

Upgrading Sites

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Overview

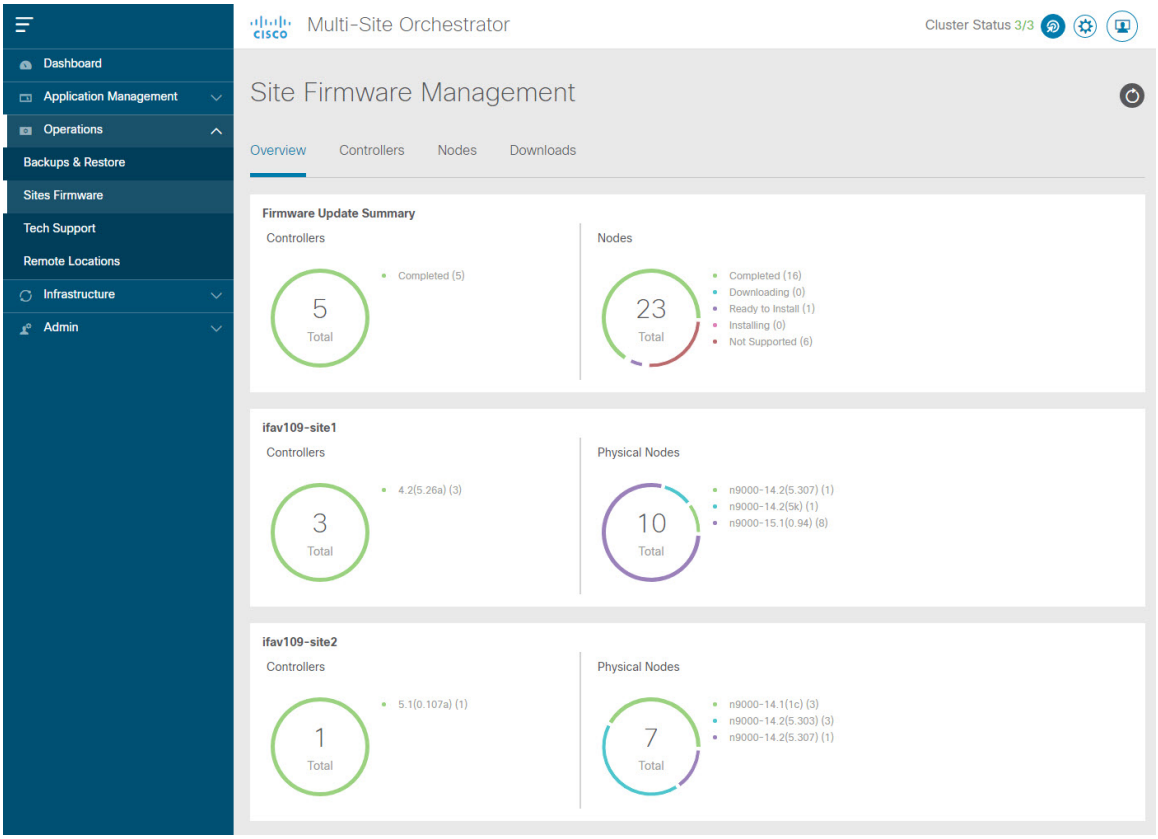
Prior to Release 3.1(1), when you deployed Cisco ACI Multi-Site, each site's APIC clusters and switch nodes software had to be managed individually at the site level. As the number of sites in your Multi-Site domain grew, the release life cycle and upgrades could become complicated as they had to be manually coordinated and managed for release and feature compatibility.

Starting with Release 3.1(1), Cisco ACI Multi-Site Orchestrator provides a workflow that allows you to manage all sites' software upgrades from a single point eliminating the need for multiple site administrators to manually coordinate software upgrades and giving you insight into any potential issues that could affect the upgrades.

You can access the site upgrades screen by navigating to **Operations** > **Sites Firmware**. The page contains four tabs, which are described in this and following sections.

