

VMware Cloud Foundation Upgrade Guide

18 July 2019

VMware Cloud Foundation 3.8



vmware®

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Contents

1	About the VMware Cloud Foundation Upgrade Guide	5
2	Read the Supporting Documents	7
3	About Cloud Foundation Bundles	8
	Bundle Types	8
	Upgrade Bundles	8
	Install Bundles	9
	Download Bundles	9
	Online Bundle Download	9
	Offline Bundle Download for VMware Cloud Foundation 3.8	12
	Offline Bundle Download for VMware Cloud Foundation 3.8.1	14
	Download Specific Bundles	16
	View Bundle Download History	18
4	Upgrade Cloud Foundation 3.8.1	19
	Upgrade Prerequisites	19
	Perform Upgrade Precheck	20
	Upgrade the Management Domain to 3.8.1	21
	Upgrade Cloud Foundation Software	22
	Upgrade vRealize Suite Lifecycle Manager	23
	Upgrade vCenter Server and Platform Services Controllers	23
	Upgrade ESXi	24
	Upgrade NSX-T Workload Domains	24
	Upgrade vCenter Server	25
	Upgrade ESXi with Custom ISO	25
	Upgrade NSX-T	28
5	Upgrade Cloud Foundation 3.8	30
	Upgrade Prerequisites	30
	Perform Upgrade Precheck	31
	Upgrade the Management Domain to 3.8	32
	Upgrade Cloud Foundation Software	32
	Upgrade vRealize Suite Lifecycle Manager	37
	Upgrade vRealize Log Insight	37
	Upgrade vRealize Operations	42
	Upgrade vRealize Automation	42
	Upgrade NSX for vSphere in Management Domain	45

Upgrade vCenter Server and Platform Services Controllers	45
Upgrade ESXi	45
Upgrade NSX-T Workload Domains	46
Upgrade vCenter Server	47
Upgrade ESXi	48
Upgrade NSX-T	48
Upgrade NSX for vSphere Workload Domains	49
Upgrade NSX for vSphere	50
Upgrade vCenter Server	50
Upgrade ESXi	50
6 Upgrade ESXi with Custom ISO or Async Drivers	52
Upgrade ESXi with Custom ISO	52
Upgrade ESXi with Cloud Foundation Stock ISO and Async Drivers	54
7 Skip Hosts During ESXi Update	57
8 Monitor Updates	59
9 View Upgrade History	61
10 Access Upgrade Log Files	62

About the VMware Cloud Foundation Upgrade Guide

1

The *VMware Cloud Foundation Upgrade Guide* describes how to upgrade Cloud Foundation. The information includes prerequisites, step-by-step configuration instructions, and suggested best practices.

Intended Audience

The *VMware Cloud Foundation Upgrade Guide* is intended for cloud architects, infrastructure administrators, and cloud administrators who are familiar with and want to use VMware software to quickly deploy and manage an SDDC. The information in this document is written for experienced data center system administrators who are familiar with:

- Concepts of virtualization, software-defined data centers, virtual infrastructure (VI), and virtual desktop infrastructure (VDI)
- VMware virtualization technologies, such as VMware ESXi™, the hypervisor
- Software-defined networking using VMware NSX®
- Software-defined storage using VMware vSAN™
- IP networks

Additionally, you should be familiar with these VMware software products, software components, and their features:

- VMware vSphere®
- VMware vCenter Server® and VMware vCenter Server® Appliance™
- VMware Platform Services Controller™
- VMware vRealize® Log Insight™
- VMware Horizon®
- VMware App Volumes™

Related Publications

The *VMware Cloud Foundation Planning and Preparation Guide* provides detailed information about the software, tools, and external services that are required for Cloud Foundation.

The *VMware Cloud Foundation Architecture and Deployment Guide* contains detailed information about a Cloud Foundation system, its components, and the network topology of a deployed system.

The *VMware Cloud Foundation Operations and Administration Guide* provides information about managing a VMware Cloud Foundation™ system, including managing the system's virtual infrastructure, managing users, configuring and deploying service offerings, and upgrading and monitoring the system.

Read the Supporting Documents

2

Before starting a Cloud Foundation upgrade, read the documents mentioned here.

Release Notes

Before beginning the upgrade, check the release notes. Known upgrade issues and workarounds are documented in the Cloud Foundation Release Notes. Reading the upgrade issues before you begin the upgrade process can save you time and effort. See <https://docs.vmware.com/en/VMware-Cloud-Foundation/index.html>.

Ports and Protocols

Read the Port Requirements section in the *VMware Cloud Foundation Planning and Preparation Guide* to ensure that the required ports are open before you begin an upgrade.

About Cloud Foundation Bundles

3

Lifecycle Management (LCM) enables you to perform the automated updates on the Cloud Foundation services (SDDC Manager and internal services) and the VMware software (NSX for vSphere, vCenter Server, ESXi, PSC, vRealize Suite, NSX-T, and vRSCLM) in your environment. The update bundles can be downloaded and applied manually or scheduled within your maintenance window, allowing for flexibility in your application.

Cloud Foundation upgrades are sequential. This means that you can upgrade to Cloud Foundation 3.8.1 only from a 3.8 installation. If you are at a version earlier than 3.8, refer to the 3.8 documentation for information on upgrading to 3.8.

Bundle Types

Cloud Foundation includes two types of bundles.

Upgrade Bundles

An upgrade bundle contains bits to update the appropriate Cloud Foundation software components in your management domain or VI workload domain. In most cases, an upgrade bundle must be applied to the management domain before it can be applied to workload domains.

Some upgrade bundles are cumulative bundles. With a cumulative upgrade bundle, you can directly upgrade the appropriate software in your workload domain to the version contained in the cumulative bundle rather than applying sequential upgrades to reach the target version. Cumulative bundles are available only for vCenter Server, Platform Services Controller, and ESXi.

Note that you can apply a cumulative bundle to a workload domain only if the target release in the bundle is lower than or at the same version as the management domain. If the cumulative bundle is available for both the management domain and VI workload domains, you must apply it to the management domain before applying it to VI workload domains.

Install Bundles

Cloud Foundation includes the following install bundles.

- VI workload domain install bundle is used to deploy later versions of the software components instead of the versions in your original Cloud Foundation installation. It includes software bits for vCenter Server and NSX for vSphere.
- Individual install bundles for vRealize products are used for deploying vRealize components.
- NSX-T install bundle is used for deploying an NSX-T based VI workload domain.
- Horizon 7 install bundle is used for creating a Horizon domain.

Download Bundles

If you are logged in to your My VMware account, LCM automatically polls the depot to access the bundles. You receive a notification when a bundle is available and can then download the bundle.

If you do not have internet connectivity, you can either use a proxy server to access the depot, or download the bundles manually.

Online Bundle Download

You can either download bundles through the SDDC Manager dashboard or through a proxy server.

Procedure

1 [Download Bundles from SDDC Manager](#)

When upgrade bundles are available for your environment, a message is displayed on the SDDC Manager Dashboard.

2 [Download Bundles With a Proxy Server](#)

If you do not have internet access, you can use a proxy server to download the LCM bundles. LCM only supports proxy servers that do not require authentication.

Download Bundles from SDDC Manager

When upgrade bundles are available for your environment, a message is displayed on the SDDC Manager Dashboard.

To download an install bundle, navigate to **Repository > Bundles** on the SDDC Manager Dashboard to view the available bundles. Then follow the instructions in step 4 below.

Prerequisites

If you have previously edited the application-prod.properties file on SDDC Manager VM to download upgrade bundles in an offline mode, you must edit it again before downloading bundles from SDDC Manager. Follow the steps below:

- 1 Using SSH, log in to the SDDC Manager VM with the following credentials:

Username: vcf

Password: use the password specified in the deployment parameter sheet

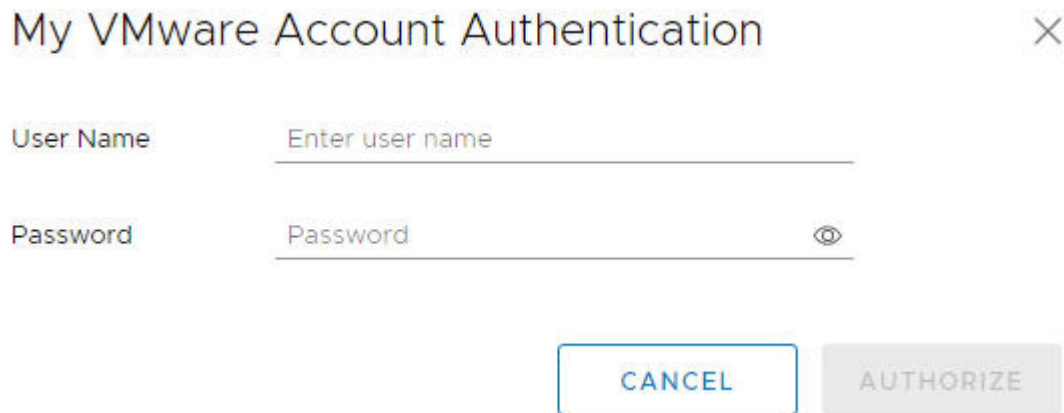
- 2 Enter `su` to switch to the root user.
- 3 Open the `/opt/vmware/vcf/lcm/lcm-app/conf/application-prod.properties` file.
- 4 Set `lcm.core.enableManifestPolling=true`.
- 5 Restart LCM service with the command below:

```
systemctl restart lcm
```

Procedure

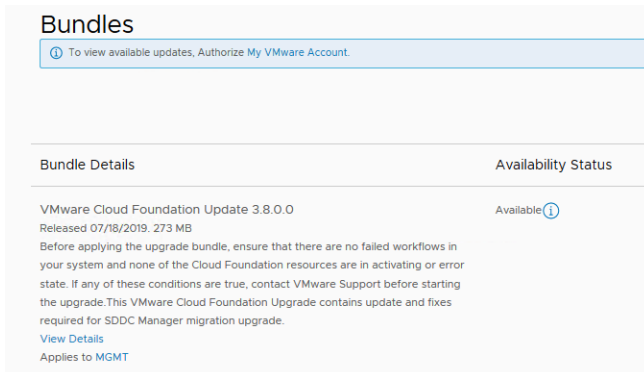
- 1 Log in to your My VMware Account.
 - a On the SDDC Manager Dashboard, click **Administration > Repository Settings**.
 - b Click **Authenticate**.

The My VMware Account Authentication page appears.



The image shows a web form titled "My VMware Account Authentication" with a close button (X) in the top right corner. Below the title, there are two input fields: "User Name" with a placeholder "Enter user name" and "Password" with a placeholder "Password" and an eye icon for toggling visibility. At the bottom right, there are two buttons: "CANCEL" (blue outline) and "AUTHORIZE" (gray).

- c Type your user name and password.
 - d Click **Authorize**.
- 2 To download a bundle, navigate to **Repository > Bundles** on the SDDC Manager Dashboard to view the available bundles.



The image shows a screenshot of the "Bundles" page in the SDDC Manager Dashboard. At the top, there is a message: "To view available updates, Authorize My VMware Account." Below this, there is a table with two columns: "Bundle Details" and "Availability Status". The table contains one entry for "VMware Cloud Foundation Update 3.8.0.0", which is marked as "Available". The bundle details include the release date (07/18/2019), size (273 MB), and a warning about failed workflows. There are links for "View Details" and "Applies to MGMT".

Bundle Details	Availability Status
VMware Cloud Foundation Update 3.8.0.0 Released 07/18/2019. 273 MB Before applying the upgrade bundle, ensure that there are no failed workflows in your system and none of the Cloud Foundation resources are in activating or error state. If any of these conditions are true, contact VMware Support before starting the upgrade. This VMware Cloud Foundation Upgrade contains update and fixes required for SDDC Manager migration upgrade. View Details Applies to MGMT	Available

The Bundles page displays the bundles available for download. The Bundle Details section displays the bundle version and release date.

If the bundle can be applied right away, the Bundle Details column displays the workload domains to which the bundle needs to be applied to, and the Availability column says Available. If another bundle needs to be applied before a particular bundle, the Availability field displays Future.

