



## Create SAE Site and Deploy Services

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An SAE site allows you to define your infrastructure and instantiate services on the infrastructure. Infrastructure definition allows you to group Nexus 9000 devices (that are in vpc pairs) and associated CSPs together as a cluster. An SAE site provides the most flexible way of defining and instantiating services on the infrastructure.

The Site area of the GUI displays the existing sites. Use this area to create new sites, add endpoints to a site, and deploy services on a site.

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### View Site Details

The Site area of the GUI displays a snapshot of each of your existing sites and the tenants associated with the sites. The site snapshot displays the name of the site and icons for Exporting Infrastructure, Site Inventory, Inventory Discovery, Edit, Delete and so on as shown below.

Figure 1: Site Details



1	Exporting Infrastructure Only	5	Delete Site
2	Edit/Add Provider Endpoints Site Inventory	6	Resource Zone
3	Site Inventory	7	Add Tenant
4	Discovery		

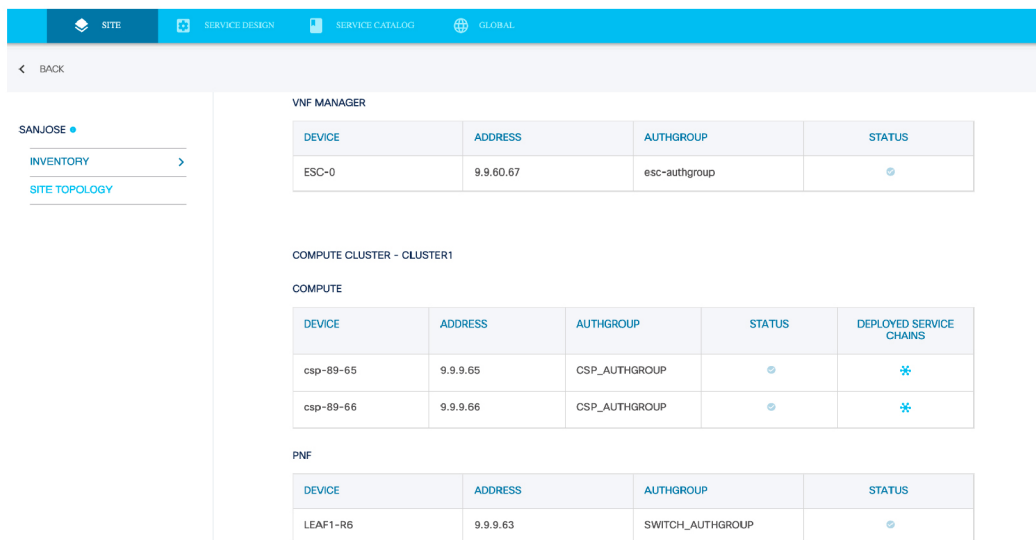
**Step 1** Choose the site that you want to view the details for, click the icon.

The devices, physical network functions and topology associated with the site display.

**Step 2** Click **Inventory** to view the device inventory and status for the selected site.

The switches, servers and physical network functions that are associated with the site are displayed.

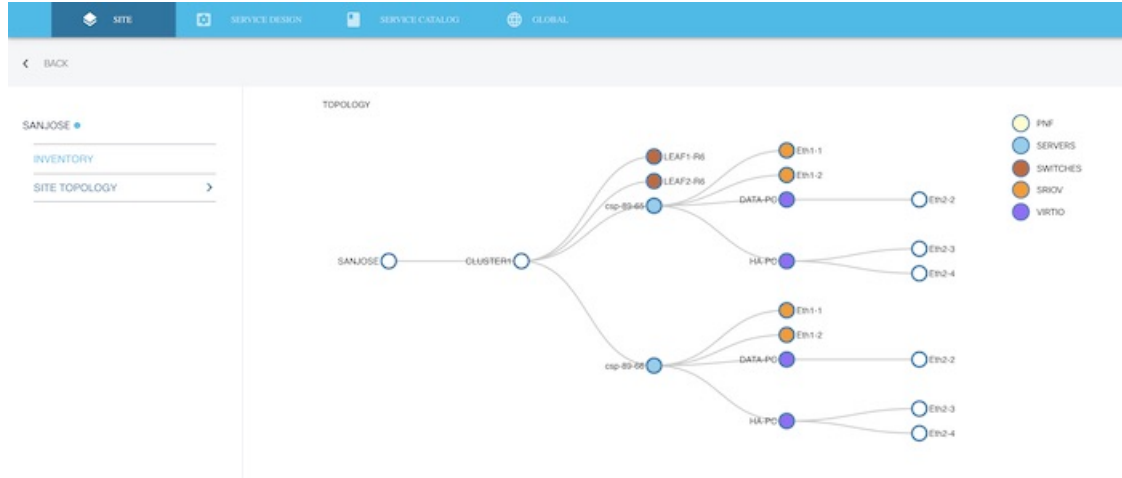
Click on the cluster or servers to minimize the display.