The **Overview** tab displays information about the sites in your Multi-Site domain and the firmware versions that are deployed or ready to be deployed. The `Sites Firmware` service polls the sites every 5 minutes for new or changed data such as the latest status of any of the upgrade policies. You can manually trigger a refresh by clicking the **Refresh** button in the upper right corner of the main pane.

Figure 1: Sites Firmware Overview



The page is divided into the following areas:

- **Firmware Update Summary**—provides overall summary of the firmware images that are present across all sites in your Multi-Site domain, including the Cisco APIC and the switch firmware.

  For each type of image, the specific information includes the number of images in each state:

  - `Completed`—the image is currently deployed to the controllers or the switches.
  - `Downloading` (for switch nodes only)—the image is being downloaded to the switch nodes.
  - `Ready to Install` (for switch nodes only)—the image was successfully downloaded to the switch nodes and is ready to be installed.
  - `Installing`—the images currently in the process of being deployed to the controllers or the switch nodes.
  - `Not Supported`—the images that do not support remote firmware upgrades, such as releases prior to Release 4.2(5).

- **Site-specific information**—additional sections of the page display information about individual sites, which includes the version of the currently deployed software and the number of controllers or nodes.

Guidelines and Limitations

When performing fabric upgrades from the Multi-Site Orchestrator, the following restrictions apply:

- You must review and follow the guidelines, recommendations, and limitations specific to the Cisco APIC upgrade process described in the Upgrading and Downgrading the Cisco APIC and Switch Software of the *Cisco APIC Installation, Upgrade, and Downgrade Guide*.
- Your Multi-Site Orchestrator must be deployed in Application Services Engine or Nexus Dashboard.

  The site upgrade feature is not available for MSO deployments in VMware ESX and you need to follow the standard upgrade procedures described in *Cisco APIC Installation, Upgrade, and Downgrade Guide*
- The fabrics must be running Cisco APIC, Release 4.2(5) or later.

  Fabrics running earlier APIC releases will not be available for selection during the upgrade workflow. Follow the standard upgrade procedures described in *Cisco APIC Installation, Upgrade, and Downgrade Guide*.
- We recommend coordinating the site upgrades with the site administrators managing those fabrics. You may need access to the controllers or switch nodes to troubleshoot any potential issues should they arise.
- If a fabric switch node goes into an `inactive` state in the middle of the upgrade process, for example due to hardware or power failure, the process will be unable to complete. You will not be able to remove or modify the node upgrade policy from MSO during this time as MSO is unable to differentiate whether the node went down or is simply in the middle of a reboot for the upgrade.

  To resolve this issue, you must manually decommission the inactive node from the APIC, at which point the MSO upgrade policy will recognize the change and return a `failed` status. Then you can update the upgrade policy on the MSO to remove the switch and re-run the upgrade.

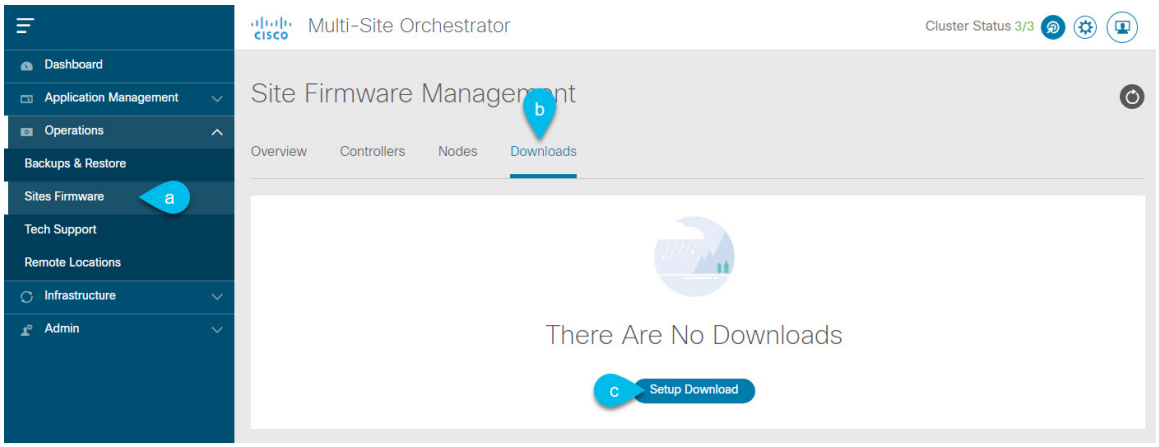
Downloading Controller and Switch Node Firmware to Sites

