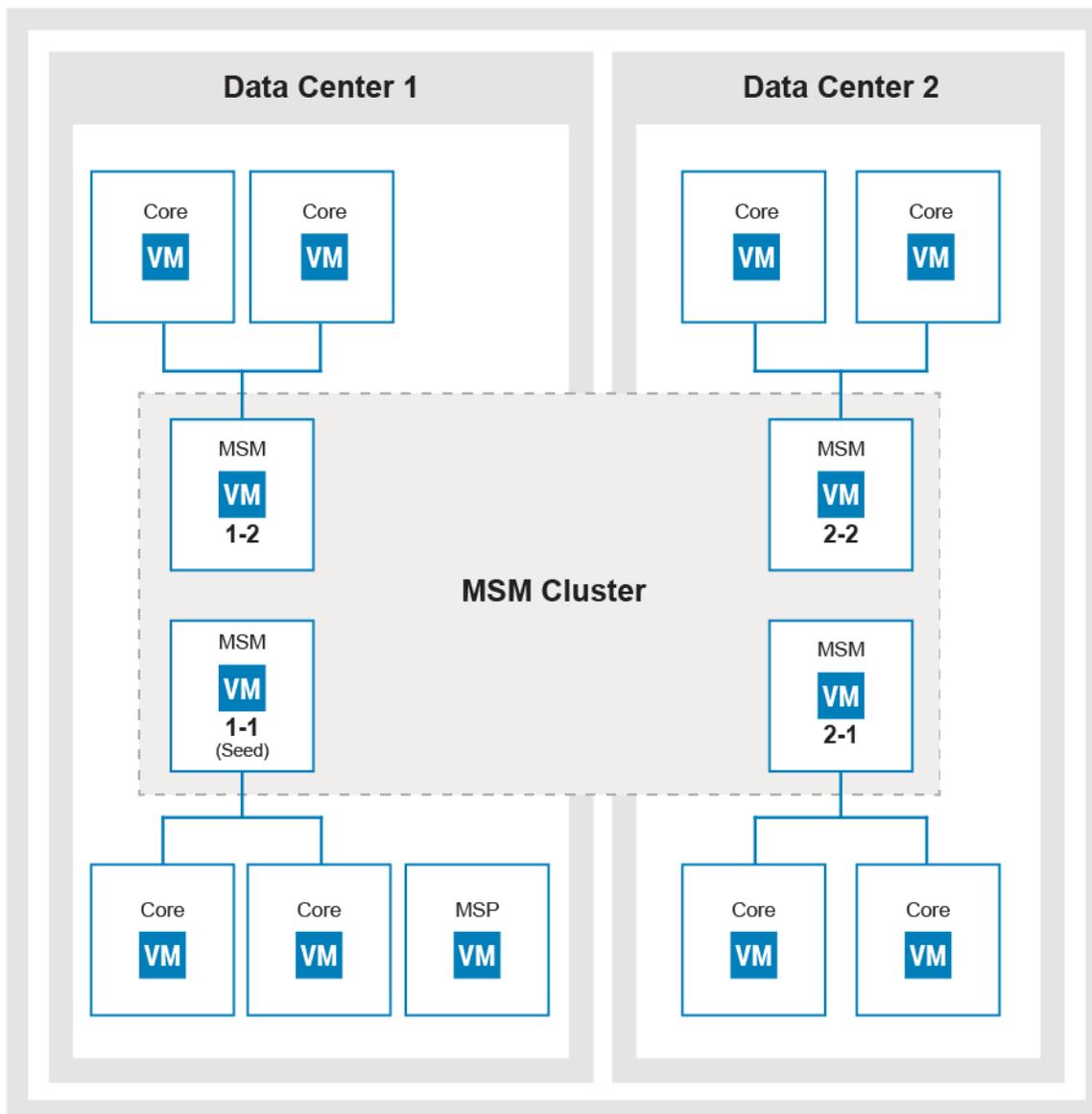
## Removing a VM snapshot

As a best practice, remove VM snapshots after you successfully upgrade the VMs. If a VM is part of a cluster, do not remove the VM snapshot until all VMs are successfully upgraded. Refer to the VMware documentation for more information. VMware knowledge base article ID 1025279 provides information about best practices for snapshots in a VMware environment.

## Upgrading a multisite cluster

Use the process to upgrade an environment of up to three data centers, each having up to two MSM VMs. These MSM VMs can each be associated with up to two Core VMs.

The following illustration an example of what a multisite cluster data center environment might look like.



The following are high-level steps that are required to upgrade a multisite cluster environment:

- 1 Take a snapshot of the VMs in the cluster.

- 2 Configure the NTP server.
- 3 Identify the data center.
- 4 Upgrade the VMs in each data center.
  - a Upgrade each Core VM.
  - b Upgrade the MSP VM, if present.
  - c Upgrade each MSM VM.
- 5 Remove the snapshots of the VMs in the cluster.

## Taking a snapshot of VMs in the cluster

Before upgrading, create a snapshot of each VM in the cluster. If you encounter problems during the upgrade process, you can use the snapshot to revert the virtual machine.

