
Templates

Use the Templates screen to configure all Viptela devices in the overlay network that are managed by the vManage NMS. To do so:

1. Create feature templates for each feature that you want to enable on a Viptela device. See [Available Feature Templates](#).
2. Create device templates by consolidating together individual feature templates.
3. Attach the Viptela device to the device template.

Screen Elements

- Title bar—Includes tabs for Device and Feature.
- Device tab—Create device templates for configuring Viptela devices.
- Feature tab—Create feature templates for configuring features that you can enable on a Viptela device.
- Create Template bar.
- Template Types—Select from All, Default, and Non-Default. Default are factory-default templates shipped with the vManage NMS. Non-default are custom-created templates. When you first come to the Templates screen, all templates are displayed in the templates table below.
- Filter criteria—Sort options drop-down and Search box, for a Contains or Match string.
- Templates table, displaying the name of the template, device model for which the template was created, and update information.
- Task bar displays completed and in-progress tasks.



Annotations in the screenshot:

- Create Template
- Device
- Feature
- Template Types
- Search
- Templates Table
- Running Tasks

Name	Description	Type	Device Model	Feature Templates	Devices Attached	Updated By	Last Updated
Factory_Default_...	Vedge_100B	CLI	vedge-100-B	0	0	admin	16 Mar 2016 3:51...
Factory_Default_...	Vedge_100M	CLI	vedge-100-M	0	0	admin	16 Mar 2016 3:51...
Factory_Default_...	Vedge_2000	CLI	vedge-2000	0	0	admin	16 Mar 2016 3:51...
Factory_Default_...	Vedge_1000	CLI	vedge-1000	0	0	admin	16 Mar 2016 3:51...
Factory_Default_...	Vedge_100	CLI	vedge-100	0	0	admin	16 Mar 2016 3:51...
VM1	VM1	CLI	vbond	0	0	admin	17 Mar 2016 2:22...
VM2	VM2	CLI	vedge-cloud	0	0	admin	17 Mar 2016 2:21...
input	test	Feature	vedge-cloud	13	0	admin	17 Mar 2016 10:3...
vm5_cli	test	CLI	vedge-cloud	0	0	admin	18 Mar 2016 5:30...

Create Feature Templates

Feature templates are the building blocks of a device's complete configuration. For each feature that you can enable on a Viptela device type, vManage NMS provides a template form that you fill out with the desired parameters for that feature. You can create multiple templates for the same feature. For a list of feature templates, see [Available Feature Templates](#).

To create feature templates:

1. From the Templates title bar, select Feature.
2. Click Add Template.
3. In the left pane, from Select Devices, select the type of device for which you are creating a template. You can create a single feature template for features that are available on multiple device types. You must, however, create separate feature templates for software features that are available only on the device type you are configuring.
4. In the right pane, select the template. The template form is displayed. The top of the form contains fields for naming the template, and the bottom contains fields for defining required parameters. If the feature has optional parameters, the bottom of the template form shows a plus sign (+) after the required parameters.



5. Enter a template name and description. These fields are mandatory. Also, you cannot use any special characters in template names.
6. For each required parameter, choose the desired value, and if applicable, select the scope of the parameter. Select the scope from the drop-down menu to the left of each parameter's value box:

Parameter Scope	Scope Description
Default (indicated by a check mark)	<p>Use the default value for the parameter.</p> <p>If the parameter is already configured on a device, the configured value is not modified.</p> <p>If the parameter is not yet configured on a device and if it has a default value, that default value is configured on the device. Examples of parameters that have default values are timers.</p>
Device specific (indicated by a host icon)	<p>Use a device-specific value for the parameter.</p> <p>When you attach the master configuration template to the vSmart controller, you must enter the value for the parameter. You can type the values manually, or you can upload a variables template that contains the parameter's value.</p> <p>Examples of device-specific parameters are system IP address, hostname, GPS location, and site ID.</p>
Global (indicated by a globe icon)	<p>Enter a value for the parameter, and apply that value to all devices.</p> <p>Examples of parameters that you might apply globally to a group of devices are DNS server, syslog server, and interface MTUs.</p>

7. Click the plus sign (+) below the required parameters to set the values of optional parameters.
8. Click Create.
9. Create feature templates for each of the required features.
10. Create any additional feature templates for each optional feature that you want to enable on the device type.

Create Device Templates

Device templates contain a device's complete operational configuration. You create device templates by consolidating together individual feature templates. You can also create them by entering a CLI text-style configuration directly on the vManage NMS.