You must download the controller and switch software to all the site controllers in your fabrics before performing the upgrade. After you complete the following steps, you will be able to start the upgrade process at a later time using the downloaded images.

Procedure

Step 1 Log in to your Cisco ACI Multi-Site Orchestrator.

Step 2 Set up firmware download.



a) From the left navigation pane, select **Operations** > **Sites Firmware**.
b) In the main window, select the **Downloads** tab.
c) Click **Setup Downloads** tab.

   If you have previously set up one or more downloads, click the **Setup Downloads** button in the top right of the main pane instead.

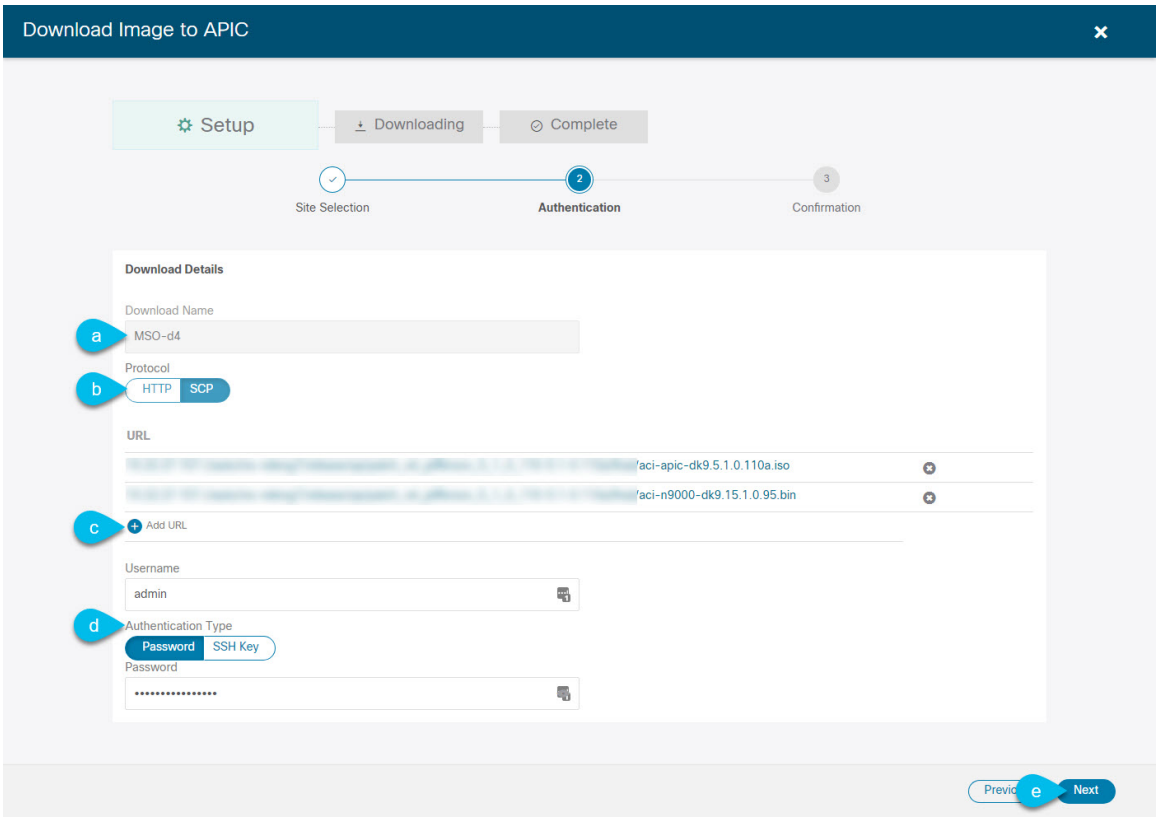
   The **Download Image to APIC** screen opens.