### Procedure

- 1 Power off and take a snapshot of each Core VM being upgraded.
  - ⓘ **NOTE:** Do not power on the Core VMs until snapshots have been taken of the other VMs.
- 2 Power off and take a snapshot of the MSP VM being upgraded.
  - ⓘ **NOTE:** Do not power on the MSP VMs until snapshots have been taken of the other VMs.
- 3 Power off all MSM VMs in the correct sequence. Note the following:
  - The MSM VM that is acting as the Cassandra seed node should be the last MSM VM to be shut down.
  - Record the order in which the MSM VMs are shut down. This is used when powering on the MSM VMs.
  - Shut down the MSM VMs in the cluster one by one, in five minute intervals.
  - ⓘ **NOTE:** Do not power on the MSM VMs until snapshots have been taken of the other VMs.
- 4 In the powered-off state, take of snapshot of each MSM VM being upgraded.
- 5 Power on and log in to each Core VM associated with the MSM VMs in the cluster.
- 6 Power on all MSM VMs in the reverse sequence of how they were shut down, starting with the seed node. Allow five minute intervals between powering up each MSM VM.
- 7 Power on and log in to the MSP VM, if one is associated with the cluster.

## Verifying that the NTP server is configured on the VM

Ensure that each VM is configured to use an NTP server.

## Procedure

- 1 Check whether an NTP server is configured on each Core VM, MSP VM, and MSM VM.
- 2 Configure the NTP server if necessary.

## Related information

[Configuring the VMs to use the NTP server](#) (see page 30)

## Upgrading the data center VMs

Upgrade the VMs in each data center starting with the data center containing the MSM VM that is acting as the Cassandra seed node.

After the MSM VM cluster upgrade process starts in a data center:

- Do not add any Core VMs to any MSM VM in the cluster.
- Do not join any additional MSM VMs to the MSM cluster.

## Upgrading Core VMs

The Core VMs can be upgraded across data centers before beginning MSM VM upgrades. This process helps minimize the time between upgrading MSM VMs in different data centers.

## Before you begin

You can upgrade the Core VMs associated with MSM VMs in the cluster in parallel.

## Procedure

- 1 Start the Core VM upgrade.
- 2 Verify the Core VM upgrade.

## Related information

[Starting a Core VM upgrade](#) (see page 26)

[Verifying a Core VM upgrade](#) (see page 28)

## Upgrading the MSP VM

Use this procedure to upgrade the MSP VM.

## Procedure

- 1 Start the MSP VM upgrade.
- 2 Verify the MSP VM upgrade.

## Related information

[Starting the MSP VM upgrade](#) (see page 36)

[Verifying the MSP VM upgrade](#) (see page 38)

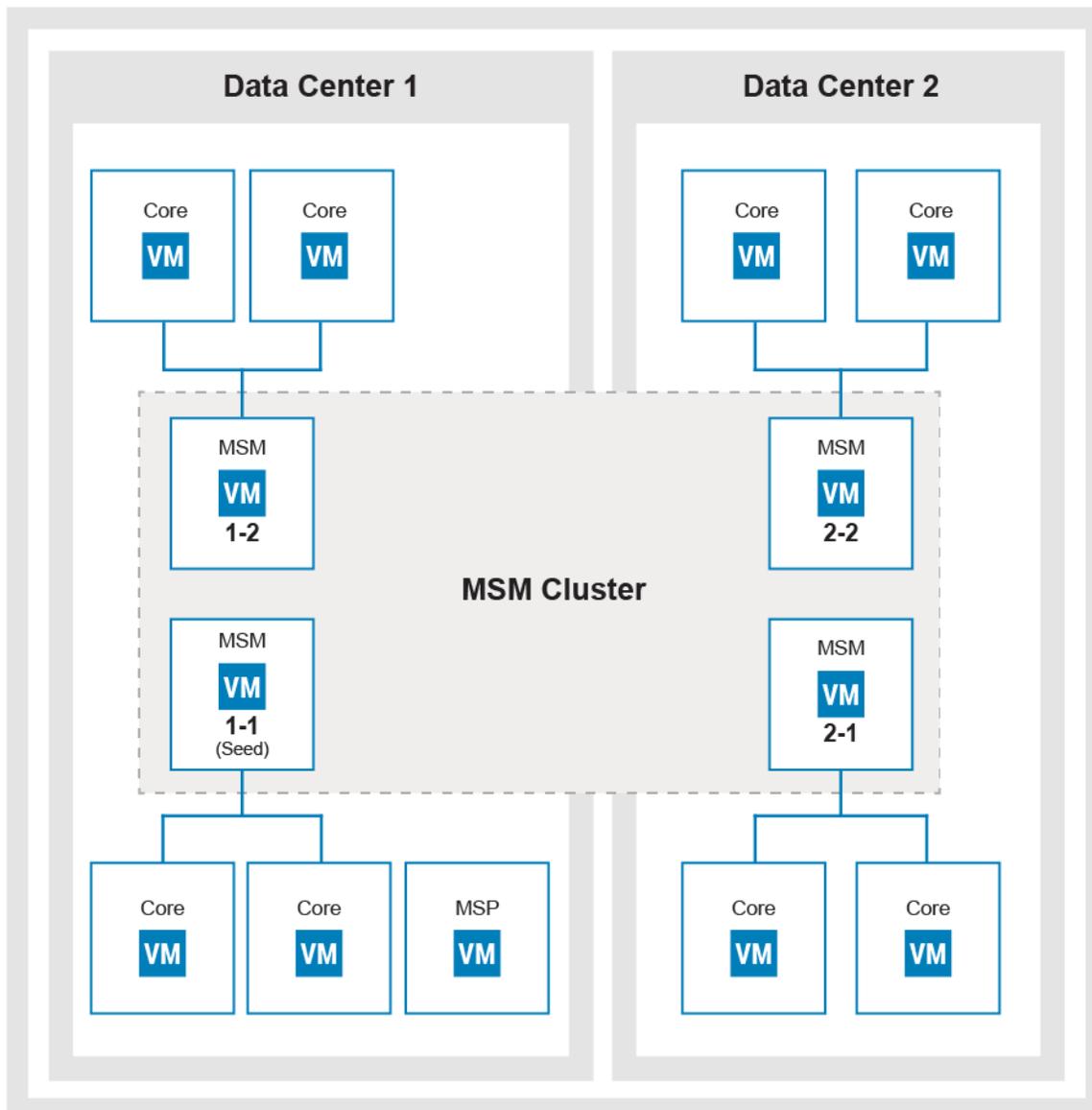
## Identifying the seed node in the data center

Perform this task to find the seed node and determine the MSM VM with which to start the upgrade.