3 Click **View Details for more information about the bundle.**

VMware Cloud Foundation Update 3.8.0.0 [Exit Details](#)

Released 07/18/2019 273 MB

Before applying the upgrade bundle, ensure that there are no failed workflows in your system and none of the Cloud Foundation resources are in activating or error state. If any of these conditions are true, contact VMware support before starting the upgrade. This VMware Cloud Foundation Upgrade contains update and fixes required for SDDC Manager migration upgrade.

Additional Bundle Details

Version	3.6.0-114161
Severity	Critical
Vendor	VMware
Bundle ID	a165fa0a-5210-4db4-9f74-5d2b50f81363
Software Component 1	LCM
Description	LCM update
Update to Version	3.8.0-RELEASE-14136202
Required Version	3.7.2-RELEASE-13773680
Release Date	07/18/2019
Vendor	VMware
Software Component 2	SDDC Manager UI App
Description	SDDC Manager UI update
Update to Version	3.8.0-RELEASE-14135429
Required Version	3.7.2-RELEASE-13773626
Release Date	07/18/2019
Vendor	VMware

The bundle page displays the version, bundle ID, and software components to be updated by this bundle.

4 Click **Exit Details.**

5 Do one of the following:

- Click **Download Now**.

The bundle download begins right away.

Note In VMware Cloud Foundation 3.8.1, if JUMP & SDDC manager are running at the same time and the time zone , then the download starts in the next 2 minutes.

- Click **Schedule Download**.

Select the date and time for the bundle download and click **Schedule**.

Results

The Download Status section on the Bundles page displays the date and time at which the bundle download has been scheduled. When the download begins, the status bar displays the download progress.

Download Bundles With a Proxy Server

If you do not have internet access, you can use a proxy server to download the LCM bundles. LCM only supports proxy servers that do not require authentication.

Procedure

- 1 Using SSH, log in to the SDDC Manager VM with the user name `vcf` and password you specified in the deployment parameter sheet.
- 2 Type `su` to switch to the root account.
- 3 Open the `/opt/vmware/vcf/lcm/lcm-app/conf/application-prod.properties` file.
- 4 Update the following lines to the end of the file:

```
lcm.depot.adapter.proxyEnabled=true
lcm.depot.adapter.proxyHost=proxy IP address
lcm.depot.adapter.proxyPort=proxy port
```

- 5 Save and close the file.
- 6 Restart the LCM server by typing the following command in the console window:
`systemctl restart lcm`
- 7 Wait for 5 minutes and then download the bundles.

Offline Bundle Download for VMware Cloud Foundation 3.8

LCM polls the VMware depot to access update bundles. If you do not have internet connectivity in your Cloud Foundation system, you can use the Bundle Transfer utility to manually download the bundles from the depot on your local computer and then upload them to SDDC Manager. The utility identifies applicable bundles based on the current software versions in your environment based on a marker file generated on the SDDC Manager VM.

You must download and apply the first bundle (SDDC Manager bundle) before downloading the remaining upgrade bundles.

Prerequisites

Ensure you have access to a Windows or Linux computer with internet connectivity for downloading the bundles. The computer must have Java 8 or later.

Procedure

- 1 Using SSH, log in to the SDDC Manager VM with the user name `vcf` and password you specified in the deployment parameter sheet.
- 2 Change directories:

```
cd /opt/vmware/vcf/lcm/lcm-tools/bin
```

- 3 Generate a marker file:

```
./lcm-bundle-transfer-util --generateMarker
```

The marker file (`markerFile`) is a JSON file that contains information on the current software versions running on SDDC Manager. It also contains the bundles IDs for bundles that were downloaded before this file was generated. The `markerFile.md5` contains the checksum for the `markerFile`.

The output contains the directory where the marker file is generated.

- 4 Copy the `/opt/vmware/vcf/lcm/lcm-tools` directory, and the `markerFile` and `markerFile.md5` files from the location displayed in the output of step 3 to a computer with internet access.

The `/opt/vmware/vcf/lcm/lcm-tools` directory includes the bundle transfer utility required for the next step.

- 5 On the computer with internet access, run the following command.

```
./lcm-bundle-transfer-util -download
                        -outputDirectory ${absolute-path-output-dir}
                        -sku ${sku}
                        -depotUser ${depotUser}
                        -markerFile ${absolute-path-markerFile}
                        -markerMd5File ${absolute-path-markerFile.md5}
```

where

<i>absolute-path-output-dir</i>	Path to the directory where the bundle files are to be downloaded. This directory folder must have 777 permissions. If you do not specify the download directory, bundles are downloaded to the default directory with 777 permissions.
<i>sku</i>	Optional. SKU or Service Provider of the index file.
<i>depotUser</i>	User name for myVMware depot. You are prompted to enter the depot user password. If there are any special characters in the password, specify the password within single quotes.
<i>markerFile</i>	Absolute path to the marker file, as generated in the above step. If you do not specify the path to the marker file, all update bundles on the depot are downloaded.
<i>markerMd5File</i>	Absolute path to the marker MD5 checksum file, as generated in the above step.

The utility generates a delta file (`deltaFileDownloaded`) in the download directory based on the software versions in the marker file and the update bundles available on the depot. The applicable bundles identified in the delta file are downloaded. Download progress for each bundle is displayed. Initially, only the SDDC Manager bundle will be available.

- 6 Copy the update bundle directory from the external computer to the SDDC Manager VM.

For example:

```
scp -pr /root/vcf372tovcf38Bundle vcf@SDDC_MANAGER_IP:/nfs/vmware/vcf/nfs-mount/
```

The `scp` command in the example above creates a directory named `vcf372tovcf38Bundle` in the `/nfs/vmware/vcf/nfs-mount/` directory.

- 7 In the SDDC Manager VM, change the ownership and permissions of the uploaded bundle.

```
chmod -R 0777 /nfs/vmware/vcf/nfs-mount/vcf372tovcf38Bundle
```

- 8 In the SDDC Manager VM, upload the bundle files to the internal LCM repository. You must upload the upgrade and install bundles.

```
cd /opt/vmware/vcf/lcm/lcm-tools/bin
./lcm-bundle-transfer-util -upload -bundleDirectory ${absolute-path-output-dir}
```

where *absolute-path-output-dir* is the directory where the bundle files have been be uploaded, or `/nfs/vmware/vcf/nfs-mount/vcf372tovcf38Bundle` as shown in the previous step.

The utility uploads the bundles specified in the `deltaFileDownloaded` file. The console displays upload status for each bundle.

- 9 Apply the SDDC Manager bundle to the management domain. See [Apply the SDDC Manager Bundle](#).
- 10 After the SDDC Manager bundle is successfully applied, repeat steps 3-8 to download the remaining upgrade bundles.

Offline Bundle Download for VMware Cloud Foundation 3.8.1

LCM polls the VMware depot to access update bundles. If you do not have internet connectivity in your Cloud Foundation system, you can use the Bundle Transfer utility to manually download the bundles from the depot on your local computer and then upload them to SDDC Manager. The utility identifies applicable bundles based on the current software versions in your environment based on a marker file generated on the SDDC Manager VM.

Prerequisites

Ensure you have access to a Windows or Linux computer with internet connectivity for downloading the bundles. The computer must have Java 8 or later.

Procedure

- 1 Using SSH, log in to the SDDC Manager VM with the user name `vcf` and password you specified in the deployment parameter sheet.
- 2 Change directories:

```
cd /opt/vmware/vcf/lcm/lcm-tools/bin
```

- 3 Generate a marker file:

```
./lcm-bundle-transfer-util --generateMarker
```

The marker file (`markerFile`) is a JSON file that contains information on the current software versions running on SDDC Manager. It also contains the bundles IDs for bundles that were downloaded before this file was generated. The `markerFile.md5` contains the checksum for the `markerFile`.

The output contains the directory where the marker file is generated.

- 4 Copy the `/opt/vmware/vcf/lcm/lcm-tools` directory, and the `markerFile` and `markerFile.md5` files from the location displayed in the output of step 3 to a computer with internet access.

The `/opt/vmware/vcf/lcm/lcm-tools` directory includes the bundle transfer utility required for the next step.

- 5 On the computer with internet access, run the following command.

```
./lcm-bundle-transfer-util -download
                        -outputDirectory ${absolute-path-output-dir}
                        -sku ${sku}
                        -depotUser ${depotUser}
                        -markerFile ${absolute-path-markerFile}
                        -markerMd5File ${absolute-path-markerFile.md5}
```

where

<i>absolute-path-output-dir</i>	Path to the directory where the bundle files are to be downloaded. This directory folder must have 777 permissions. If you do not specify the download directory, bundles are downloaded to the default directory with 777 permissions.
<i>sku</i>	Optional. SKU or Service Provider of the index file.
<i>depotUser</i>	User name for myVMware depot. You are prompted to enter the depot user password. If there are any special characters in the password, specify the password within single quotes.
<i>markerFile</i>	Absolute path to the marker file, as generated in the above step. If you do not specify the path to the marker file, all update bundles on the depot are downloaded.
<i>markerMd5File</i>	Absolute path to the marker MD5 checksum file, as generated in the above step.

The utility generates a delta file (`deltaFileDownloaded`) in the download directory based on the software versions in the marker file and the update bundles available on the depot. The applicable bundles identified in the delta file are downloaded. Download progress for each bundle is displayed. Initially, only the SDDC Manager bundle will be available.

- 6 Copy the update bundle directory from the external computer to the SDDC Manager VM.

For example:

```
scp -pr /root/vcf372tovcf38Bundle vcf@SDDC_MANAGER_IP:/nfs/vmware/vcf/nfs-mount/
```

The `scp` command in the example above creates a directory named `vcf372tovcf38Bundle` in the `/nfs/vmware/vcf/nfs-mount/` directory.

- 7 In the SDDC Manager VM, change the ownership and permissions of the uploaded bundle.

```
chmod -R 0777 /nfs/vmware/vcf/nfs-mount/vcf372tovcf38Bundle
```

- 8 In the SDDC Manager VM, upload the bundle files to the internal LCM repository. You must upload the upgrade and install bundles.

```
cd /opt/vmware/vcf/lcm/lcm-tools/bin
./lcm-bundle-transfer-util -upload -bundleDirectory ${absolute-path-output-dir}
```

where *absolute-path-output-dir* is the directory where the bundle files have been be uploaded, or `/nfs/vmware/vcf/nfs-mount/vcf372tovcf38Bundle` as shown in the previous step.

The utility uploads the bundles specified in the `deltaFileDownloaded` file. The console displays upload status for each bundle.

- 9 Apply the SDDC Manager bundle to the management domain. See [Apply the SDDC Manager Bundle](#).
- 10 After the SDDC Manager bundle is successfully applied, repeat steps 3-8 to download the remaining upgrade bundles.

Download Specific Bundles

Bundle transfer utility is a command line tool which is specifically used to identify the bundles applicable to the current domain, download the bundles using the credentials, and upload them to SDDC Manager.

Starting from Cloud Foundation version 3.7.1, the additional options have been introduced for the bundle transfer utility tool.

The bundle transfer utility tool includes the following options.

- You can selectively download bundles based on the product version:
 - a Display the list of the applicable bundles along with the product version using the following command.

```
./lcm-bundle-transfer-util --depotUser ${depotUser} --listBundles --productVersion $
{product_version}
(OR)
./lcm-bundle-transfer-util -du ${depotUser} -l -p ${product_version}
```

For example:

```
Sample applicable bundle list
Below are applicable bundles:

*****
Bundle                Product Version      Bundle Size (in MB)   Patch/Install Softwares
*****
bundle-10668          3.7.1.0              432.0 MB              ESX_HOST-6.7.0-12871208-PATCH
*****
```


- b Download the applicable bundles based on the selected product version.

```
./lcm-bundle-transfer-util --download --outputDirectory ${absolute-path-output-dir}
--depotUser ${depotUser} --productVersion ${product_version}
(OR)
./lcm-bundle-transfer-util -d -op ${absolute-path-output-dir} -du ${depotUser} -p $
{product_version}
```

For example, to download all the bundles released for the 3.7.1 version, run the tool as follows:

```
./lcm-bundle-transfer-util --download --depotUser 'test_depot_user@vmware.com'
--outputDirectory /Users/${userName}/downloadedBundle -p 3.7.1.0
```

- c Upload all the bundles specific to the product version.

```
./lcm-bundle-transfer-util --upload --bundleDirectory ${absolute-path-bundles-dir}
--productVersion ${product_version}
(OR)
./lcm-bundle-transfer-util --upload --bundleDirectory ${absolute-path-bundles-dir}
-p ${product_version}
```

For example, to upload all bundles released for the 3.7.1.0 version, run the tool as follows:

```
./lcm-bundle-transfer-util --upload --bundleDirectory
/nfs/vmware/vcf/nfs-mount/downloadedBundles -p 3.7.1.0
```

- You can download only a single applicable bundle.

