
Devices

Use the Devices screen to add or delete Viptela devices from the overlay network.

Note: For purposes of certificate management, the term *controller* is used to collectively refer to the vManage NMS, the vSmart controller, and the vBond orchestrator.

Screen Elements

- Top bar—On the left are the menu icon, for expanding and collapsing the vManage menu, and the vManage product name. On the right are a number of icons and the user profile drop-down.
- Title bar—Includes the title of the screen, Devices.
- vEdge List tab—Upload the vEdge authorized serial number file to the vManage NMS. When you first open the Devices screen, the vEdge List tab is selected.
 - Change mode—Switch between vManage and CLI mode.
 - Upload vEdge List—Upload the vEdge router authorized serial number file to the vManage NMS.
 - Export Bootstrap Configuration—Generate and download a bootstrap configuration for multiple vEdge Cloud routers.
 - Table of vEdge routers in the overlay network—To re-arrange the columns, drag the column title to the desired position.
- Controllers tab—Add controllers to the overlay network.
 - Add Controller drop-down—Add controllers to the overlay network.
 - Change mode drop-down—Switch between vManage and CLI mode.
 - Table of controller devices in the overlay network—To re-arrange the columns, drag the column title to the desired position.
- Search box—Includes the Search Options drop-down, for a Contains or Match string.
- Refresh icon—Click to refresh data in the device table with the most current data.
- Export icon—Click to download all data to a file, in CSV format.
- Show Table Fields icon—Click to display or hide columns from the device table. By default, all columns are displayed.



The screenshot shows the Cisco vManage web interface. The left sidebar contains navigation links: Dashboard, Monitor, Configuration, and Devices. The 'Configuration' section is expanded, showing 'vEdge List' and 'Controllers' tabs. The 'vEdge List' tab is active, displaying a table of vEdge routers. Above the table are buttons for 'Change Mode', 'Upload vEdge List', and 'Export Bootstrap Configuration'. The table has columns: State, Device Model, Chassis Number, Serial No./Token, Hostname, System IP, Site ID, Mode, and an ellipsis. The table contains 5 rows of data. Annotations with arrows point to the 'Menu' icon in the top left, the 'vEdge Routers Table' title, and the 'Change Mode' button.

State	Device Model	Chassis Number	Serial No./Token	Hostname	System IP	Site ID	Mode	
✓	vEdge Cloud	56b09249-058d-4a12-9641-48ad18cef5...	12345703	vm11	172.16.255.21	100	CLI	...
✓	vEdge Cloud	1f14e297-7649-4f24-a788-89847569c2f0	12345711	vm4	172.16.255.14	400	CLI	...
✓	vEdge Cloud	d0af68a4-50f1-4a6a-bffb-3a667d29855a	12345715	vm1	172.16.255.11	100	CLI	...
✓	vEdge Cloud	42a65ffc-0b74-4539-9c41-eb0c08c638...	12345712	vm5	172.16.255.15	500	CLI	...
✓	vEdge Cloud	5826ec38-ea10-430a-b1b1-b6dcf4b735...	12345709	vm6	172.16.255.16	600	vManage	...

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Change Configuration Modes

To toggle a vEdge router from vManage mode to CLI mode:

1. In vEdge List tab, select a device.
2. Click the Change Mode drop-down and select CLI mode.

An SSH window opens. To log in to the device, enter a username and password. You can then issue CLI commands to configure or monitor the device.

To toggle a controller device from vManage mode to CLI mode:

1. In the Controllers tab, select a device.
2. Click the Change Mode drop-down.
3. Select CLI mode and then select the device type. The Change Mode CLI window opens.
4. From the vManage mode pane, select the device and click the right arrow to move the device to the CLI mode pane.
5. Click Update to CLI Mode.

An SSH window opens. To log in to the device, enter a username and password. You can then issue CLI commands to



configure or monitor the device.