### About this task

When the MSM cluster spans multiple data centers, perform the upgrade on each data center separately. Start the upgrade process with the MSM VM that is acting as the Cassandra seed node.

In the following illustration, the MSM VMs in data center 1 should be upgraded first, because data center 1 contains the MSM VM that is acting as the Cassandra seed node. After the MSM VMs in data center 1 are successfully upgraded, upgrade data center 2 MSM VMs.



## Procedure

- 1 Start an SSH session to access any MSM VM in the cluster.
- 2 Type the following command: `grep seeds: /opt/cassandra/conf/cassandra.yaml`

The IP address in the output is the MSM VM address that is acting as the Cassandra seed node.

## Upgrading an MSM VM

Use this procedure to upgrade an MSM VM.

### About this task

Perform the upgrade of the MSM VM cluster members sequentially.

### Before you begin

Make sure that the following are complete before starting the upgrade process for the associated MSM VM cluster members:

- Upgrade of Core VMs
- Upgrade of the MSP VM, if one is associated with the cluster

After the MSM VM cluster upgrade process begins:

- Do not add any Core VMs to any MSM VMs in the cluster.
- Do not join any additional MSM VMs to the MSM cluster.

**NOTE:** After an MSM VM in a cluster is upgraded, exceptions might be displayed in the `/opt/vce/multivbmgmt/logs/CollectionManager.log` until all MSM VMs in the cluster are upgraded. Collections can temporarily fail on all nonupgraded MSM VMs until they are upgraded. This scenario means that, until both data centers are upgraded, an MSM VM upgrade in one data center impacts collections by MSM VMs running in the other data center.

**Important:** Start the upgrade process with the MSM VM that is acting as the Cassandra seed node.

## Procedure

- 1 Start the MSM VM upgrade.
- 2 Update the MSM credential manager service.
- 3 Verify the MSM VM upgrade.

### What to do next

- Upload compliance content.
- Re-run all compliance scans. See the online help for information on compliance scans.

## Related information

[Collecting the custom display names](#) (see page 9)

[Identifying the seed node in the data center](#) (see page 22)

[Starting an MSM VM upgrade](#) (see page 31)

[Updating the MSM credential manager service](#) (see page 33)

[Verifying the MSM VM upgrade](#) (see page 33)

[Reentering the custom display names](#) (see page 35)

[Upload compliance content](#) (see page 34)

## Removing a VM snapshot

As a best practice, remove VM snapshots after you successfully upgrade the VMs. If a VM is part of a cluster, do not remove the VM snapshot until all VMs are successfully upgraded. Refer to the VMware documentation for more information. VMware knowledge base article ID [1025279](#) provides information about best practices for snapshots in a VMware environment.

# Upgrading a Core VM

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Follow this section to upgrade the Core VM.

## NOTE:

The Core VM upgrade must be complete before you start upgrading the MSM VM.

## Taking a snapshot of the Core VM

Before upgrading, create a snapshot of the Core VM. If you encounter problems during the upgrade process, you can revert the VM using the snapshot.

### Before you begin

Connect to the Core VM.

### Procedure

- 1 Type `shutdown -h now` to power off the VM. The following message displays:

```
The system is going down for halt NOW!
```

- 2 Log in to the VMware vSphere Client using an account with administrative privileges.
- 3 In the **Navigation** bar, select **Home > Inventory > Hosts and Clusters**  
The VMware vSphere Client displays the hosts and clusters available in the environment.
- 4 Navigate to the VM for which you want to take a snapshot.
- 5 Right-click the VM and select **Snapshot > Take Snapshot** . The VMware vSphere Client prompts you to enter a name and description for the snapshot.
- 6 Specify a name and description for the snapshot.  
Choose a name and description that are easy to recognize and meaningful to others.
- 7 Clear the check boxes to snapshot the VM memory and quiesce the guest file system, if available.
- 8 Click **OK** to take the snapshot of the VM.

### What to do next

If the VM is not part of a cluster, power on the VM and log in.

If the VM is part of a cluster, power on the VM and log in only after the VM snapshots have been taken of the other cluster members.

# Starting a Core VM upgrade

Execute `VxBlock-Central_core_upgrade-<buildnumber>.vce` to upgrade.