- a Download the single bundle.

```
./lcm-bundle-transfer-util --download --outputDirectory ${absolute-path-output-dir}
--depotUser ${depotUser} --bundle ${bundle_name}
(OR)
./lcm-bundle-transfer-util --download --outputDirectory ${absolute-path-output-dir}
--depotUser ${depotUser} -b ${bundle_name}
```

For example:

```
./lcm-bundle-transfer-util --download --outputDirectory
/nfs/vmware/vcf/nfs-mount/downloadedBundles
--depotUser 'test_depot_user@vmware.com' --bundle bundle-8203
```

- b Upload the single bundle to LCM.

```
./lcm-bundle-transfer-util --upload --bundleDirectory ${absolute-path-bundles-dir}
--bundle ${bundle_name}
(OR)
./lcm-bundle-transfer-util --upload --bundleDirectory ${absolute-path-bundles-dir}
-b ${bundle_name}
```

For example:

```
./lcm-bundle-transfer-util --upload --bundleDirectory  
/nfs/vmware/vcf/nfs-mount/downloadedBundles -b bundle-8203
```

Note The above additional options can be run only on the SDDC Manager machines. For these options on SDDC Manager, you should always run the tool as vcf user.

View Bundle Download History

The Bundle Download History page displays all bundles that have been downloaded.

Procedure

- ◆ In the SDDC Manager Dashboard, click **Repository > Download History**.

All downloaded bundles are displayed. Click **View Details** to see bundle metadata details.

Upgrade Cloud Foundation 3.8.1

4

Cloud Foundation upgrades are sequential. So in order to upgrade to a release, your environment must be on the version before that release.

Upgrades are applied on a workload domain basis. The management domain contains the core infrastructure, so you must upgrade the management domain before upgrading the other workload domains. You must upgrade all required components to keep your system in an optimum state.

You must upgrade the Horizon 7 workload domains manually.

You must upgrade the components in the order in which they are documented.

- vRealize Lifecycle Management
- vCenter
- ESXi
- Horizon 7

Upgrade Prerequisites

Meet the following prerequisites before starting an upgrade.

- 1 Take a backup of the SDDC Manager VM.
- 2 Take a snapshot of each VM in your environment.
- 3 If you have NSX-T workload domains in your environment, ensure they are at version 2.4. If they are at a lower version, upgrade them to 2.4 manually.
- 4 vRealize Suite Lifecycle Manager is required to upgrade vRealize components. If vRealize Suite Lifecycle Manager is already deployed, no action is required. If vRealize Suite Lifecycle Manager is not already deployed, you can deploy it before you upgrade the vRealize components. To deploy vRealize Suite Lifecycle Manager, see [Deploy vRealize Lifecycle Manager in Cloud Foundation](#).
- 5 Do not run any domain operations while an update is in progress. Domain operations are creating a new VI domain, adding hosts to a cluster or adding a cluster to a workload domain, and removing clusters or hosts from a workload domain. Do not even run any password rotate or certificate rotate operations or vRealize work flows like deployment, expansion or associations.
- 6 You must have downloaded the upgrade bundles. See [Download Bundles](#).

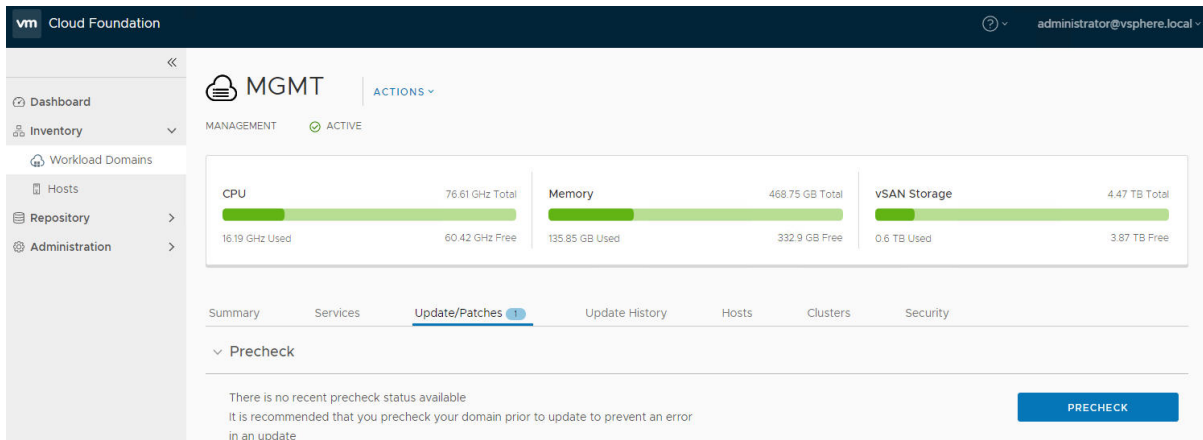
- 7 Ensure that there are no failed workflows in your system and none of the Cloud Foundation resources are in activating or error state. If any of these conditions are true, contact VMware Support before starting the upgrade.
- 8 Ensure that you have configured dual authentication before the upgrade. For more information, see [Configure Dual Authentication](#).

Perform Upgrade Precheck

You must perform a precheck before applying any bundle to ensure that your system is ready for the upgrade.

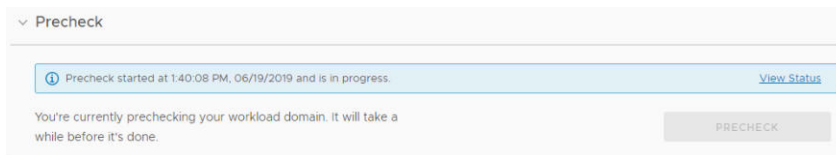
Procedure

- 1 Navigate to the Updates/Patches tab of the management domain or workload domain where you need to apply the bundle.



- 2 Click **Precheck** to validate that the environment is ready to be upgraded.

A message appears indicating the time at which the precheck was started.



3 Click **View Status** to see detailed tasks and their status.

Summary Services **Update/Patches** Update History Hosts Clusters Security

Upgrade Precheck [Exit Details](#)

Precheck failed at 1:41:18 PM, 06/19/2019

It is recommended that you precheck your domain prior to update to prevent an error in an update

PRECHECK

PRECHECK FAILED RESOURCES

- OPERATIONS_MANAGER ✓ Succeeded
 - LCM ✓ Succeeded
 - COMMON_SERVICES ✓ Succeeded
 - SOLUTIONS_MANAGER ✓ Succeeded
 - SDDC_MANAGER_UI ✓ Succeeded
 - DOMAIN_MANAGER ✓ Succeeded
- VSAN - SDDC-Cluster1 ❌ Failed [Retry Precheck](#)
- nsxManager.vrack.vsphere.local ✓ Succeeded
- loginsight-node-1.vrack.vsphere.local ❌ Failed [Retry Precheck](#)
- psc-1.vrack.vsphere.local ✓ Succeeded
- vcenter-1.vrack.vsphere.local ✓ Succeeded
- psc-2.vrack.vsphere.local ✓ Succeeded
- 4 ESXi Host
 - esxi-4 ✓ Succeeded
 - esxi-3 ✓ Succeeded
 - esxi-2 ✓ Succeeded
 - esxi-1 ✓ Succeeded

Note vRealize Suite Lifecycle Manager is required in order to upgrade vRealize Log Insight, vRealize Automation, and vRealize Operations. If you do not plan to use any of the vRealize products in your Cloud Foundation environment, you can ignore precheck failures related to vRealize Suite Lifecycle Manager not being present.

4 To see details for a task, click the Expand arrow.

If a precheck task failed, fix the issue, and click **Retry Precheck** to run the task again. You can also click **Precheck Failed Resources** to retry all failed tasks.

Results

The precheck result is displayed at the top of the Upgrade Precheck Details window. If you click **Exit Details**, the precheck result is displayed at the top of the Precheck section in the Updates/Patches tab.

Ensure that the precheck results are green before proceeding. A failed precheck may cause the update to fail.

Upgrade the Management Domain to 3.8.1

You must upgrade the management domain before upgrading the workload domains in your environment.

Upgrade Cloud Foundation Software

You upgrade Cloud Foundation by applying the two bundles to the management domain.

The two bundles upgrade the following components:

- SDDC Manager bundle: Upgrade LCM and the SDDC Manager UI.
- Configuration Drift Bundle: Applies configuration drift.

Apply the SDDC Manager Bundle for 3.8.1

The Cloud Foundation upgrade bundle upgrades Cloud Foundation and third party services on the SDDC Manager VM.

Prerequisites

Download the bundle. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the management domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 The Available Updates section displays the bundle that you downloaded before starting the upgrade.
- 4 Click **Update Now** or **Schedule Update** and select the date and time for the bundle to be applied.

The Cloud Foundation Update Status window displays the components that will be upgraded and the upgrade status. Click **View Update Activity** to view the detailed tasks.

After the upgrade is completed, a green bar with a check mark is displayed.

- 5 Click **Finish**.

Apply the Configuration Drift Bundle

The configuration drift bundle applies the configuration required for Cloud Foundation version 3.8.1.

You can only apply the configuration drift bundle after you have applied the SDDC Manager bundle and the SDDC Manager migration bundle.

Prerequisites

You must have downloaded the configuration drift bundle. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the management domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the bundle and click the date and time for the bundle to be applied.

After the upgrade is completed, a green bar with a check mark is displayed.

Upgrade vRealize Suite Lifecycle Manager

If vRealize Suite Lifecycle Manager is deployed in your existing Cloud Foundation environment, you must upgrade it in order to upgrade any other vRealize products that you have deployed in your Cloud Foundation environment.

If vRealize Suite Lifecycle Manager is not already deployed in your Cloud Foundation environment, you can deploy it now instead of upgrading. See [Deploy vRealize Suite Lifecycle Manager in Cloud Foundation](#).

Prerequisites

Download the upgrade bundle. See [Download Bundles](#).

Procedure

- 1 Navigate to the **Update/Patches** tab of the management domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 Click **Update Now** to start the update or click **Schedule Update** to schedule the update for a specific date and time depending on your maintenance window.
- 4 Monitor the update. See [Chapter 8 Monitor Updates](#).

Upgrade vCenter Server and Platform Services Controllers

The vCenter bundle upgrades vCenter and Platform Services Controllers on the management domain and the workload domain.

Prerequisites

Download the upgrade bundle. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the management domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the vCenter bundle and click the date and time for the bundle to be applied.

After the upgrade is completed, a green bar with a check mark is displayed.

Upgrade ESXi

The ESXi bundle upgrades ESXi on the domain.

If you want to skip any hosts while applying an ESXi update to the management domain or a VI workload domain, you must add these hosts to the `application-prod.properties` file before you begin the update. See [Chapter 7 Skip Hosts During ESXi Update](#).

Prerequisites

The ESXi bundle must have been downloaded. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the ESXi bundle and click the date and time for the bundle to be applied.

After the upgrade is completed, a green bar with a check mark is displayed.

Upgrade NSX-T Workload Domains

Read this section only if you have NSX-T based VI workload domains in your environment. If you have both NSX for vSphere and NSX-T workload domains in your environment, you can upgrade them in any order.