Step 3 Select the sites.

The image will be downloaded to the Cisco APICs of all the sites you select here.

a) Click **Select Sites**.
b) In the **Select Sites** window, check one or more sites and click **Add and Close**.
c) Click **Next** to proceed.

Step 4 Provide the download details.



a) Provide the **Name**.

You can provide a descriptive name for tracking the download.

b) Choose the protocol.

You can choose to download the image via `HTTP` or `SCP`.

c) Click **+ Add URL** to provide location of the image(s).

You can provide both, the APIC and the switch firmware images.

d) If you selected **SCP**, provide the authentication information.

You need to provide the login **Username**, for example `admin`.

Then choose the **Authentication Type**:

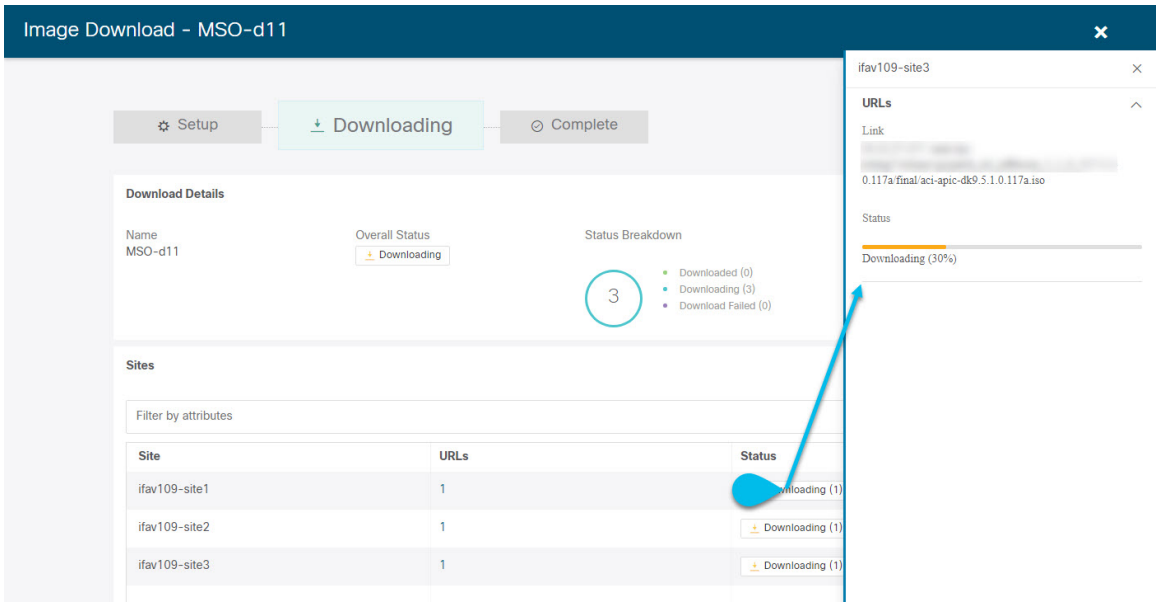
- For **Password** authentication, simply enter the password for the username you provided earlier.
- For **SSH Key** authentication, you will need to enter the **SSH Key** and the **SSH Key Passphrase**.

e) Click **Next** to proceed.

Step 5 In the confirmation screen, review the information and click **Submit** to proceed.

In the **Downloading** screen that opens, you can view the status of the image download.