## Before you begin

- 1 Verify that the Core VM can be directly upgraded. Check the list of supported upgrade paths to determine which path best suits your system.
- 2 Take a snapshot of the Core VM.
- 3 Validate the components and login credentials for all components in the `vblock.xml` file by typing the following command:

```
configTool.sh -v vblock.xml
```

- 4 Ensure that you have the following:
  - Central Authentication Service (CAS) administrator password
  - VNXe service account password for VxBlock 350 and VxBlock System 740

## Procedure

- 1 Connect to the Core VM using SSH.
- 2 Copy `VxBlock-Central_core_upgrade-<buildnumber>.vce` to the `/root` directory on the Core VM.
- 3 (Optional) To verify that the Core VM meets the minimum requirements for the upgrade, to check the version, or to get help for the command, type the following command:

```
sh VxBlock-Central_core_upgrade-<buildnumber>.vce --argument
```

Where argument is one of the following optional arguments:

Argument	Description
<code>choice</code>	Performs a check for minimum requirements such as available disk space.
<code>noprompt</code>	Runs the upgrade process without prompting you to confirm: <ul style="list-style-type: none"><li>— You have a virtual machine snapshot.</li><li>— You want to reboot the virtual machine after upgrade.</li></ul>
<code>version</code>	Displays the currently installed version, the version of the upgrade, and the list of RPM files that the upgrade bundle includes.
<code>help</code>	Displays help usage.

- 4 To start the upgrade, type:

```
sh VxBlock-Central_core_upgrade-<buildnumber>.vce
```

The upgrade scripts start running and then prompts you with the following:

```
It is recommended that you take a snapshot before proceeding. Continue?
Enter 'y' for yes or 'n' for no (default):
```

- 5 Type one of the following values:

Option	Description
<b>y</b>	Proceed with the upgrade.
<b>n</b>	Stop the upgrade and take a snapshot of the Core VM.

If you type **y**, the upgrade scripts take you to the End User License Agreement (EULA) prompt

- 6 Type one of the following values:

Option	Description
<b>y</b>	To change the EULA agreement details before proceeding.
<b>n</b>	To continue the upgrade without changing the existing details.

If you type **y** continue with step 7. If you type **n** continue at step 8.

- 7 Complete the EULA acceptance. The fields in the EULA cannot exceed 500 characters or contain angle brackets.

- a Scroll through the EULA until you see the `Enter Name:` prompt.
- b Type your name and press **Enter**.
- c Type your job title and press **Enter**.
- d Type the name of the licensee company and press **Enter**.
- e Optional: Type the name of the accepting company and press **Enter**. If you do not specify an accepting company, the value defaults to the licensee company.
- f Type **Yes** when prompted to accept the EULA.

After you accept the EULA, the upgrade process continues and the script displays a summary of the upgrade, as in the following example:

```
timestamp: EULA has been accepted
timestamp: Waiting for services to start. This may take several minutes. Please
wait...
```

The script then prompts you to authenticate to the CAS (Central Authenticated Service) service, as follows:

```
timestamp: The CAS password is required to upgrade the VCE Software
Please enter the CAS password (attempt 1 of 3):
```

g Type the CAS password.

ⓘ **NOTE:** If you enter an incorrect CAS password after three attempts, the upgrade process stops. You must then restart the upgrade.

8 The system reboots and the following displays:

```
The system is going down for reboot NOW!  
VxBlock Central will now reboot to apply all updates
```

### What to do next

Verify the version of the Core VM is the version that you just installed.

**Note:** To add VMware NSX components (NSX Controller and the NSX Manager) or Red Hat Enterprise Linux components to the VxBlock Central discovery process, see the *Administration Guide* for your system.

## Verifying a Core VM upgrade

After completing the upgrade process, verify the version of the Core VM is the version that you installed.

### Before you begin

Connect to the Core VM.

### Procedure

- 1 Type the following command: `getFMagentInfo`.
- 2 The Core VM returns the version and build information, as in the following example:

```
OVA version:X.X.X.X-build_number  
Name:FMagent           Relocations:(not relocatable)  
Version:X.X.X.X        Vendor:VCE  
Release:release                Build Date:time_stamp  
Install Date:time_stamp      Build Host:hostname  
Group:VCE Applications/System  Source RPM:fmAGENT-X.X.X.X-build_number.src.rpm  
Size:size License:Commercial  
Signature:RSA/SHA1, time_stamp,Key ID key_id  
URL:http://www.vce.com  
Summary:VCE FMagent  
Description:  
VCE FMagnet build for System Library Integration  
' rpm -qi FMagent' will get the same information.
```

- 3 Ensure that the **Version** field contains the version of Core VM that you installed.

ⓘ **NOTE:** The OVA version that is displayed may differ and see the originally installed version of the OVA.

## Restarting the VMware vSphere web client

You must restart the VMware vSphere web client after you upgrade the Core VM.

## Before you begin

Upgrade must be complete before you restart the VMware vSphere web client.

## Procedure

- 1 Log in to the VM where VMware vSphere is installed.
- 2 Restart the VMware vSphere Web Client service.

## Removing a VM snapshot

As a best practice, remove VM snapshots after you successfully upgrade the VMs. If a VM is part of a cluster, do not remove the VM snapshot until all VMs are successfully upgraded. Refer to the VMware documentation for more information. VMware knowledge base article ID 1025279 provides information about best practices for snapshots in a VMware environment.

# Upgrading an MSM VM

---

Follow this section to upgrade an MSM VM.

① **NOTE:** All the Core VMs must be upgraded before you start the upgrade process for the MSM VM

## Configuring the VMs to use the NTP server

Configure each MSM VM and Core VM to use an NTP server.

If redeploying an MSM VM, specify an NTP server IP address when configuring the server.

### Before you begin

Determine the NTP server to be used for the data center. Use the VLAN gateway or the gateway of the VxBlock System.