Applying the NSX-T bundle on a workload domain upgrades NSX-T 2.4.1 to 2.4.2. The upgrade is sequential and the components are upgraded in the following order:

- 1 Upgrade coordinator
- 2 Host clusters
- 3 NSX-T Edge clusters
- 4 NSX-T Managers

All NSX-T workload domains share the NSX-T instance, so you cannot perform any operations on the NSX-T workload domains while NSX-T is being upgraded.

Note If your workload domain is on NSX-T 2.4, you must upgrade it to NSX-T 2.4.1 manually before upgrading it to 2.4.2.

Prerequisites

- All applicable updates must have been applied to all NSX-T workload domains for the NSX-T upgrade bundle to be available for download. Otherwise, the status of the NSX-T bundle is displayed as Pending instead of Available for all workload domains.
- You must have downloaded the NSX-T upgrade bundle. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of an NSX-T domain.

Note that although you are upgrading NSX-T from the workload domain you have navigated to, all operations are performed on all NSX-T domains in your environment.

- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).

The NSX-T precheck is run on all NSX-T workload domains in your environment.

- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for NSX-T bundle and click the date and time for the bundle to be applied.

The NSX-T Upgrade Confirmation dialog box appears.

- 4 Click **Confirm**.

The NSX-T upgrade begins and the upgrade components are displayed. The upgrade view displayed here pertains to the workload domain where you applied the bundle. Click the link to the associated workload domains to see the components pertaining to those workload domains.

If a component upgrade fails, the failure is displayed across all associated workload domains.

Resolve the issue and retry the failed task.

Results

When all NSX-T components are upgraded successfully, a message with a green background and check mark is displayed.

Upgrade vCenter Server

The vCenter bundle upgrades vCenter Server on workload domains.

Prerequisites

The vCenter Server bundle must have been downloaded. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the workload domain you want to upgrade.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the vCenter Server bundle and click the date and time for the bundle to be applied.

After the upgrade is completed, a green bar with a check mark is displayed.

Upgrade ESXi with Custom ISO

You can upgrade ESXi with a custom ISO from your vendor. This feature is available for Cloud Foundation version 3.5.1 and later.

Prerequisites

Download the appropriate vendor-specific ISO on a computer with internet access.

Procedure

- 1 Download the ESXi upgrade bundle. See [Download Bundles from SDDC Manager](#).
- 2 Using SSH, log in to the SDDC Manager VM.
- 3 Create a directory for the vendor ISO under the `/nfs/vmware/vcf/nfs-mount` directory. For example, `/nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-binaries`.
- 4 Copy the vendor-specific ISO to the directory you created on the SDDC Manager VM. For example, you can copy the ISO to the `/nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-binaries` directory.
- 5 Change permissions on the directory where you copied the ISO. For example,


```
chmod -R 775 /nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-binaries/
```
- 6 Change owner to vcf.


```
chown -R vcf_lcm:vcf /nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-binaries/
```
- 7 Create an ESX custom image JSON using the following template.

```
{
  "esxCustomImageSpecList": [{
    "bundleId": "ID",
    "targetEsxVersion": "version",
    "useVcfBundle": false,
    "customIsoAbsolutePath": "Path_to_ISO"
  }]
}
```

where

Parameter	Description and Example Value
bundleId	<p>ID of the ESXi upgrade bundle you downloaded. You can retrieve the bundle ID by navigating to the Repository > Bundles page and clicking View Details to view the bundle ID.</p> <p>For example, 8c0de63d-b522-4db8-be6c-f1e0ab7ef554.</p> <p>Note If an incorrect bundle ID is provided, the upgrade will proceed with the Cloud Foundation stock ISO and replace the custom VIBs in your environment with the stock VIBs.</p>
targetEsxVersion	ESXi version in the custom image to be applied.

Parameter	Description and Example Value
useVcfBundle	Specifies whether the Cloud Foundation ESXi bundle is to be used for the upgrade. Note If you want to upgrade with a custom ISO image, ensure that this is set to false.
customIsoAbsolutePath	Path to the custom ISO file on the SDDC Manager VM. For example, /nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-binaries/ VMware-ESXi-6.7.0-Update1-10302608-HPE-Gen9plus-670.U1.10.3.5.12-Oct2018.iso

Here is an example of a completed JSON template.

```
{
  "esxCustomImageSpecList": [{
    "bundleId": "8c0de63d-b522-4db8-be6c-f1e0ab7ef554",
    "targetEsxVersion": "6.7.0-10302608",
    "useVcfBundle": false,
    "customIsoAbsolutePath":
    "/nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-binaries/VMware-ESXi-6.7.0-Update1-10302608-HPE-Gen9plus-670.U1.10.3.5.12-Oct2018.iso"
  }]
}
```

- 8 Save the JSON file as `esx-custom-image-upgrade-spec.json` in the `/nfs/vmware/vcf/nfs-mount`.

Note If the JSON file is not saved in the correct directory, the stock Cloud Foundation ISO is used for the upgrade and the custom VIBs are overwritten.

- 9 Set the correct permissions on the `/nfs/vmware/vcf/nfs-mount/esx-custom-image-upgrade-spec.json` file:

```
chmod -R 775 /nfs/vmware/vcf/nfs-mount/esx-custom-image-upgrade-spec.json
```

```
chown -R vcf_lcm:vcf /nfs/vmware/vcf/nfs-mount/esx-custom-image-upgrade-spec.json
```

- 10 Open the `/opt/vmware/vcf/lcm/lcm-app/conf/application-prod.properties` file.

- 11 In the `lcm.esx.upgrade.custom.image.spec=` parameter, add the path to the JSON file.

For example, `lcm.esx.upgrade.custom.image.spec=/nfs/vmware/vcf/nfs-mount/esx-custom-image-upgrade-spec.json`

- 12 On the SDDC Manager Dashboard, click **Inventory > Workload Domains**.

- 13 Click the management domain and then click **Updates/Patches**.

- 14 Schedule the ESXi upgrade bundle.

- 15 Monitor the upgrade progress. See [Chapter 8 Monitor Updates](#).

- 16 After the upgrade is complete, confirm the ESXi version by clicking **Current Versions**. The ESXi hosts table displays the current ESXi version.

Upgrade NSX-T

Read this section only if you have NSX-T based VI workload domains in your environment.

Applying the NSX-T bundle on a workload domain upgrades NSX-T 2.4.1 to 2.4.2. The upgrade is sequential, and the components are upgraded in the following order:

- 1 Upgrade coordinator
- 2 Host clusters
- 3 NSX-T Edge clusters
- 4 NSX-T Managers

All NSX-T workload domains share the NSX-T instance, so you cannot perform any operations on the NSX-T workload domains while NSX-T is being upgraded.

Note If your workload domain is on NSX-T 2.4, you must upgrade it to NSX-T 2.4.1 manually before upgrading it to 2.4.2.

Prerequisites

- All applicable updates must have been applied to all NSX-T workload domains for the NSX-T upgrade bundle to be available for download. Otherwise, the NSX-T bundle is not displayed and cannot be downloaded.
- You must have downloaded the NSX-T upgrade bundle. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of an NSX-T domain.

Note that although you are upgrading NSX-T from the workload domain you have navigated to, all operations are performed on all NSX-T domains in your environment.

- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).

The NSX-T precheck is run on all NSX-T workload domains in your environment.

- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for NSX-T bundle and click the date and time for the bundle to be applied.

The NSX-T Upgrade Confirmation dialog box appears.

- 4 Click **Confirm**.

The NSX-T upgrade begins and the upgrade components are displayed. The upgrade view displayed here pertains to the workload domain where you applied the bundle. Click the link to the associated workload domains to see the components pertaining to those workload domains.

If a component upgrade fails, the failure is displayed across all associated workload domains. Resolve the issue and retry the failed task.

Results

When all NSX-T components are upgraded successfully, a message with a green background and check mark is displayed.

Upgrade Cloud Foundation 3.8

5

Cloud Foundation upgrades are sequential. So in order to upgrade to a release, your environment must be on the version before that release.

Upgrades are applied on a workload domain basis. The management domain contains the core infrastructure, so you must upgrade the management domain before upgrading the other workload domains. You must upgrade all required components to keep your system in an optimum state.

You must upgrade the components in the order in which they are documented.

- vRealize Lifecycle Management
- vRealize Log Insight
- vRealize Operations
- vRealize Automation
- NSX
- vCenter
- ESXi

Upgrade Prerequisites

Meet the following prerequisites before starting an upgrade.

- 1 Take a backup of the SDDC Manager VM.
- 2 Take a snapshot of each VM in your environment.
- 3 If you have NSX-T workload domains in your environment, ensure they are at version 2.4. If they are at a lower version, upgrade them to 2.4 manually.
- 4 vRealize Suite Lifecycle Manager is required to upgrade vRealize Automation and vRealize Operations. If vRealize Suite Lifecycle Manager is already deployed, no action is required. If vRealize Suite Lifecycle Manager is not already deployed, you can deploy it before you upgrade the vRealize components. To deploy vRealize Suite Lifecycle Manager, see [Deploy vRealize Lifecycle Manager in Cloud Foundation](#) .

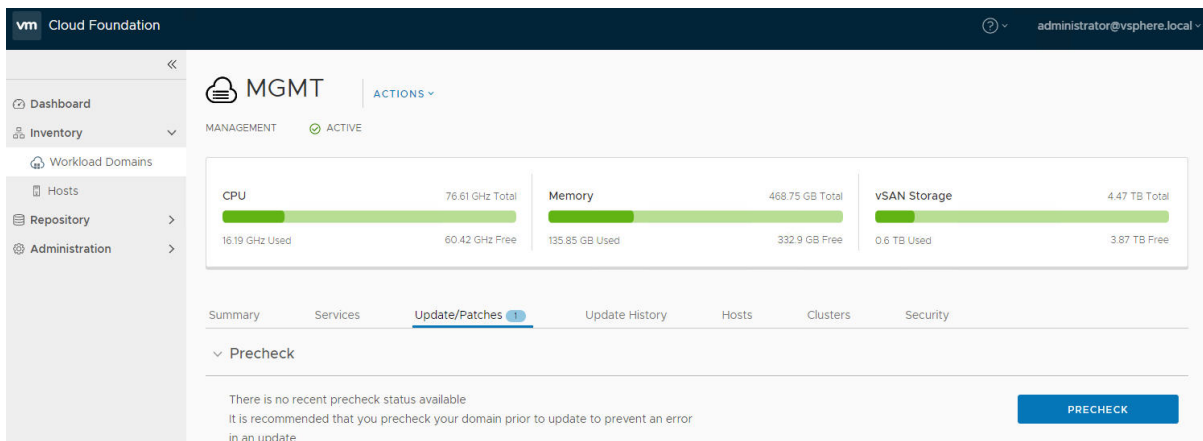
- 5 Do not run any domain operations while an update is in progress. Domain operations are creating a new VI domain, adding hosts to a cluster or adding a cluster to a workload domain, and removing clusters or hosts from a workload domain.
- 6 You must have downloaded the upgrade bundles. See [Download Bundles](#).
- 7 Ensure that there are no failed workflows in your system and none of the Cloud Foundation resources are in activating or error state. If any of these conditions are true, contact VMware Support before starting the upgrade.

Perform Upgrade Precheck

You must perform a precheck before applying any bundle to ensure that your system is ready for the upgrade.

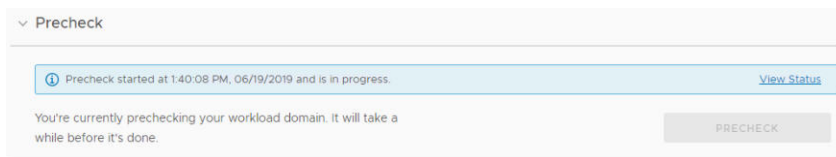
Procedure

- 1 Navigate to the Updates/Patches tab of the management domain or workload domain where you need to apply the bundle.



- 2 Click **Precheck** to validate that the environment is ready to be upgraded.

A message appears indicating the time at which the precheck was started.