You can also click the status, to see additional details about the progress.



After all downloads complete, you will transition to the **Completed** screen. You do not have to wait at the **Downloading** screen, you can always navigate back to it from the **Downloads** tab by clicking the download name you provided in a previous step.

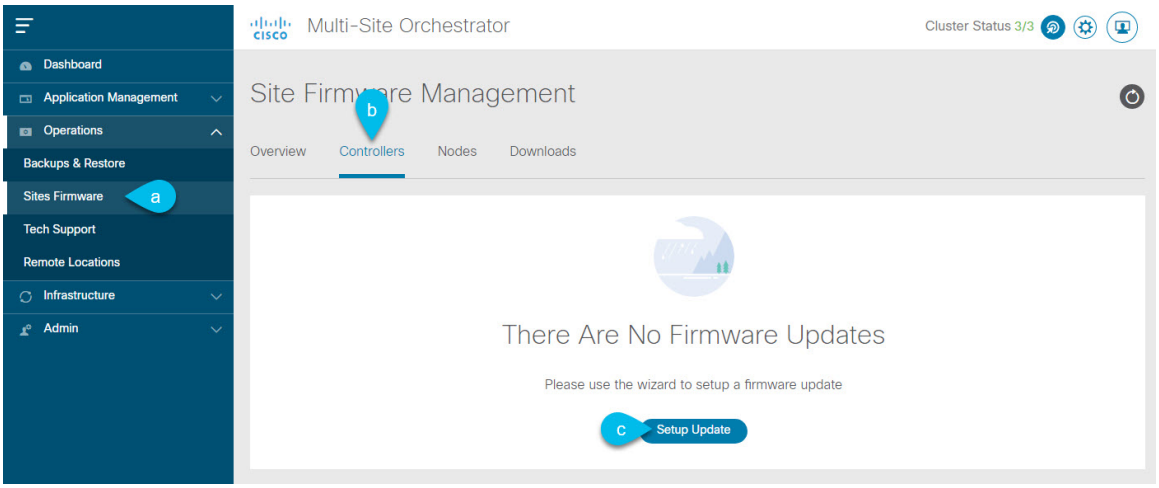
Upgrading Controllers

This section describes how to set up a software upgrade for your sites' APIC clusters.

Procedure

Step 1 Log in to your Cisco ACI Multi-Site Orchestrator.

Step 2 Set up APIC cluster upgrade.



a) From the left navigation pane, select **Operations** > **Sites Firmware**.
b) In the main window, select the **Controllers** tab.
c) Click **Setup Update** tab.

   If you have previously set up one or more updates, click the **Setup Update** button in the top right of the main pane instead.

   The **Setup Site Firmware Update** screen opens.

Step 3 Provide the upgrade details.

a) Provide the **Name**.

   This is the controller upgrade policy name you will be able to use to track the upgrade progress at any time.

b) Click **Select Sites**.

   The **Select Sites** window opens.