### Procedure

For each MSM VM and Core VM, perform the following steps:

- 1 Use SSH to access the VM as the root user.
- 2 To verify access to the NTP server, type:  

```
ntpdate -u <IP_address>
```

where *IP\_address* is the NTP server IP address.
- 3 Edit `/etc/ntp.conf`.
- 4 Comment out the default CentOS server entries and add the following entry: **server** *IP\_address*, where *IP\_address* is the NTP server IP address. If the lines are already commented out, skip this step and run `service ntpd status` to check if the NTP daemon is running. If the daemon is running, skip the remaining steps and move to the next VM.
- 5 To save the changes and start the ntpd service, type:  

```
service ntpd restart
```
- 6 To start ntpd service on reboot, type:  

```
chkconfig ntpd on
```

## Taking a snapshot of the MSM VM

Before upgrading, create a snapshot of the MSM VM. If you encounter problems during the upgrade process, you can revert the virtual machine using the snapshot.

**Important:** After you revert to a snapshot, you must reboot the VM before attempting another upgrade.

## Before you begin

Connect to the MSM VM.

## Procedure

- 1 Type `shutdown -h now` to power off the VM. The following message displays:

```
The system is going down for halt NOW!
```

- 2 Log in to the VMware vSphere Client using an account with administrative privileges.
- 3 In the **Navigation** bar, select **Home > Inventory > Hosts and Clusters**  
The VMware vSphere Client displays the hosts and clusters available in the environment.
- 4 Navigate to the VM for which you want to take a snapshot.
- 5 Right-click the VM and select **Snapshot > Take Snapshot** . The VMware vSphere Client prompts you to enter a name and description for the snapshot.
- 6 Specify a name and description for the snapshot.  
Choose a name and description that are easy to recognize and meaningful to others.
- 7 Clear the check boxes to snapshot the VM memory and quiesce the guest file system, if available.
- 8 Click **OK** to take the snapshot of the VM.

## What to do next

If the VM is not part of a cluster, power on the VM and log in.

If the VM is part of a cluster, power on the VM and log in only after the VM snapshots have been taken of the other cluster members.

# Starting an MSM VM upgrade

Execute `VxBlock-Central_msm_upgrade-<buildnumber>.vce` to upgrade.

## Before you begin

- Verify the MSM VM can be directly upgraded. Check the list of supported upgrade paths to determine which path best suits your system.
- Take a snapshot of the MSM VM.
- Ensure that all Core VMs connected to the MSM VM being upgraded are powered on.

## Procedure

- 1 Connect to the MSM VM using SSH

- 2 Ensure that all Core VMs connected to the MSM VM being upgraded are powered on.
- 3 Copy `VxBlock-Central_msm_upgrade-<buildnumber>.vce` to the `/root` directory on the MSM VM.
- 4 (Optional) To verify that the MSM VM meets the minimum requirements for the upgrade to check the version or to get help for the command, type the following command:

```
sh VxBlock-Central_msm_upgrade-<buildnumber>.vce --argument
```

Where *argument* is one of the following optional arguments:

Argument	Description
<b>check</b>	Performs a check for minimum requirements such as available disk space.
<b>noprompt</b>	Runs the upgrade process without prompting you to confirm: <ul style="list-style-type: none"> <li>— You have a virtual machine snapshot.</li> <li>— You want to reboot the virtual machine after upgrade.</li> </ul>
<b>version</b>	Displays the currently installed version, the version of the upgrade, and the list of RPM files that the upgrade bundle includes.
<b>help</b>	Displays help usage.

- 5 To start the upgrade, type the following command:

```
sh VxBlock-Central_msm_upgrade-<buildnumber>.vce
```

The upgrade scripts start running and then prompts with the following:

```
It is recommended that you take a snapshot before proceeding. Continue?
Enter 'y' for yes or 'n' for no (default):
```

- 6 Type one of the following values:

Option	Description
<b>y</b>	Proceed with the upgrade if you have taken a snapshot of the virtual machine.
<b>n</b>	Stop the upgrade and take a virtual machine snapshot.

**NOTE:** Before proceeding with the upgrade, ensure that all Core VMs that are connected to the MSM VM being upgraded are powered on.

- 7 The upgrade process continues and the script displays a summary of the upgrade, as in the following example:

```
timestamp: Available disk space: 67294044160
timestamp: Patch size: 528506470
timestamp: Currently installed OVA version is 3.5.0.0
timestamp: This bundle version is 3.6.0.0-build_number
```

- 8 Type **y** to restart the VM.

The following message is displayed:

```
The system is going down for reboot NOW!  
VxBlock Central will now reboot to apply all updates
```

- ① **NOTE:** After upgrading, you need to rerun all compliance scans. In a clustered environment, compliance scan results previous to the upgrade are retained. In a single MSM deployment, the details are not retained. See the online help for information on compliance scans.

### What to do next

Verify that the version of the MSM VM corresponds to the version that you installed.

## Updating the MSM credential manager service

If the root or VxBlock Central user password has been changed on the Core VM, you must update the MSM credential manager service with the new password.

Start an SSH session to the MSM VM and complete the following steps:

- 1 Log in to the MSM VM as the root user.
- 2 To change the Core VM root user password for MSM VM, type:  

```
/opt/vce/multivbmgmt/install/addSlibHost.sh <core_IPaddress>
```

where *core\_IPaddress* is the IP address for the Core VM where the password was changed.
- 3 Type **yes**.
- 4 Type **root** (or press Enter) for the username.
- 5 Type the new password for the Core VM.

## Verifying the MSM VM upgrade

After completing the upgrade process, use the VxBlock Central dashboard to verify that the version number of the MSM corresponds to the version that you installed.