3 Click **View Status** to see detailed tasks and their status.

Summary Services **Update/Patches** Update History Hosts Clusters Security [Exit Details](#)

Upgrade Precheck

Precheck failed at 1:41:18 PM, 06/19/2019

It is recommended that you precheck your domain prior to update to prevent an error in an update

PRECHECK

PRECHECK FAILED RESOURCES

- OPERATIONS_MANAGER ✓ Succeeded
 - LCM ✓ Succeeded
 - COMMON_SERVICES ✓ Succeeded
 - SOLUTIONS_MANAGER ✓ Succeeded
 - SDDC_MANAGER_UI ✓ Succeeded
 - DOMAIN_MANAGER ✓ Succeeded
 - VSAN - SDDC-Cluster1 ❌ Failed [Retry Precheck](#)
 - nsxManager.vrack.vsphere.local ✓ Succeeded
 - loginsight-node-1.vrack.vsphere.local ❌ Failed [Retry Precheck](#)
 - psc-1.vrack.vsphere.local ✓ Succeeded
 - vcenter-1.vrack.vsphere.local ✓ Succeeded
 - psc-2.vrack.vsphere.local ✓ Succeeded
 - 4 ESXi Host
 - esxi-4 ✓ Succeeded
 - esxi-3 ✓ Succeeded
 - esxi-2 ✓ Succeeded
 - esxi-1 ✓ Succeeded

Note vRealize Suite Lifecycle Manager is required in order to upgrade vRealize Log Insight, vRealize Automation, and vRealize Operations. If you do not plan to use any of the vRealize products in your Cloud Foundation environment, you can ignore precheck failures related to vRealize Suite Lifecycle Manager not being present.

4 To see details for a task, click the Expand arrow.

If a precheck task failed, fix the issue, and click **Retry Precheck** to run the task again. You can also click **Precheck Failed Resources** to retry all failed tasks.

Results

The precheck result is displayed at the top of the Upgrade Precheck Details window. If you click **Exit Details**, the precheck result is displayed at the top of the Precheck section in the Updates/Patches tab.

Ensure that the precheck results are green before proceeding. A failed precheck may cause the update to fail.

Upgrade the Management Domain to 3.8

You must upgrade the management domain before upgrading the workload domains in your environment.

Upgrade Cloud Foundation Software

You upgrade Cloud Foundation by applying three bundles to the management domain.

The three bundles upgrade the following components:

- SDDC Manager bundle: Upgrade LCM and the SDDC Manager UI.
- SDDC Manager Migration Bundle: Deploys a new SDDC Manager VM, exports the data from the old to the new VM, and transfers control to the new VM.
- Configuration Drift Bundle: Applies configuration drift.

Apply the SDDC Manager Bundle

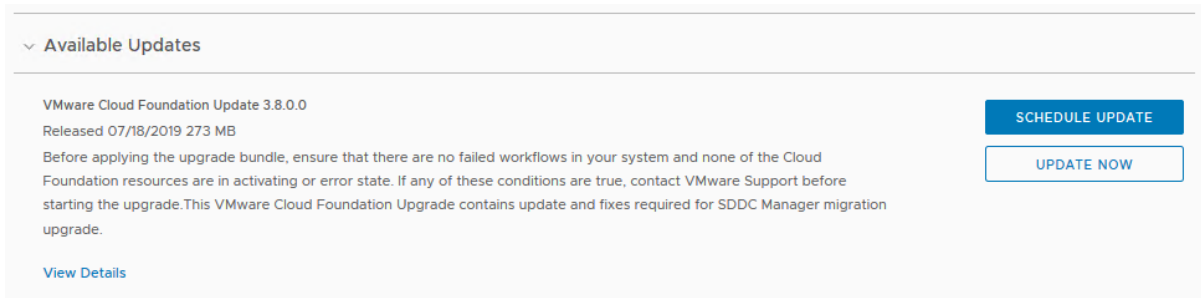
The SDDC Manager bundle upgrades LCM and SDDC Manager UI.

Prerequisites

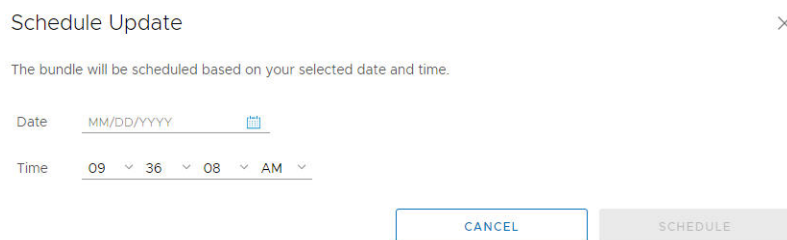
Download the bundle. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the management domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 The Available Updates section displays the bundle that you downloaded before starting the upgrade.



- 4 Click **Update Now** or **Schedule Update** and select the date and time for the bundle to be applied.



The Cloud Foundation Update Status window displays the components that will be upgraded and the upgrade status.

VMware Cloud Foundation Update Status

VMware Cloud Foundation Update 3.8.0.0

0 / 2 Resources Updated [CANCEL](#)

Released 06/16/2019 273 MB

[VIEW UPDATE ACTIVITY](#)

LCM	Queued	3.7.2-RELEASE-13773680	→	3.7.3-SNAPSHOT-13973826
SDDC MANAGER UI	Queued	3.7.2-RELEASE-13773626	→	3.7.3-SNAPSHOT-13965689

Click **View Update Activity** to view the detailed tasks.

Update Activity



Activity Time	Activity
6/19/19, 9:36 AM	Upgrade element resourceType: LCM resourceId: 083d879f-0a0b-45c1-a74f-fd4cb25e6fb1 recorded stage VCF_SERVICE_UPGRADE
6/19/19, 9:36 AM	LCM upgrade is accepted
6/19/19, 9:36 AM	Upgrade element resourceType: LCM resourceId: 083d879f-0a0b-45c1-a74f-fd4cb25e6fb1 recorded stage VCF_SERVICE_UPGRADE_INITIATION
6/19/19, 9:36 AM	LCM upgrade pre-validation successful
6/19/19, 9:36 AM	Upgrade element resourceType: LCM resourceId: 083d879f-0a0b-45c1-a74f-fd4cb25e6fb1 recorded stage VCF_SERVICE_UPGRADE_PRE_VALIDATION
6/19/19, 9:36 AM	Upgrade element resourceType: LCM resourceId: 083d879f-0a0b-45c1-a74f-fd4cb25e6fb1 recorded all stages ["VCF_SERVICE_UPGRADE_PRE_VALIDATION", "VCF_SERVICE_UPGRADE_INITIATION", "VCF_SERVICE_UPGRADE", "VCF_SERVICE_UPGRADE_POST_VALIDATION"]
6/19/19, 9:36 AM	Upgrade element resourceType: LCM resourceId: 083d879f-0a0b-45c1-a74f-fd4cb25e6fb1 status changed to INPROGRESS
6/19/19, 9:36 AM	Upgrade status changed to INPROGRESS
6/19/19, 9:35 AM	Upgrade scheduled

1 - 9 of 9 Logs

After the upgrade is completed, a green bar with a check mark is displayed.

[Back to Virtual Infrastructure Workload Domains](#)

MGMT ACTIONS

MANAGEMENT ACTIVE

CPU	Memory	vSAN Storage
76.61 GHz Total 2112 GHz Used 55.49 GHz Free	468.75 GB Total 127.03 GB Used 341.72 GB Free	4.47 TB Total 0.84 TB Used 3.63 TB Free

Summary Services Update/Patches **Update History** Hosts Clusters Security

[Exit Status](#)

VMware Cloud Foundation Update 3.8.0.0

Released 06/27/2019 273 MB

VCF Update Bundle - LCM,SDDC_MANAGER_UI

Update applied at 4:46 AM, 06/27/2019 - Elapsed Time : 05 minutes 35 seconds

[VIEW UPDATE ACTIVITY](#)

> LCM	Updated	3.7.2-RELEASE-13773680	→	3.8.0-RELEASE-14039482
> SDDC MANAGER UI	Updated	3.7.2-RELEASE-13773626	→	3.8.0-RELEASE-14039492

5 Click **Finish**.

What to do next

The remaining upgrade bundles are now available for download. Download them right away, or schedule them to be downloaded.

Apply SDDC Manager Migration Bundle

The SDDC Manager migration bundle deploys a new SDDC Manager with a temporary IP address that you specify. Data from the old VM is then transferred over to the new VM and the old VM is powered off. The new VM is then assigned the old VM's IP address.

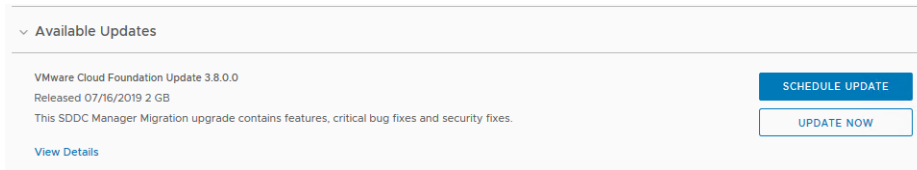
Ensure that the SDDC Manager migration bundle ID is 82cf229e-5563-4871-b0e4-706dcdd2f03b. If the bundle ID is different, refer to [KB article 75050](#) before applying the bundle.

Prerequisites

Download all remaining bundles. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the management domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the SDDC Manager migration bundle and click the date and time for the bundle to be applied.



- 4 In the Configure Target Appliance window, enter the following passwords:
 - root password for the new VM
 - In the VCF Password fields, enter the SDDC Manager password for the current and new SDDC Manager VM
 - Basic authentication password for the new VM

Password requirements:

Length	8-12 characters
Must Include	<ul style="list-style-type: none"> ■ mix of upper-case and lower-case letters ■ a number ■ a special character such as @ ! # \$ % ^ or ?
Cannot Include	& * { } [] () / \ ' " ` ~ , ; : . < >

- 5 Enter an available IP address from the bringup-networkpool to be used for deploying the new SDDC Manager VM.

This IP address is used only during the upgrade process.

- 6 Enter the subnet mask and gateway IP address.
- 7 Click **Next**.
- 8 Validate the information on the Review page and click **Finish**.

The Cloud Foundation Update Status window displays the components that will be upgraded and the upgrade status. Click **View Update Activity** to view the detailed tasks.

During this bundle application, a new SDDC Manager VM is deployed with the temporary IP address. Data from the old VM is imported to the new VM. After the data migration is complete, the old VM is switched off and renamed per the Cloud Foundation version on that VM. The new VM then inherits the IP address of the old SDDC Manager VM and the login page for the management vCenter Server is displayed. When you view the new SDDC Manager VM in the vSphere Client, it is named `sddc-manager`.

You may need to refresh the browser page and accept a certificate if the UI displays a message to do so.

- 9 Log in to the SDDC Manager Dashboard.
- 10 Log In to your My VMware Account again.

What to do next

During the SDDC Manager migration, the custom certificates are not migrated to the new SDDC Manager VM deployed during the migration. Instead, a VMCA issued certificate is installed on the new SDDC Manager VM. To install a new custom certificate on the new SDDC Manager VM, see [Managing Certificates for Cloud Foundation Components](#).

Apply the Configuration Drift Bundle

The configuration drift bundle applies the configuration required for Cloud Foundation version 3.8.1.

You can only apply the configuration drift bundle after you have applied the SDDC Manager bundle and the SDDC Manager migration bundle.

Prerequisites

You must have downloaded the configuration drift bundle. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the management domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).

- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the bundle and click the date and time for the bundle to be applied.

After the upgrade is completed, a green bar with a check mark is displayed.

Upgrade vRealize Suite Lifecycle Manager

If vRealize Suite Lifecycle Manager is deployed in your existing Cloud Foundation environment, you must upgrade it in order to upgrade any other vRealize products that you have deployed in your Cloud Foundation environment.

If vRealize Suite Lifecycle Manager is not already deployed in your Cloud Foundation environment, you can deploy it now instead of upgrading. See [Deploy vRealize Suite Lifecycle Manager in Cloud Foundation](#).

Prerequisites

Download the upgrade bundle. See [Download Bundles](#).