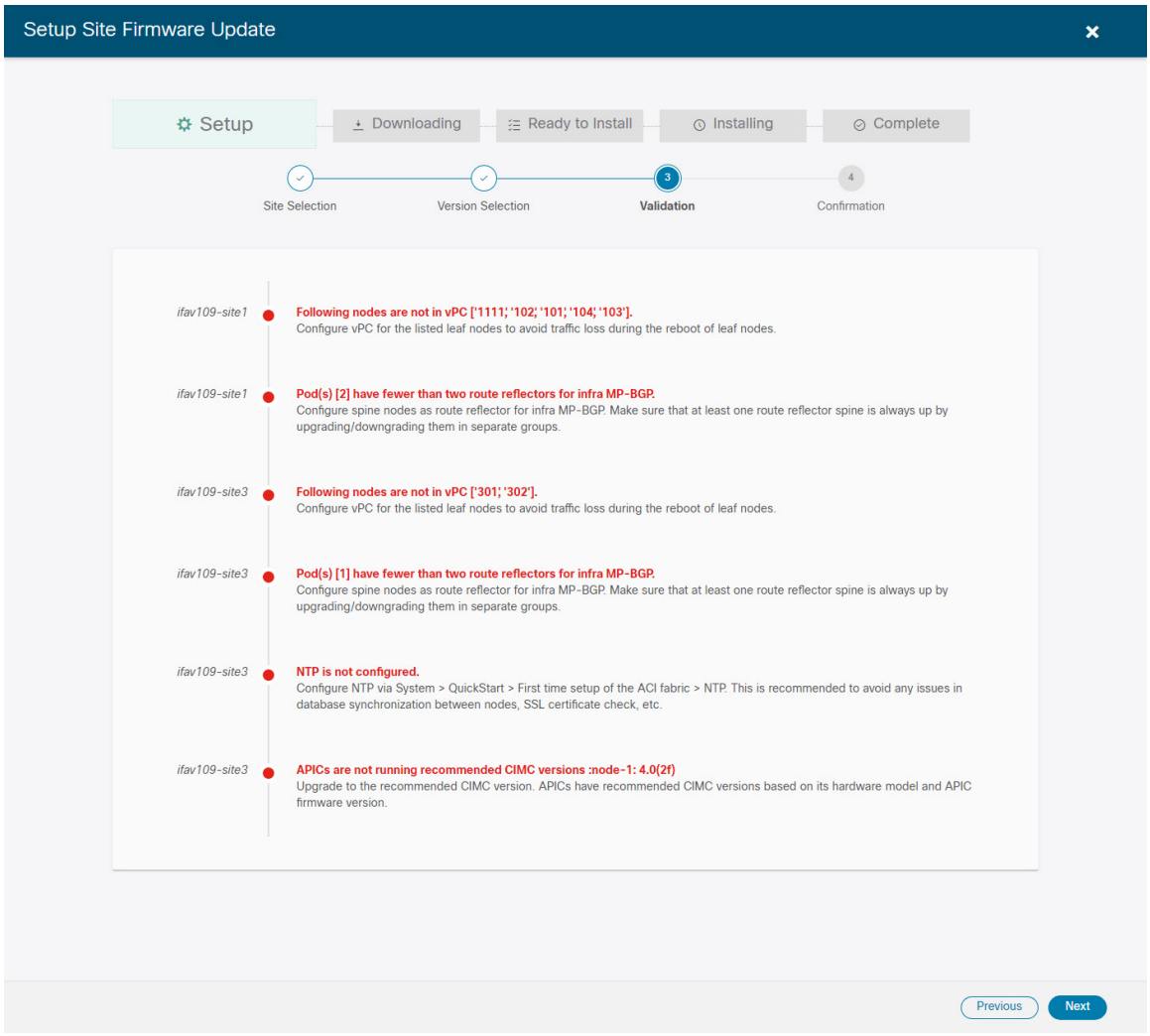
c) In the **Select Sites** window, check one or more sites and click **Add and Close**.
d) Click **Next** to proceed.

Step 4 In the **Version Selection** screen, select the firmware version and click **Next**.

The firmware must be downloaded to the sites before it becomes available here. If the download you set up in previous section has completed successfully but the image is still not available here, close the **Setup Site Firmware Update** screen, navigate back to **Operations** > **Sites Firmware** > **Controllers** tab, and click the **Refresh** button to reload the latest information available for the sites; then restart the upgrade steps.

Step 5 In the **Validation** screen, review the information, then click **Next**.

Ensure that there are no faults and review any additional information that may affect your upgrade:



Step 6 In the **Confirmation** screen, review the information and click **Submit** to start the upgrade.

Step 7 In the **Ready to Install** screen, click **Install** to start the upgrade.