Upload vEdge Authorized Serial Number File

The vEdge authorized serial number file contains the chassis and serial numbers of all valid vEdge routers in the overlay network. You receive this file from Viptela. Then, from the vManage NMS, you send it to the controllers in the network. This file is required to allow the Viptela overlay network components to validate and authenticate each other and thus to allow the overlay network to become operational.

To upload the vEdge router authorized serial number file to the vManage NMS and then download it to all the controllers in the overlay network:

1. In the vEdge List tab, click Upload vEdge List.
2. In the Upload vEdge window:
 1. Click Choose File and select the vEdge authorized serial number file you received from Viptela.
 2. To automatically validate the vEdge routers and send their chassis and serial numbers to the controllers, click and select the checkbox Validate the Uploaded vEdge List and Send to Controllers. If you do not select this option, you must individually validate each router in Configuration ► Certificates ► vEdge List.
3. Click Upload.

A list of vEdge routers in the network is displayed, with details about each router.

Generate Bootstrap Configuration for a vEdge Cloud Router

To generate a bootstrap configuration for a vEdge Cloud router:

1. In the vEdge List tab, select a vEdge Cloud router.
2. Click the More Actions icon to the right of the row and click Generate Bootstrap Configuration.
3. In the Generate Bootstrap Configuration window:
 - To configure a vEdge Cloud router on a KVM hypervisor or on an AWS server, select Cloud-Init to generate a token, vBond orchestrator IP address, vEdge Cloud router UUID, and organization name. Then click OK.
 - To configure a vEdge Cloud router on a VMware hypervisor, select Encoded String to generate an encoded string. Then click OK.
4. Click Download to download the configuration information.
5. Provision the vEdge Cloud router instance in AWS, KVM, or ESXi with the bootstrap configuration.
 - By default, ge0/0 is the device's tunnel interface and is a DHCP client. To use an interface other than ge0/0 as the tunnel interface or to use a static IP as the IP address, reconfigure the device through the CLI. For more



information about configuring interfaces, see [Configure Network Interfaces](#).

After you provision the vEdge Cloud router instance, vManage NMS installs a certificate on the device and the device's token changes to a serial number. After the device's control connections to vManage NMS come up, any templates attached to the device are automatically pushed to the device.

To generate and download a bootstrap configuration for multiple vEdge Cloud routers:

1. In the vEdge list tab, click the Export Bootstrap Configuration button.
2. In the Export Bootstrap Configuration window, select the devices to configure from the Available Devices pane, or click Select All to select all devices.
3. Click the right arrow to move the devices to the Selected Devices pane.
4. Click Generate Configuration.

Export Device Data in CSV Format

To export data for all devices to a file in CSV format, click the Export icon. This icon is located to the right of the filter criteria both in the vEdge List and in the Controllers tab.

vManage NMS downloads all data from the device table to an Excel file in CSV format. The file is downloaded to your browser's default download location and is named `viptela_download.csv`.

View a Device's Running Configuration

To view a device's running configuration:

1. In the vEdge List or Controllers tab, select the device.
2. Click the More Actions icon to the right of the row and click Running Configuration.

View a Device's Configuration

To view a device's configuration created using Configuration ► Templates:

1. In the vEdge List or Controllers tab, select the device.
2. Click the More Actions icon to the right of the row and click Local Configuration.

Delete a vEdge Router

Deleting a vEdge router removes its serial and chassis numbers from the vEdge serial number list and permanently



removes the router's configuration from the vManage NMS.

1. On the Configuration ► Certificates screen, mark the vEdge router as invalid.
2. On the Configuration ► Devices screen, in the vEdge List tab, select the router.
3. Click the More Actions icon to the right of the row and click Delete vEdge.
4. Click OK to confirm deletion of the device.
5. On the Configuration ► Certificates screen, click Send to Controller.

Copy a vEdge Router's Configuration

When you are replacing one router at a site with another router, you copy the old router's configuration to the new router. Then you remove the old router from the network and add the new one.

To copy the configuration from the old router to the new router:

1. In the Configuration ► Certificates screen, mark the new vEdge router as invalid.
2. In the Configuration ► Devices screen, in the vEdge List tab, select the old router.
3. Click the More Actions icon to the right of the row and click Copy Configuration.
4. In the Copy Configuration window, select the new router.
5. Click Update to confirm the copy of the configuration.