Procedure

- 1 Navigate to the **Update/Patches** tab of the management domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 Click **Update Now** to start the update or click **Schedule Update** to schedule the update for a specific date and time depending on your maintenance window.
- 4 Monitor the update. See [Chapter 8 Monitor Updates](#).

Upgrade vRealize Log Insight

You must upgrade vRealize Log Insight when you upgrade Cloud Foundation.

If your existing Cloud Foundation environment already has vRealize Suite Lifecycle Manager deployed, you can upgrade vRealize Log Insight from the SDDC Manager Dashboard. If you do not have vRealize Suite Lifecycle Manager deployed, you can upgrade vRealize Log Insight manually.

Upgrade vRealize Log Insight Using the SDDC Manager Dashboard

vRealize Log Insight is deployed in all Cloud Foundation environments and you should upgrade it when you upgrade Cloud Foundation.

Prerequisites

- Download the upgrade bundle. See [Download Bundles](#).
- [Upgrade vRealize Suite Lifecycle Manager](#) or [Deploy vRealize Suite Lifecycle Manager in Cloud Foundation](#).

Note If you do not have vRealize Suite Lifecycle Manager deployed in your Cloud Foundation system and do not want to deploy it, you can upgrade vRealize Log Insight manually. See [Upgrade vRealize Log Insight Manually](#).

Procedure

- 1 Navigate to the **Update/Patches** tab of the management domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 Click **Update Now** to start the update or click **Schedule Update** to schedule the update for a specific date and time depending on your maintenance window.
- 4 Monitor the update. See [Chapter 8 Monitor Updates](#).

What to do next

- Upgrade the vRealize Log Insight content packs. See [Upgrade the Content Packs on vRealize Log Insight](#).
- If vRealize Automation is deployed in your Cloud Foundation environment, you must manually upgrade the vRealize Log Insight agents on the vRealize Automation VMs. See [Upgrade vRealize Log Insight Agents](#).

Upgrade vRealize Log Insight Manually

If you do not have an upgraded version of vRealize Suite Lifecycle Manager in your Cloud Foundation system, you must upgrade vRealize Log Insight manually.

Prerequisites

- Take snapshots of the vRealize Log Insight VMs.
- Download the VMware vRealize Log Insight upgrade package (VMware-vRealize-Log-Insight-4.8.0-*<build_number>*.pak) using your MyVMware account.

Procedure

- 1 Disable pre-upgrade verification in vRealize Log Insight.
 - a Log in to the vRealize Log Insight user interface on the Log Insight master node as the admin user.
 - b Open a second tab in the same browser and connect to `https://<Log Insight master node>/internal/config`.
 - c Add the following line inside the `<upgrade></upgrade>` stanza:

```
<upgrade-prevalidation-enabled value="false" />
```

- d Click **Save**.
- 2 Upgrade vRealize Log Insight.
 - a Log in to the vRealize Log Insight user interface as the admin user.
 - b Click the configuration drop-down menu icon and select **Administration**.
 - c Under **Management**, click **Cluster** and click **Upgrade Cluster**.

- d Browse to the location of the VMware-vRealize-Log-Insight-4.8.0-<build>.pak file on your local file system and click **Open**.
- e In the **Upgrade Log Insight** dialog box, click **Upgrade** and wait until the .pak file uploads to the master node.
- f On the **End User License Agreement** page, click **Accept**.
- g After the upgrade of the master node completes, click **OK**.

The upgrade of the remaining nodes in the cluster starts automatically. After the upgrade for the cluster completes, the integrated load balancer comes online and display as Available.

3 Update the vRealize Log Insight version recorded in SDDC Manager.

- a Download the 60278_vrli_version_updater.zip file from [KB 60278](#).
- b Use a file transfer utility to copy the zip file to the /home/vcf folder on the SDDC Manager VM.
- c Log in to the SDDC Manager VM as the vcf user.
- d Issue the following command to extract the contents of the 60278_vrli_version_updater.zip file:

```
unzip 60278_vrli_version_updater.zip
```

- e Issue the following command to run the extracted vrli_version_updater.py script:

```
python vrli_version_updater.py
```

You will see output similar to the following:

```
Verifying VRLI version and updating it in SDDC manager logical inventory, if needed
Checking VRLI version
API response: [{"id":"618a2421-edca-11e8-8b0f-6d7f5b3308a7","domainId":"60b5bd20-
edca-11e8-8b0f-6d7f5b3308a7","loadBalancerHostname":"vrli.vcf.corp.local","nodeSize":"MEDIUM",
"enhancedLoggingEnabled":false,"masterNode":{"id":"6189d600-
edca-11e8-8b0f-6d7f5b3308a7","hostName":"vrli-1.vcf.corp.local","managementIpAddress":"192.168
.16.17","vmName":"vrli-1"},"workerNodes":[{"id":"6189fd10-
edca-11e8-8b0f-6d7f5b3308a7","hostName":"vrli-2.vcf.corp.local","managementIpAddress":"192.168
.16.18","vmName":"vrli-2"},"{"id":"6189fd11-
edca-11e8-8b0f-6d7f5b3308a7","hostName":"vrli-3.vcf.corp.local","managementIpAddress":"192.168
.16.19","vmName":"vrli-3"}],"version":"DefaultVersion","status":"ACTIVE"}]
API response: [{"id":"a037ffeb-3749-4d40-a23b-79daf2a23e36","entityId":"618a2421-
edca-11e8-8b0f-6d7f5b3308a7","entityType":"VRLI","credentialType":"API","username":"admin","se
cret":"VMware123!"}]
Successful authentication to vRLI node with IP address vrli.vcf.corp.local
API response: {"releaseName":"GA","version":"4.8.0-13036238"}
Found the following version for vRLI: 4.8.0-13036238
Found version 4.8.0-13036238
Updating vRLI version in logical inventory
```

4 Enable pre-upgrade verification in vRealize Log Insight.

- a Log in to the vRealize Log Insight user interface on the Log Insight master node as the admin user.
- b Open a second tab in the same browser and connect to `https://<Log Insight master node>/internal/config`.
- c Remove the following line inside the `<upgrade></upgrade>` stanza:

```
<upgrade-prevalidation-enabled value="false" />
```

- d Click **Save**.


What to do next

- Upgrade the vRealize Log Insight content packs. See [Upgrade the Content Packs on vRealize Log Insight](#).
- If vRealize Automation is deployed in your Cloud Foundation environment, you must manually upgrade the vRealize Log Insight agents on the vRealize Automation VMs. See [Upgrade vRealize Log Insight Agents](#).

Upgrade the Content Packs on vRealize Log Insight

Content packs are plugins to vRealize Log Insight that provide pre-defined knowledge about specific types of events such as log messages. You must upgrade to the latest content packs for use with vRealize Log Insight .

Procedure

- 1 Log in to the vRealize Log Insight user interface as the admin user.
- 2 Click the configuration drop-down menu icon  and select **Content Pack**.
- 3 In the **Content Pack** pane, under **Content Pack Market Place**, click **Updates**.
- 4 In the **Log Insight Content Pack Marketplace** pane, click **Update All** to upgrade all content packs to the latest version.

What to do next

After you upgrade the content packs, click each of the items under **Installed Content Packs** and verify that the version number of each content pack is the same as or newer than the version listed in the Release Notes for your version of VMware Cloud Foundation. See the [VMware Cloud Foundation documentation](#).

Upgrade vRealize Log Insight Agents

If vRealize Automation is deployed in your Cloud Foundation environment, you must manually upgrade the vRealize Log Insight agents on the vRealize Automation VMs.

Upgrade the vRealize Log Insight agents on the following vRealize Automation VMs.

Table 5-1. vRealize Automation VMs to Upgrade

VM Name	Description
iaasdem1	vRealize Automation DEM Worker
iaasdem2	vRealize Automation DEM Worker
iaasagent1	vRealize Automation Proxy Agent
iaasagent2	vRealize Automation Proxy Agent
iaasms1	vRealize Automation IaaS Manager Service and DEM Orchestrator
iaasms2	vRealize Automation IaaS Manager Service and DEM Orchestrator
iaasweb1	vRealize Automation IaaS Web Server
iaasweb2	vRealize Automation IaaS Web Server

Procedure

- 1 Log in to the vRealize Log Insight web user interface.
 - a In the SDDC Manager Dashboard, select **Administration > vRealize Suite**.
 - b Select vRealize Log Insight and click the link to open the web user interface.
 - c Log in as an administrator.
- 2 Click the configuration drop-down menu icon and select **Administration**.
- 3 In the Management section, click **Agents**.
- 4 Scroll to the bottom of the screen and click **Download Log Insight Agent Version 4.8.0**.
- 5 Select **Windows MSI (32-bit/64-bit)** and click **Save File**.
- 6 Exit the vRealize Log Insight web user interface.
- 7 Connect to the first vRealize Automation VM using RDP.
- 8 Open an administrative command prompt window, and navigate to the directory where the Windows MSI file is saved.
- 9 Run the following command to install the vRealize Log Insight agent with custom values.


```
VMware-Log-Insight-Agent-4.8.0-<build_number>_<IP>.msi SERVERPORT=9000 AUTOUPDATE=yes
LIAGENT_SSL=no
```
- 10 In the VMware vRealize Log Insight Agent Setup wizard, accept the license agreement and click **Next**.
- 11 Verify that the vRealize Log Insight load balancer FQDN is shown in the **Host** text box, click **Install**.
- 12 When the installation is complete, click **Finish**.
- 13 Repeat steps 7-12 on the remaining vRealize Automation VMs.

14 Verify that the agents are updated.

- a In the vRealize Log Insight web user interface, click the configuration drop-down menu icon and select **Administration**.
- b In the Management section, click **Agents**.
- c Verify that the vRealize Automation VMs show the updated agent version.

Upgrade vRealize Operations

If you have deployed vRealize Operations in your Cloud Foundation environment, you should upgrade it when you upgrade Cloud Foundation.

Prerequisites

- Download the upgrade bundle. See [Download Bundles](#).
- [Upgrade vRealize Suite Lifecycle Manager](#).

Procedure

- 1 Navigate to the **Update/Patches** tab of the management domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 Click **Update Now** to start the update or click **Schedule Update** to schedule the update for a specific date and time depending on your maintenance window.
- 4 Monitor the update. See [Chapter 8 Monitor Updates](#).

Upgrade vRealize Automation

If you have deployed vRealize Automation in your Cloud Foundation environment, you should upgrade it when you upgrade Cloud Foundation.

Procedure

- 1 [Prepare to Upgrade vRealize Automation](#)
Before you can upgrade, you must prepare the vRealize Automation virtual machines.
- 2 [Apply the vRealize Automation Update](#)
Once you have prepared the vRealize Automation VMs, you can apply the update.

Prepare to Upgrade vRealize Automation

Before you can upgrade, you must prepare the vRealize Automation virtual machines.

Cloud Foundation includes the following vRealize Automation VMs:

Table 5-2. Example VM Names for vRealize Automation

VM Name	Description
iaasdem1	vRealize Automation DEM Worker
iaasdem2	vRealize Automation DEM Worker
iaasagent1	vRealize Automation Proxy Agent
iaasagent2	vRealize Automation Proxy Agent
iaasms1	vRealize Automation IaaS Manager Service and DEM Orchestrator
iaasms2	vRealize Automation IaaS Manager Service and DEM Orchestrator
iaasweb1	vRealize Automation IaaS Web Server
iaasweb2	vRealize Automation IaaS Web Server
vracafe1	vRealize Automation Appliance
vracafe2	vRealize Automation Appliance
vracafe3	vRealize Automation Appliance
mssql	Microsoft SQL Server for vRealize Automation

Procedure

- 1 Update VMware Tools on each of the Windows IaaS vRealize Automation VMs to match the version of VMware Tools on the ESXi host on which the VM resides.

You do not need to update VMware Tools on the Microsoft SQL Server or the vRealize Automation appliances.

Note Do not restart the VMs, even if you are prompted to do so.

- 2 Shut down the guest OS on groups of VMs in the order listed below. Do not proceed to the next group until the previous group is completely shut down.