### Before you begin

Obtain the following information to access the dashboard:

- Fully-qualified domain name (FQDN) of the MSM VM.
- A username and password with access to the VxBlock Central dashboard.
- Google Chrome

The dashboard supports a minimum screen resolution of 1280 x 1024.

## Procedure

- 1 Use Google Chrome to access the MSM VM.

The URL format is `https://FQDN`, where *FQDN* is the fully qualified domain name of the MSM VM.

**NOTE:** The MSM VM has to be able to ping the FQDN of the Core VM. If it cannot, a host file entry for the Core VM must exist on the MSM VM.

- 2 Log in with default credentials for the dashboard (**admin/D@ngero1**). Change this password to protect the system from unauthorized access.

If it is the first time you have opened the dashboard, there is a quick tour of some of the new features.

- 3 Click **About** at the end of the screen and verify that the version number is correct.

**NOTE:** If the search field returns a message `Unable to execute search` when you log in to the MSM, the database rebuild has not completed. Allow 15 minutes for this process to complete and log in to the MSM VM again.

## What to do next

- If using a single MSM VM, upload the compliance content using the VxBlock Central dashboard.
- If using a single-site cluster MSM VM, repeat upgrading MSM VM steps for non-seed MSM nodes and then upload the compliance content using the VxBlock Central dashboard.
- If using a multi-site cluster MSM VM, repeat upgrading MSM VM steps for non-seed MSM nodes in the same data center, followed by non-seed MSM nodes in the second data and so on and then upload the compliance content using the VxBlock Central dashboard.

## Upload compliance content

Use the dashboard to upload and install new compliance content.

### Before you begin

To install new compliance content, it must meet the following requirements:

- The compliance content must be downloaded from the Download Center.
- Ensure that all of the XML content is in a compressed ZIP file.
- The ZIP file must contain at least one valid XCCDF file and one valid OVAL file.

The following are the steps to upload compliance content:

## Procedure

- 1 Log in to VxBlock Central UI and go to the **RCM** dashboard tab.

- 2 Select **Upload Compliance Policies**. The **Manage Compliance Policies** dialog box is displayed.
- 3 Select the appropriate Compliance Policy file on your hard drive and then click **Save**.

#### What to do next

After uploading any new compliance content, rerun all compliance scans to see the latest scan results. You do not need to upload separate content for VSA/VTA as new RCM content includes VSA/VTA content.

## Reentering the custom display names

In a single MSM deployment, custom display names are not retained after an upgrade, you need to reenter the names you defined before you began the upgrade process. Custom display names are retained in a clustered environment.

#### Procedure

- 1 Reenter the custom display names.
- 2 Refer to the dashboard help for more information about renaming the display names.

## Removing a VM snapshot

As a best practice, remove VM snapshots after you successfully upgrade the VMs. If a VM is part of a cluster, do not remove the VM snapshot until all VMs are successfully upgraded. Refer to the VMware documentation for more information. VMware knowledge base article ID 1025279 provides information about best practices for snapshots in a VMware environment.

# Upgrading the MSP VM

---

Perform this procedure to upgrade the MSP VM.

## Taking a snapshot of the MSP VM

Before upgrading, power off the MSP VM and create a snapshot. Use the snapshot to revert the VM to its previous state if any problems are encountered during the upgrade process.

### Before you begin

Connect to the MSP VM.

### Procedure

- 1 Type `shutdown -h now` to power off the VM. The following message displays:

```
The system is going down for halt NOW!
```

- 2 Log in to the VMware vSphere Client using an account with administrative privileges.
- 3 In the **Navigation** bar, select **Home > Inventory > Hosts and Clusters**  
  
The VMware vSphere Client displays the hosts and clusters available in the environment.
- 4 Navigate to the VM for which you want to take a snapshot.
- 5 Right-click the VM and select **Snapshot > Take Snapshot** . The VMware vSphere Client prompts you to enter a name and description for the snapshot.
- 6 Specify a name and description for the snapshot.  
  
Choose a name and description that are easy to recognize and meaningful to others.
- 7 Clear the check boxes to snapshot the VM memory and quiesce the guest file system, if available.
- 8 Click **OK** to take the snapshot of the VM.

### What to do next

Power on the VM and log in.

## Starting the MSP VM upgrade

Execute `VxBlock-Central_msp_upgrade--<buildnumber>.vce` to upgrade.

### Before you begin

- Verify the MSP VM can be directly upgraded. Check the list of supported upgrade paths to determine which path best suits your system.

- Take a snapshot of the MSP VM.
- Connect to the MSP VM using SSH.
- Ensure that all Core VMs connected to the MSM VM being upgraded have been powered up.

## Procedure

- 1 Copy `VxBlock-Central_msp_upgrade--<buildnumber>.vce` to the `/root` directory on the MSP VM.
- 2 (Optional) To verify that the MSP VM meets the minimum requirements for the update, check the version. To get help for the command, run the following command:

```
sh VxBlock-Central_msp_upgrade--<buildnumber>.vce --argument
```

Where *argument* is one of the following optional arguments:

Argument	Description
<b>check</b>	Performs a check for minimum requirements such as available disk space.
<b>noprompt</b>	Runs the upgrade process without prompting you to confirm: <ul style="list-style-type: none"> <li>— You have a virtual machine snapshot.</li> <li>— You want to reboot the virtual machine after upgrade.</li> </ul>
<b>version</b>	Displays the currently installed version, the version of the upgrade, and the list of RPM files that the upgrade bundle includes.
<b>help</b>	Displays help usage.