To create device templates from feature templates:



1. From the Templates title bar, select Device.
2. Click Create Template, and from the drop-down list select From Feature Template.
3. From the Device Model drop-down, select the type of device for which you are creating the device template. vManage NMS displays the required feature templates for the device type you selected.
4. Enter a name and description for the device template. These fields are mandatory. The template name cannot contain special characters.
5. Select each feature template in turn, and from the drop-down list of available feature templates, select the desired template. The available feature templates are the ones that you previously created. Required templates are indicated with an asterisk (*).
6. To add optional feature templates to the device template, click the plus sign (+) next to template names listed to the right of the screen, in the Additional Templates section.
7. From the drop-down list of available optional templates, select the desired template. The available optional templates are the ones that you previously created.
8. Click Create. The new device template is displayed in the Templates table. The Feature Templates column shows the number of feature templates that are included in the device template, and the Type column shows "Feature" to indicate that the device template was created from a collection of feature templates.

To create device templates by entering a CLI text-style configuration directly on the vManage NMS:

1. From the Templates title bar, select Device.
2. Click Create Template, and from the drop-down list, select CLI Template.
3. From the Device Type drop-down, select the type of device for which you are creating the template.
4. Enter a name and description for the device template. These fields are mandatory. The template name cannot contain special characters.
5. Enter the configuration in the CLI Configuration box, either by typing it, cutting and pasting it, or uploading a file.
6. To convert an actual configuration value to a variable, select the value and click Create Variable. Enter the variable name, and click Create Variable. You can also type the variable name directly, in the format `{{variable-name}}`; for example, `{{hostname}}`.
7. Click Add. The new device template is displayed in the Templates table. The Feature Templates column shows the number of feature templates that are included in the device template, and the Type column shows "CLI" to indicate that the device template was created from CLI text.

Edit a Template

1. In the Device or Feature tab, select a template.
2. Click the More Actions icon to the right of the row and click Edit.



View a Template

1. In the Device or Feature tab, select a template.
2. Click the More Actions icon to the right of the row and click View.

Delete a Template

1. In the Device or Feature tab, select a template.
2. Click the More Actions icon to the right of the row and click Delete.
3. Click OK to confirm deletion of the template.

View Devices Attached to a Device Template

For a device template that you created from feature templates:

1. In the Device tab, select a template.
2. Click the More Actions icon to the right of the row and click Attach Devices.
3. In the Attach Devices window, click the Attached Devices tab.

For a device template that you created from a CLI template:

1. In the Device tab, select a template.
2. Click the More Actions icon to the right of the row and click Show Attached Devices.

Attach Devices to a Device Template

To attach one or more devices to a device template:

1. In the Device tab, select a template.
2. Click the More Actions icon to the right of the row and click Attach Devices. The Attach Devices dialog box opens with the Select Devices tab selected
3. In the Available Devices column on the left, select a group and search for one or more devices, select a device from the list, or click Select All.
4. Click the arrow pointing right to move the device to the Selected Devices column on the right.
5. Click Attach.
6. If the template contains variables, enter the missing variable values for each device you selected in one of the



following ways:

- Enter the values manually for each device either in the table column or by clicking the More Actions icon to the right of the row and clicking Edit Device Template.
- 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 each device.

Once you provide values for all variables, the Status column for each device row displays a green check mark.

7. Click Next.
8. 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 differences between this configuration and the configuration currently running on the device, if applicable.
Click the Back button to edit the variable values entered in the previous screen.
9. Click Configure Devices to push the configuration to the devices.
The Status column displays whether the configuration was successfully pushed. Click the right angle bracket to the left of the row to display details of the push operation.

Copy a Template

1. In the Device or Feature tab, select a template.
2. Click the More Actions icon to the right of the row and select Copy.
3. Enter a new template name and description.
4. Click Copy.

Edit a CLI Device Template

1. In the Device tab, select a template.
2. Click the More Actions icon to the right of the row and click Edit.
3. In the Device CLI Template window, edit the template.
4. Click Update.

Export a Variables Spreadsheet in CSV Format for a Template

1. In the Device tab, select a device template.



2. Click the More Actions icon to the right of the row and click Export CSV.

Change Variable Values for a Device

To change the variable values for a device template that has devices attached to it:

1. In the Device tab, select a template.
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 each device.

Once you provide 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 differences between this configuration and the configuration currently running on the device, 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 devices. The Status column displays whether the configuration was successfully pushed. Click the right angle bracket to the left of the row to display details of the push operation.

Available Feature Templates

vManage NMS provides the following feature templates to configure all Viptela devices in the overlay network:

- [AAA](#)
- [Archive](#)
- [Banner](#)
- [BFD](#)
- [BGP](#)



- [Bridge](#)
- [Cellular-Profile](#)
- [DHCP-Server](#)
- [IGMP](#)
- [Logging](#)
- [Multicast](#)
- [NTP](#)
- [OMP](#)
- [OSPF](#)
- [PIM](#)
- [Security](#)
- [SNMP](#)
- [System](#)
- [VPN](#)
- [VPN-Interface-Bridge](#)
- [VPN-Interface-Cellular](#)
- [VPN-Interface-Ethernet](#)
- [VPN-Interface-GRE](#)
- [VPN-Interface-PPP](#)
- [VPN-Interface-PPP-Ethernet](#)