After you have copied the configuration to the new router, you can add the new router to the network. First, delete the old router from the network, as described below. Then add the new router to the network:

1. In the Configuration ► Certificates screen, mark the new router as valid.
2. Click Send to Controller.

Decommission a vEdge Cloud Router

Decommissioning a vEdge Cloud router removes the device's serial number from vManage NMS and generates a new token for the device. To do so:

1. In the vEdge List tab, select a vEdge Cloud router.
2. Click the More Actions icon to the right of the row and click Decommission vEdge.
3. Click OK to confirm the decommissioning of the router.



View Log of Template Activities

To view a log of activities related to creation of configuration templates and the status of attaching configuration templates to devices:

1. In the vEdge List or Controllers tab, select the template.
2. Click the More Actions icon to the right of the row and click Template Log.

Add a vBond Orchestrator

1. In the Controllers tab, click the Add Controller drop-down and select vBond.
2. In the Add vBond window:
 1. Enter the management IP address of the vBond controller.
 2. Enter the username and password to access the vBond orchestrator.
 3. Select the Generate CSR checkbox to allow the certificate-generation process to occur automatically.
 4. Click Add.
3. Repeat Steps 1 and 2 to add additional vBond orchestrators.

The new vBond orchestrator is added to the list of controllers in the Controllers screen.

Add a vSmart Controller

1. In the Controllers tab, click the Add Controller drop-down and select vSmart.
2. In the Add vSmart window:
 1. Enter the system IP address of the vSmart controller.
 2. Enter the username and password to access the vSmart controller.
 3. Select the protocol to use for control-plane connections. The default is DTLS.
 4. If you select TLS, enter the port number to use for TLS connections. The default is 23456.
 5. Select the Generate CSR checkbox to allow the certificate-generation process to occur automatically.
 6. Click Add.
3. Repeat Steps 1 and 2 to add additional vSmart controllers. The vManage NMS can support up to 20 vSmart controllers in the network.

The new vSmart controller is added to the list of controllers in the Controllers screen.



Edit Controller Details

To edit the IP address and login credentials of a controller device:

1. In the Controllers tab, select the controller.
2. Click the More Actions icon to the right of the row and click Edit.
3. In the Edit window, edit the IP address and the login credentials.
4. Click Save.

Delete a Controller

1. In the Controllers tab, select the controller.
2. Click the More Actions icon to the right of the row and click Invalidate.
3. Click OK to confirm the removal of the device and all its control connections.

Change Variable Values for a Device

The feature templates that you create using the Configuration ► Templates screen will most likely contain variables. To have the vManage NMS populate the variables with actual values when you attach a device template to a device, you create an Excel file that lists the variable values for each device and save the file in CSV format.

Once you push the configuration to a device, you can change the value assigned to any variables. To do so:

1. In the vEdge List or Controllers tab, select the device.
2. Click the More Actions icon to the right of the row and click Change Device Values.
3. Edit the variable values that you previously entered for the device in one of the following ways:
 - Click the More Actions icon to the right of the row and click Edit Device Template. In the Update Device Template window, edit the values as needed and click Update. Repeat for each device for which you wish to edit the variable values.
 - Click Import File in the upper right corner of the screen to upload a CSV file that lists all the variables and defines each variable's value for the device.

Once you have provided the value for all variables, the Status column for each device row displays a green check mark.

4. Click Next.
5. In the left pane, select the device to preview the configuration that is ready to be pushed to the device. The right pane



displays the device's configuration and the Config Preview tab in the upper right corner is selected.

Click the Config Diff tab to preview the difference between this configuration and the previously attached template, if applicable.

Click the Back button to edit the variable values entered in the previous screen.

6. Click Configure Devices to push the configuration to the device.

The Status column displays if the configuration was successfully pushed or not. Click the right angle bracket to the left of the row to display details of the push operation.