- 3 To start the upgrade, type the following command:

```
sh VxBlock-Central_msp_upgrade--<buildnumber>.vce
```

The upgrade scripts start running and then prompt you with the following:

```
It is recommended that you take a snapshot before proceeding. Continue?
Enter 'y' for yes or 'n' for no (default):
```

- 4 Type one of the following values:

Option	Description
<b>y</b>	Proceed with the upgrade if you have taken a snapshot of the virtual machine.
<b>n</b>	Stop the upgrade and take a virtual machine snapshot.

- 5 The upgrade process continues and series of messages be displayed. When you reach the end of the upgrade process, the script prompts you to restart the MSP VM:

```
A system reboot is required for all updates to complete. If you do not reboot now, the
system will be unusable until a reboot occurs.
Reboot system now?
Enter 'n' for no or 'y' for yes (default)
```

- 6 Type **y** to restart.

The following message is displayed:

```
The system is going down for reboot NOW!  
VxBlock Central will now reboot to apply all updates
```

### What to do next

Verify that the version of the MSP VM is the version that you installed.

## Verifying the MSP VM upgrade

After completing the upgrade process, verify the status of the MSP VM.

### Before you begin

Connect to the MSP VM.

### Procedure

Verify that the component services are running by running the following commands:

```
service httpd status
```

```
service vision-assetmanager status
```

```
service vision-contentshare status
```

```
service vision-contentsource status
```

```
service vision-downloader status
```

### Results

The status for each service should be displayed as `running` or provide details about running processes.

### What to do next

If you updated the MSP VM password, you must change the CAS password for the MSP VM to match the CAS password on the MSM VM.

## Removing a VM snapshot

As a best practice, remove VM snapshots after you successfully upgrade the VMs. If a VM is part of a cluster, do not remove the VM snapshot until all VMs are successfully upgraded. Refer to the VMware documentation for more information. VMware knowledge base article ID [1025279](#) provides information about best practices for snapshots in a VMware environment.

# VxBlock Central simplified upgrade

---

VxBlock Central supports a simplified upgrade process for single-site environments. It does not apply to multisite environments. The upgrade is initiated from MSM and MSM in turn runs the upgrade on each of the Core VMs and MSP VMs.

After the upgrade process begins:

- Do not add any VxBlock Central Core nodes to MSM VMs.
- Do not join any additional MSM VMs to an MSM cluster.

The following are high-level steps required for a VxBlock Central simplified upgrade on a single-site cluster with a single MSM VM:

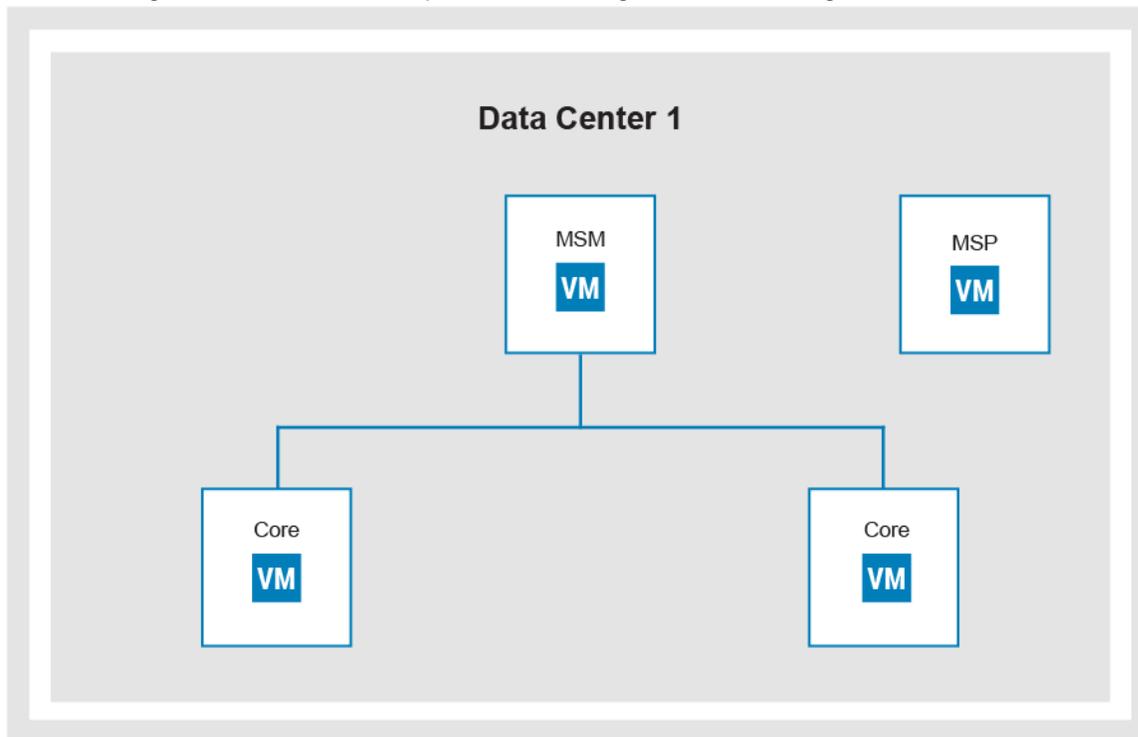
- 1** Collect custom display properties if the system is single MSM. For more information refer to: *Collecting the custom display names*.
- 2** Take a snapshot of the VMs. For more information see: *Taking a snapshot of the VMs*.
- 3** Configure the NTP server. For more information see: *Configuring the VM to use the NTP server*.  
Ensure you have your MSP VM IP address and VxBlock Central Core root passwords.
- 4** Run the VxBlock Central upgrade script from MSM. For more information refer to: *Upgrading a single MSM VM*.
- 5** Reenter the custom display name. For more information refer to: *Reentering the custom display names*.