VM Name	Group Order
iaasdem2	1
iaasdem1	1
iaasagent2	1
iaasagent1	1
iaasms2	2
iaasms1	2
iaasweb2	3
iaasweb1	4
vracafe3	5

VM Name	Group Order
vracafe2	5
vracafe1	5
mssql	6

- Take a snapshot of each VM using the name **VRA_VCF_LCM_UPGRADE_BACKUP_7.5.0**.

Do not proceed to the next step until all snapshots complete.

- Power on the VMs in groups in the order listed below. Wait until all VMs in a group display the login screen before you proceed to the next group

VM Name	Group Order
mssql	1
vracafe3	2
vracafe2	2
vracafe1	2
iaasweb1	3
iaasweb2	4
iaasms1	5
iaasms2	6
iaasdem2	7
iaasdem1	7
iaasagent2	7
iaasagent1	7

What to do next

You are ready to [Apply the vRealize Automation Update](#).

Apply the vRealize Automation Update

Once you have prepared the vRealize Automation VMs, you can apply the update.

Prerequisites

- Download the upgrade bundle. See [Download Bundles](#).
- [Upgrade vRealize Suite Lifecycle Manager](#).
- [Prepare to Upgrade vRealize Automation](#).

Procedure

- Navigate to the **Update/Patches** tab of the management domain.

- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 Click **Update Now** to start the update or click **Schedule Update** to schedule the update for a specific date and time depending on your maintenance window.
- 4 Monitor the update. See [Chapter 8 Monitor Updates](#).

What to do next

After the update succeeds, delete the VM snapshots you created in [Prepare to Upgrade vRealize Automation](#).

Upgrade NSX for vSphere in Management Domain

Apply the NSX for vSphere bundle to the management domain.

Prerequisites

The NSX for vSphere bundle must have been downloaded. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the management domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the NSX for vSphere bundle and click the date and time for the bundle to be applied.

After the upgrade is completed, a green bar with a check mark is displayed.

Upgrade vCenter Server and Platform Services Controllers

The vCenter bundle upgrades vCenter and Platform Services Controllers on the management domain and the workload domain.

Prerequisites

Download the upgrade bundle. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the management domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the vCenter bundle and click the date and time for the bundle to be applied.

After the upgrade is completed, a green bar with a check mark is displayed.

Upgrade ESXi

The ESXi bundle upgrades ESXi on the domain.

If you want to skip any hosts while applying an ESXi update to the management domain or a VI workload domain, you must add these hosts to the `application-prod.properties` file before you begin the update. See [Chapter 7 Skip Hosts During ESXi Update](#).

Prerequisites

The ESXi bundle must have been downloaded. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the ESXi bundle and click the date and time for the bundle to be applied.

After the upgrade is completed, a green bar with a check mark is displayed.

Upgrade NSX-T Workload Domains

Read this section only if you have NSX-T based VI workload domains in your environment. If you have both NSX for vSphere and NSX-T workload domains in your environment, you can upgrade them in any order.

Applying the NSX-T bundle on a workload domain upgrades NSX-T 2.4 to 2.4.1. The upgrade is sequential and the components are upgraded in the following order:

- 1 Upgrade coordinator
- 2 Host clusters
- 3 NSX-T Edge clusters
- 4 NSX-T Managers

All NSX-T workload domains share the NSX-T instance, so you cannot perform any operations on the NSX-T workload domains while NSX-T is being upgraded.

Note If your workload domain is on NSX-T 2.3, you must upgrade it to NSX-T 2.4 manually before upgrading it to 2.4.1.

Prerequisites

- All applicable updates must have been applied to all NSX-T workload domains for the NSX-T upgrade bundle to be available for download. Otherwise, the status of the NSX-T bundle is displayed as Pending instead of Available for all workload domains.

- You must have downloaded the NSX-T upgrade bundle. See [Download Bundles](#).

Procedure

1 Upgrade vCenter Server

The vCenter bundle upgrades vCenter Server on workload domains.

2 Upgrade ESXi

The ESXi bundle upgrades ESXi on the domain.

3 Upgrade NSX-T

Read this section only if you have NSX-T based VI workload domains in your environment.

Procedure

1 Navigate to the Updates/Patches tab of an NSX-T domain.

Note that although you are upgrading NSX-T from the workload domain you have navigated to, all operations are performed on all NSX-T domains in your environment.

2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).

The NSX-T precheck is run on all NSX-T workload domains in your environment.

3 In the Available Updates section, click **Update Now** or **Schedule Update** for NSX-T bundle and click the date and time for the bundle to be applied.

The NSX-T Upgrade Confirmation dialog box appears.

4 Click **Confirm**.

The NSX-T upgrade begins and the upgrade components are displayed. The upgrade view displayed here pertains to the workload domain where you applied the bundle. Click the link to the associated workload domains to see the components pertaining to those workload domains.

If a component upgrade fails, the failure is displayed across all associated workload domains. Resolve the issue and retry the failed task.

Results

When all NSX-T components are upgraded successfully, a message with a green background and check mark is displayed.

Upgrade vCenter Server

The vCenter bundle upgrades vCenter Server on workload domains.

Prerequisites

The vCenter Server bundle must have been downloaded. See [Download Bundles](#).

Procedure

1 Navigate to the Updates/Patches tab of the workload domain you want to upgrade.

- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the vCenter Server bundle and click the date and time for the bundle to be applied.

After the upgrade is completed, a green bar with a check mark is displayed.

Upgrade ESXi

The ESXi bundle upgrades ESXi on the domain.

If you want to skip any hosts while applying an ESXi update to the management domain or a VI workload domain, you must add these hosts to the `application-prod.properties` file before you begin the update. See [Chapter 7 Skip Hosts During ESXi Update](#).

Prerequisites

The ESXi bundle must have been downloaded. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the ESXi bundle and click the date and time for the bundle to be applied.

After the upgrade is completed, a green bar with a check mark is displayed.

Upgrade NSX-T

Read this section only if you have NSX-T based VI workload domains in your environment.

Applying the NSX-T bundle on a workload domain upgrades NSX-T 2.4 to 2.4.1. The upgrade is sequential, and the components are upgraded in the following order:

- 1 Upgrade coordinator
- 2 Host clusters
- 3 NSX-T Edge clusters
- 4 NSX-T Managers

All NSX-T workload domains share the NSX-T instance, so you cannot perform any operations on the NSX-T workload domains while NSX-T is being upgraded.

Note If your workload domain is on NSX-T 2.3, you must upgrade it to NSX-T 2.4 manually before upgrading it to 2.4.1.

Prerequisites

- All applicable updates must have been applied to all NSX-T workload domains for the NSX-T upgrade bundle to be available for download. Otherwise, the NSX-T bundle is not displayed and cannot be downloaded.
- You must have downloaded the NSX-T upgrade bundle. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of an NSX-T domain.

Note that although you are upgrading NSX-T from the workload domain you have navigated to, all operations are performed on all NSX-T domains in your environment.

- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).

The NSX-T precheck is run on all NSX-T workload domains in your environment.

- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for NSX-T bundle and click the date and time for the bundle to be applied.

The NSX-T Upgrade Confirmation dialog box appears.

- 4 Click **Confirm**.

The NSX-T upgrade begins and the upgrade components are displayed. The upgrade view displayed here pertains to the workload domain where you applied the bundle. Click the link to the associated workload domains to see the components pertaining to those workload domains.

If a component upgrade fails, the failure is displayed across all associated workload domains. Resolve the issue and retry the failed task.

Results

When all NSX-T components are upgraded successfully, a message with a green background and check mark is displayed.

Upgrade NSX for vSphere Workload Domains

For NSX for vSphere workload domains, you upgrade NSX for vSphere followed by vCenter Server and ESXi.

If you have both NSX for vSphere and NSX-T workload domains in your environment, you can upgrade them in any order.

Procedure

- 1 [Upgrade NSX for vSphere](#)

Read this section only if you have NSX for vSphere workload domains in your environment.

- 2 [Upgrade vCenter Server](#)

The vCenter bundle upgrades vCenter Server on workload domains.

3 Upgrade ESXi

The ESXi bundle upgrades ESXi on the domain.

Upgrade NSX for vSphere

Read this section only if you have NSX for vSphere workload domains in your environment.

Prerequisites

The NSX for vSphere bundle must have been downloaded. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of an NSX-T domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the NSX for vSphere bundle and click the date and time for the bundle to be applied.

After the upgrade is completed, a green bar with a check mark is displayed.

Upgrade vCenter Server

The vCenter bundle upgrades vCenter Server on workload domains.

Prerequisites

The vCenter Server bundle must have been downloaded. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the workload domain you want to upgrade.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the vCenter Server bundle and click the date and time for the bundle to be applied.

After the upgrade is completed, a green bar with a check mark is displayed.

Upgrade ESXi

The ESXi bundle upgrades ESXi on the domain.

If you want to skip any hosts while applying an ESXi update to the management domain or a VI workload domain, you must add these hosts to the `application-prod.properties` file before you begin the update. See [Chapter 7 Skip Hosts During ESXi Update](#).

Prerequisites

The ESXi bundle must have been downloaded. See [Download Bundles](#).

Procedure

- 1 Navigate to the Updates/Patches tab of the domain.
- 2 Run the upgrade precheck. See [Perform Upgrade Precheck](#).
- 3 In the Available Updates section, click **Update Now** or **Schedule Update** for the ESXi bundle and click the date and time for the bundle to be applied.

After the upgrade is completed, a green bar with a check mark is displayed.

Upgrade ESXi with Custom ISO or Async Drivers

6

You can perform ESXi upgrades with custom images and async drivers.

This chapter includes the following topics:

- [Upgrade ESXi with Custom ISO](#)
- [Upgrade ESXi with Cloud Foundation Stock ISO and Async Drivers](#)

Upgrade ESXi with Custom ISO

You can upgrade ESXi with a custom ISO from your vendor. This feature is available for Cloud Foundation version 3.5.1 and later.

Prerequisites

Download the appropriate vendor-specific ISO on a computer with internet access.

Procedure

- 1 Download the ESXi upgrade bundle. See [Download Bundles from SDDC Manager](#).
- 2 Using SSH, log in to the SDDC Manager VM.
- 3 Create a directory for the vendor ISO under the `/nfs/vmware/vcf/nfs-mount` directory. For example, `/nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-binaries`.
- 4 Copy the vendor-specific ISO to the directory you created on the SDDC Manager VM. For example, you can copy the ISO to the `/nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-binaries` directory.
- 5 Change permissions on the directory where you copied the ISO. For example,

```
chmod -R 775 /nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-binaries/
```
- 6 Change owner to vcf.

```
chown -R vcf_lcm:vcf /nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-binaries/
```
- 7 Create an ESX custom image JSON using the following template.

```
{
  "esxCustomImageSpecList": [{
    "bundleId": "ID",
```

```

"targetEsxVersion": "version",
"useVcfBundle": false,
"customIsoAbsolutePath": "Path_to_ISO"
}]
}

```

where

Parameter	Description and Example Value
bundleId	<p>ID of the ESXi upgrade bundle you downloaded. You can retrieve the bundle ID by navigating to the Repository > Bundles page and clicking View Details to view the bundle ID.</p> <p>For example, 8c0de63d-b522-4db8-be6c-f1e0ab7ef554.</p> <p>Note If an incorrect bundle ID is provided, the upgrade will proceed with the Cloud Foundation stock ISO and replace the custom VIBs in your environment with the stock VIBs.</p>
targetEsxVersion	ESXi version in the custom image to be applied.
useVcfBundle	<p>Specifies whether the Cloud Foundation ESXi bundle is to be used for the upgrade.</p> <p>Note If you want to upgrade with a custom ISO image, ensure that this is set to false.</p>
customIsoAbsolutePath	<p>Path to the custom ISO file on the SDDC Manager VM. For example, /nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-binaries/ VMware-ESXi-6.7.0-Update1-10302608-HPE-Gen9plus-670.U1.10.3.5.12-Oct2018.iso</p>

Here is an example of a completed JSON template.

```

{
  "esxCustomImageSpecList": [{
    "bundleId": "8c0de63d-b522-4db8-be6c-f1e0ab7ef554",
    "targetEsxVersion": "6.7.0-10302608",
    "useVcfBundle": false,
    "customIsoAbsolutePath":
    "/nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-binaries/VMware-ESXi-6.7.0-Update1-10302608-HPE-Gen9plus-670.U1.10.3.5.12-Oct2018.iso"
  }]
}

```

- 8 Save the JSON file as esx-custom-image-upgrade-spec.json in the /nfs/vmware/vcf/nfs-mount.