If MSO to site connectivity is lost during the upgrade process, the GUI will display the last known status of the upgrade prior to loss of connectivity. Once connectivity is re-established, the upgrade status will be refreshed. You can perform a manual refresh after connectivity loss by clicking the **Refresh** button in the top right of the main pane.

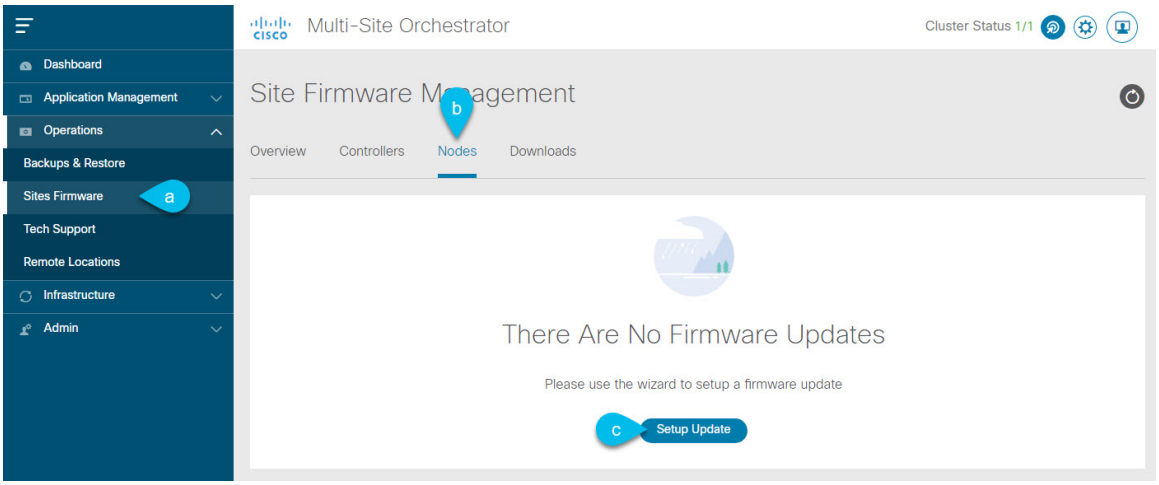
Upgrading Nodes

This section describes how to set up a software upgrade for your sites' switch nodes.

Procedure

Step 1 Log in to your Cisco ACI Multi-Site Orchestrator.

Step 2 Set up switch nodes upgrade.



a) From the left navigation pane, select **Operations** > **Sites Firmware**.
b) In the main window, select the **Nodes** tab.
c) Click **Setup Update** tab.

If you have previously set up one or more updates, click the **Setup Update** button in the top right of the main pane instead.

The **Setup Node Firmware Update** screen opens.

Step 3 Provide the upgrade details.

a) Provide the **Name**.

This is the upgrade policy name you will be able to use to track the upgrade progress at any time.

b) Click **Select Nodes**.

The **Select Nodes** window opens.

c) Select a site, then select the switch nodes in that site and click **Add and Close**.

You can add switch nodes from a single site at a time. You will repeat this step if you want to add switches from other sites.

d) Repeat the previous substep for nodes in other sites
e) Click **Next** to proceed.