## Upgrading a single MSM VM using the simplified upgrade

Follow this process to upgrade in a data center environment with multiple Core VMs mapped to a single MSM VM.

## About this task

The following illustration is an example of what a single-site cluster might look like.



## Before you begin

Ensure you complete the following steps for a VxBlock Central simplified upgrade:

- 1 Collecting the custom display names.
- 2 Taking a snapshot of the VMs.
- 3 Configuring the NTP server.

## Procedure

- 1 Download the following file from the Download Center for the MSM VM and copy to the root directory on the MSM VM: **VxBlock-Central\_upgradeBundle**
- 2 Be sure to have the file permission and then run the following command:  

```
sh VxBlock-Central_upgradebundle_<buildnumber>.vce
```

This script will run the MSP VM, Core VM, and MSM upgrades.
- 3 A series of prompts instruct you to input the following:
  - a SLIBMSP root passwords.
  - b Confirm OVA snapshot (y/n).
  - c Confirm to connect (y/n).

To change details of an accepted EULA, run: `/opt/vce/fm/bin/resetEulaAcceptance`, and then `/opt/vce/fm/bin/startEulaAcceptance`. If the confirmation for the OVA snapshot is `n` or any of the system upgrade fails, the script will stop. You need to revert to the snapshot and rerun the command from MSM again. Once all the systems are updated, the command displays a summary of the execution. The output of the run will be written into a logfile: `/opt/vce/multivbmgmt/logs/upgradeLogFile-{date}.log`

- 4 At the end of the run, MSM will reboot. Log in again and check all services are working.
- 5 Verify the Core upgrade. For more information see: *Verifying a Core VM VM upgrade*.
- 6 Verify the MSP upgrade. For more information see: *Verifying the MSP VM upgrade*.
- 7 Verify the MSM upgrade. For more information see: *Verifying the MSM VM upgrade*.

#### What to do next

Reenter the custom display names.

#### Related information

[Reentering the custom display names](#) (see page 35)

# Troubleshooting the VxBlock Central upgrade

## Recover the MSM cluster

Restore your MSM cluster using the VMware vSphere Client.

### About this task

Perform this task only during the upgrade process.

MSM nodes must be powered on in the reverse order that they were powered off, starting with the seed node.

### Before you begin

Verify that the order of the MSM nodes were powered off. If the order is unknown, begin with the MSM nodes in the seed node of VMware vCenter.

### Procedure

- 1 Power on the MSM seed node using the VMware vCenter vSphere Client. Open a console connection to the VM, and wait for the log on prompt.
- 2 Perform the following for each MSM node in the same data center in the reverse order from shutdown:
  - a Power on the next MSM node using the VMware vCenter vSphere Client. Continue powering on each MSM node in the cluster in five minute increments. Repeat the recovery process for every MSM node in each data center of your clustered environment.
  - b After all the MSM nodes in all data centers are powered back on, on each of the MSM nodes in the clustered environment, type:

```
service tomcat restart
```
  - c To check the services, type:

```
vision start
```
  - d To monitor the status of the cluster, type:

```
/opt/cassandra/bin/nodetool status
```
  - e After all MSM nodes are up and running in the same data center, to ensure the IP address of each MSM node in that data center is displayed, type:

```
rabbitmqctl cluster_status
```
- 3 After all the nodes in all data centers are powered on, perform the following:
  - a Check the VxBlock Central dashboard to ensure you can view your VxBlock Systems. If not, to restart the Tomcat service, type:

```
service tomcat restart
```

- b** Check the **Compliance and Remediation** of the VxBlock Central dashboard to ensure the compliance status is displayed. If not, type:

```
service vision-mvb-compliance restart
```

## Reviewing log files

Troubleshooting log files helps you to resolve issues sometimes encountered during an upgrade of VxBlock Central.

To help you isolate problems and troubleshoot issues, review log messages for the upgrade in the following files:

### Log files for the Core VM upgrade:

```
/opt/vce/fm/logs/patch-<time_stamp>.log
```

### Log files for the MSM VM upgrade:

```
/opt/vce/logs/patch/patch-<time_stamp>.log
```

### Log files for the MSP VM upgrade:

```
/opt/vce/msp/logs/patch-<time_stamp>.log
```

## Services do not start after Core VM upgrade

System library services do not start automatically when the Core VM reboots after you upgrade VxBlock Central.

If you encounter this issue, the following messages display in the terminal window:

```
Notice: Finished catalog run in 38.85 seconds
<time-stamp>: Waiting for postgresql-9.1 to start...
<time-stamp>: Waiting for jboss to start...
<time-stamp>: Waiting for rabbitmq-server to start...
<time-stamp>: Waiting for FMServer.ear to be deployed...
<time-stamp>: Timed out after 300 seconds waiting for FMServer.ear to be deployed!
<time-stamp>: Failed!
```

Complete the following steps to restart the Core VM and resolve this issue:

- 1 Start an SSH session to the Core VM.
- 2 Log in as user root.
  -  **NOTE:** `v1rtu@1c3!` is the default password.
- 3 Run the following command to shut down the Core VM:

```
shutdown -h now
```

- 4 Power on the Core VM from the VMware vSphere Client.

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