Note If the JSON file is not saved in the correct directory, the stock Cloud Foundation ISO is used for the upgrade and the custom VIBs are overwritten.

- 9 Set the correct permissions on the /nfs/vmware/vcf/nfs-mount/esx-custom-image-upgrade-spec.json file:

```
chmod -R 775 /nfs/vmware/vcf/nfs-mount/esx-custom-image-upgrade-spec.json
```

```
chown -R vcf_lcm:vcf /nfs/vmware/vcf/nfs-mount/esx-custom-image-upgrade-spec.json
```

- 10 Open the `/opt/vmware/vcf/lcm/lcm-app/conf/application-prod.properties` file.
- 11 In the `lcm.esx.upgrade.custom.image.spec=` parameter, add the path to the JSON file.
For example, `lcm.esx.upgrade.custom.image.spec=/nfs/vmware/vcf/nfs-mount/esx-custom-image-upgrade-spec.json`
- 12 On the SDDC Manager Dashboard, click **Inventory > Workload Domains**.
- 13 Click the management domain and then click **Updates/Patches**.
- 14 Schedule the ESXi upgrade bundle.
- 15 Monitor the upgrade progress. See [Chapter 8 Monitor Updates](#).
- 16 After the upgrade is complete, confirm the ESXi version by clicking **Current Versions**. The ESXi hosts table displays the current ESXi version.

Upgrade ESXi with Cloud Foundation Stock ISO and Async Drivers

You can apply the stock ESXi upgrade bundle with specified async drivers. This feature is available for Cloud Foundation version 3.5.1 and later.

Prerequisites

Download the appropriate async drivers for your hardware on a computer with internet access.

Procedure

- 1 Download the Cloud Foundation ESXi upgrade bundle. See [Download Bundles from SDDC Manager](#).
- 2 Using SSH, log in to the SDDC Manager VM.
- 3 Create a directory for the vendor provided async drivers under the `/nfs/vmware/vcf/nfs-mount` directory. For example, `/nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-drivers/drivers`.
- 4 Copy the async drivers to the directory you created on the SDDC Manager VM. For example, you can copy the drivers to the `/nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-drivers/drivers` directory.
- 5 Change permissions on the directory where you copied the drivers. For example,
`chmod -R 775 /nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-drivers/drivers`
- 6 Change owner to vcf.
`chown -R vcf_lcm:vcf /nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-drivers/drivers`
- 7 Create an ESX custom image JSON using the following template.

```
{
  "esxCustomImageSpecList": [{
    "bundleId": "ID",
```

```

"useVcfBundle": true,
"esxPatchesAbsolutePaths": [
  "Path_to_Drivers"
]
}]
}

```

where

Parameter	Description and Example Value
bundleId	ID of the ESXi upgrade bundle you downloaded. You can retrieve the bundle ID by navigating to the Repository > Bundles page and clicking View Details to view the bundle ID. For example, 8c0de63d-b522-4db8-be6c-f1e0ab7ef554. Cloud Foundation
targetEsxVersion	ESXi version in the custom image to be applied.
useVcfBundle	Specifies whether the ESXi bundle is to be used for the upgrade. Set this to true.
esxPatchesAbsolutePaths	Path to the async drivers on the SDDC Manager VM. For example, /nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-drivers/drivers/VMW-ESX-6.7.0-smartpqi-1.0.2.1038-offline_bundle-8984687.zip

Here is an example of a completed JSON template.

```

{
  "esxCustomImageSpecList": [{
    "bundleId": "8c0de63d-b522-4db8-be6c-f1e0ab7ef554",
    "useVcfBundle": true,
    "esxPatchesAbsolutePaths": [
      "/nfs/vmware/vcf/nfs-mount/esx-upgrade-partner-drivers/drivers/VMW-ESX-6.7.0-smartpqi-1.0.2.1038-offline_bundle-8984687.zip"
    ]
  }]
}

```

- 8 Save the JSON file as `esx-custom-image-upgrade-spec.json` in the `/nfs/vmware/vcf/nfs-mount`.

Note If the JSON file is not saved in the correct directory, the stock Cloud Foundation ISO is used for the upgrade and the custom VIBs are overwritten.

- 9 Set the correct permissions on the `/nfs/vmware/vcf/nfs-mount/esx-custom-image-upgrade-spec.json` file:

```
chmod -R 775 /nfs/vmware/vcf/nfs-mount/esx-custom-image-upgrade-spec.json
```

```
chown -R vcf_lcm:vcf /nfs/vmware/vcf/nfs-mount/esx-custom-image-upgrade-spec.json
```

- 10 Open the `/opt/vmware/vcf/lcm/lcm-app/conf/application-prod.properties` file.

- 11 In the `lcm.esx.upgrade.custom.image.spec=` parameter, add the path to the JSON file.
For example, `lcm.esx.upgrade.custom.image.spec=/nfs/vmware/vcf/nfs-mount/esx-custom-image-upgrade-spec.json`
- 12 On the SDDC Manager Dashboard, click **Inventory > Workload Domains**.
- 13 Click the management domain and then click **Updates/Patches**.
- 14 Schedule the ESXi upgrade bundle.
- 15 Monitor the upgrade progress. See [Chapter 8 Monitor Updates](#).
- 16 After the upgrade is complete, confirm the ESXi version by clicking **Current Versions**. The ESXi hosts table displays the current ESXi version.

Skip Hosts During ESXi Update

7

You can skip hosts while applying an ESXi update to the management domain or a VI workload domain. The skipped hosts are not updated.

Procedure

- 1 Retrieve the host IDs for the hosts you want to skip.
 - a Open a new tab in the browser where you are running SDDC Manager and type the following URL:

`https://SDDC_Manager_IP/inventory/esxis`

For VMware Cloud Foundation 3.8.1, the URL is `https://SDDC_Manager_IP/inventory/hosts`

Log in as **admin** using the password you specified for the SDDC Manager REST API user.

Here is a sample output:

```
{
  "vcenterId": "d1a239e1-baef-11e8-a2de-d1b89736a031",
  "networkPoolId": "d3643003-c854-43e7-91ad-fd8d0711a02f",
  "bundleRepoDatastore": "lcm-bundle-repo",
  "domainId": "d0ef8bb0-baef-11e8-a2de-d1b89736a031",
  "clusterId": "d1b106f1-baef-11e8-a2de-d1b89736a031",
  "vsanIpAddress": "10.0.4.3",
  "vmotionIpAddress": "10.0.8.3",
  "hostAttributes": {},
  "dirty": false,
  "id": "d19d57e1-baef-11e8-a2de-d1b89736a031",
  "status": "ACTIVE",
  "version": "6.5.0-9298722",
  "hostName": "esxi-1.vrack.vsphere.local",
  "privateIpAddress": "10.0.0.100",
  "managementIpAddress": "10.0.0.100"
}
```

- b Copy the appropriate host IDs.
- 2 Using SSH, log in to the SDDC Manager VM with the user name `vcf` and password you specified in the deployment parameter sheet.

- 3 Type `su` to switch to the root account.
- 4 Open the `/opt/vmware/vcf/lcm/lcm-app/conf/application-prod.properties` file.
- 5 At the end of the file , add the following line:

```
esx.upgrade.skip.host.ids=host id1,host id2
```
- 6 Save and close the file.
- 7 Restart the LCM server by typing the following command in the console window:

```
systemctl restart lcm
```

Results

The hosts added to the `application-prod.properties` are not updated when you update the workload domain.

Monitor Updates

8

Monitor the update progress for your workload domain

Procedure

- 1 The Update in Progress section in the workload domain detail page displays the high level update progress and the number of components to be updated.
- 2 Details of the component being updated is shown below that. The image below is an example and may not reflect the correct versions.

Update in Progress

VMware Software Update 3.1.0.0 0 / 1 Resources Updated CANCEL

Released 09/13/2018 2 GB

VMW Update Bundle - PSC

Updating PSC

> pvc-2.vrack.vsphere.local In Progress 6.5.0-9451637 → 6.5.0-10056541

- 3 Click the arrow to see a list of tasks being performed to update the component. As the task is completed, it shows a green check mark.

Update in Progress

VMware Software Update 3.1.0.0 0 / 1 Resources Updated CANCEL

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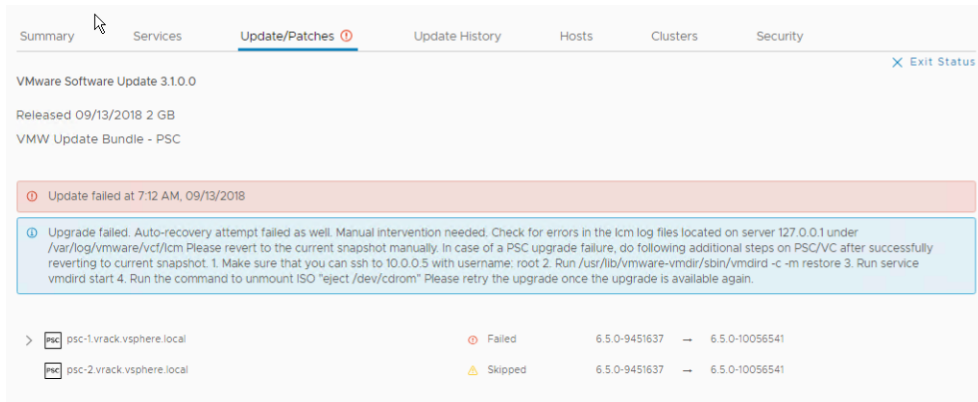
VMW Update Bundle - PSC

Updating PSC

▼ pvc-2.vrack.vsphere.local In Progress 6.5.0-9451637 → 6.5.0-10056541

VCENTER UPGRADE READY	✓
VCENTER UPGRADE PRE VALIDATION	✓
VCENTER UPGRADE CREATE SNAPSHOT	⊖
VCENTER UPGRADE MOUNT ISO	✓
VCENTER UPGRADE UNSTAGE	✓
VCENTER UPGRADE STAGE	✓
VCENTER UPGRADE INSTALL	⊖
VCENTER UPGRADE REBOOT	⊖
VCENTER UPGRADE POST VALIDATION	⊖
VCENTER UPGRADE UNMOUNT ISO	⊖

- 4 When all tasks to update a component have been completed, the update status for the component is displayed as Updated.
- 5 If a component fails to be updated, the status is displayed as Failed. The reason for the failure as well as remediation steps are displayed. The image below is an example and may not reflect the correct versions.



- 6 After you resolve the issues, the bundle becomes available. You can then apply the bundle or schedule it to be applied at a specific date and time.

What to do next

- 1 Remove the VM snapshots you had taken before starting the update.
- 2 Take a backup of the newly installed components.

View Upgrade History

9

The Update History page displays all upgrades applied to a workload domain.

Procedure

- 1 In the SDDC Manager Dashboard, click **Inventory > Workload Domains**..
- 2 Click the name of a workload domain and then click the **Updates History** tab.

All updates applied to this workload domain are displayed. If an update bundle was applied more than once, click **View Past Attempts** to see more information.

Access Upgrade Log Files

10

- 1 Log in to the SDDC Manager VM with the vcf user name and the password you specified in the deployment parameter sheet.
- 2 To access upgrade logs, navigate to the `/var/log/vmware/vcf/lcm` directory.
 - `lcm-debug` log file contains debug level logging information.
 - `lcm.log` contains information level logging.
- 3 To create an sos bundle for support, see Supportability and Serviceability (SoS) Utility in the *VMware Cloud Foundation Operations and Administration Guide*.