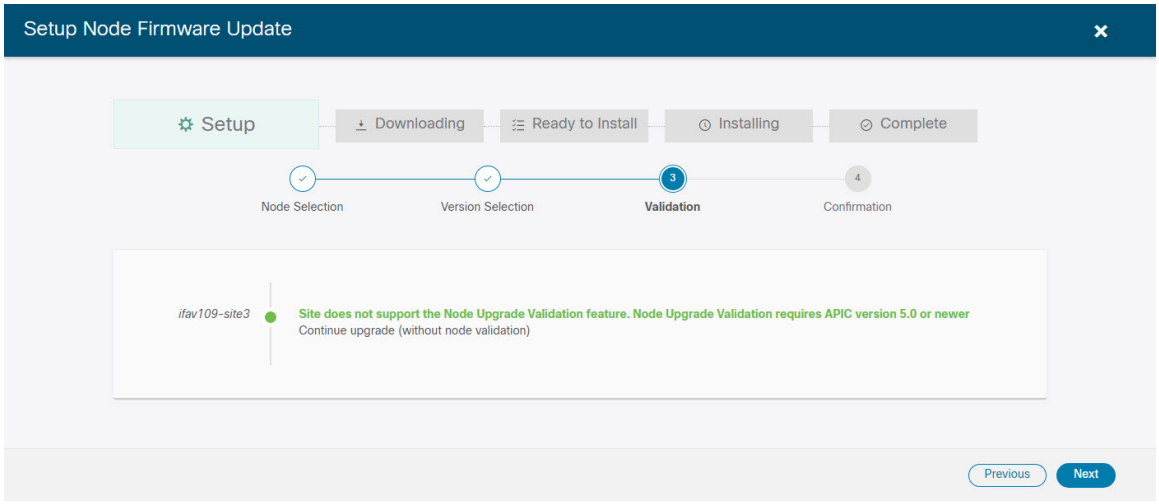
Step 4 In the **Version Selection** screen, select the firmware version and click **Next**.

The firmware must be downloaded to the sites before it becomes available here. If the download you set up in previous section has completed successfully but the image is still not available here, close the **Setup Site Firmware Update** screen, navigate back to **Operations** > **Sites Firmware** > **Nodes** tab, and click the **Refresh** button to reload the latest information available for the sites; then restart the upgrade steps.

Step 5 In the **Validation** screen, ensure that there are no faults raised, then click **Next**.

Ensure that there are no faults and review any additional information that may affect your upgrade:

Note
Sites running releases prior to Release 5.0(1) do not support node validation, so we recommend checking for any switch node faults in the site's APIC prior to starting the upgrade from MSO.



Step 6 In the **Confirmation** screen, review the information and click **Submit**.

This will trigger image to be pre-downloaded to all the nodes you have selected. After the download completes, the screen will transition to **Ready to Install** and you can proceed to the next step.

Step 7 (Optional) Change **Advanced Settings**.

Note
Review the guidelines, recommendations, and limitations for the Cisco APIC upgrade process described in the Upgrading and Downgrading the Cisco APIC and Switch Software of the *Cisco APIC Installation, Upgrade, and Downgrade Guide* before making changes to the advanced options.

In the **Ready to Install** screen, you can open the **Advanced Settings** menu for additional options:

- **Ignore Compatibility Check**—by default, the option is set to `No` and compatibility check is enabled and verifies if an upgrade path from the currently-running version of the system to a specified newer version is supported.

  If you choose to ignore the compatibility check feature, you run the risk of making an unsupported upgrade to your system, which could result in your system going to an unavailable state.

- **Graceful Check**—by default, the option is set to `No` and the upgrade process will not put any of the switches into Graceful Insertion and Removal (GIR) mode before performing the upgrade.

  You can choose to enable this option to bring down the node gracefully (using GIR) while performing the upgrade so that the upgrade will have reduced traffic loss.

- **Run Mode**—by default, the option is set to `Continue on Failure` and if a node upgrade fails, the process proceeds to the next node. Alternatively, you can set this option to `Pause on Failure` to halt upgrade process if any one of the node upgrades fails.

Step 8 Remove any nodes marked as `Failed` from the upgrade.

The upgrade cannot proceed if the upgrade policy contains one or more nodes that failed to download the firmware. You can mouse over the `Failed` status for more information and reason for failure.

To remove the nodes from the upgrade, click **Edit Update Details** link in the **Ready to Install** screen.

Step 9 Click **Install** to start the upgrade.

If MSO to site connectivity is lost during the upgrade process, the GUI will display the last known status of the upgrade prior to loss of connectivity. Once connectivity is re-established, the upgrade status will be refreshed. You can perform a manual refresh after connectivity loss by clicking the **Refresh** button in the top right of the main pane.