**Step 3** Click **Site Topology** to view the site hierarchy and various physical network functions, devices and interfaces in the site along with the legends icons to differentiate between servers, switches and PNFs.

By default, expanded topology of site is displayed.

You can also minimize the clusters and components. To view the clusters within a site, click the representative site. To view the components of the cluster, click the clusters to expand them. Continue to click the various components that appear to view more details.



## Create Site

**Step 1** Click **Configuration** at the top right corner of the homepage.

**Step 2** In the Site area, click **Add**.

**Step 3** Provide the requested information.

Field	Description
Name	Enter a name for the site.
Organization	From the drop-down list, choose your organization.
AS pool	Select an AS pool from the drop-down menu for choosing BGP's AS numbers for creating chains on this site.
BGP ASN	Enter the BGP ASN.
ACI Controller (Optional Field)	If you select the ACI Fabric checkbox, the ACI Controller drop-down list displays. Choose the appropriate ACI Controller pool.  <b>Note</b> The ACI Controller dropdown list will display the active and connected APIC devices in NSO.
Router ID Pool (Optional Field)	If you select the ACI Fabric checkbox, the Router ID Pool drop-down list displays which is tagged to IP pools. Choose the appropriate Router ID Pool pool.

Field	Description
Compute Clusters (Optional Field)	<p><b>Compute Clusters:</b> Click + next to the Compute Clusters field. Enter the name of the compute cluster and choose a pool from VLAN-Pool drop-down list.</p> <p><b>Leaf Switches:</b> Choose the switches from the <b>Switch1</b> and <b>Switch2</b> drop-down menus. Click + next to Custom Template and select a custom template from the <b>Name</b> drop-down menu. The custom template pushes the day1 config to the service.</p> <p><b>Servers:</b> Click + next to the Servers option. Select a server from the Name drop-down menu. Select a profile from the Server Profile drop-down menu.</p> <p><b>PNF Devices:</b> Click + next to the PNF Devices option. Select physical device name from the Name drop-down menu. Note: The physical device name is populated according to the cluster. Enter the BGP AS number for this device.</p>
Configuration Parameters (Optional Field)	Add the variables and values to set any additional configuration parameters. Enter the name and value for day0 configuration parameters. These values will be used as variables in day0 file before deploying the service.

**Step 4** (Optional) Click **Validate** to verify your inputs.

**Step 5** Click **Save** to save the site.

### What to do next

Click **Back** to go back to the previous page.

Expand the **Select Site** dropdown and choose the site.

Enter name of the tenant in **Search Tenant** to search the tenant in the site.



#### Note

Click  on top right corner to delete an existing site.

## Discover Site Inventory

When you have created an SAE site, you can use the Discovery option to discover the infrastructure for the site instead of adding it manually. To learn how to create a site, visit the Create Site section.

When you have configured your CSP devices and switches, the discovery option in the UI uses LLDP to discover all other devices.

### Limitations

- The inventory discovery option does not support discovery of physical FTD devices.

**Step 1** Click the **Discovery** icon next to the name of a site to discover inventory for the site.



1	Exporting Infrastructure Only	5	Delete Site
2	Edit/Add Provider Endpoints Site Inventory	6	Resource Zone
3	Site Inventory	7	Add Tenant
4	Discovery		

**Step 2** Provide the requested information.

- **Start Device IP:** Enter the IP address of Nexus 9000 switch.
- **Switch Authgroup:** From the drop-down, choose the authgroup that contains the username and password for accessing the Nexus 9000 switches.
- **CSP Authgroup:** From the drop-down, choose the authgroup that contains the username and password for accessing the CSP devices.
- **ASR Authgroup:** From the drop-down, choose the authgroup that contains the username and password for the accessing the Cisco ASR devices.
- **VLAN Pool:** Select a VLAN pool from the drop-down list.
- **Server Type:** Select the server profile from the drop-down list. The server profile you choose in this drop-down here should be present in the catalog that is associated with the site.
- **Cluster Name:** Choose the resource cluster from the drop-down list. The list shows all the clusters configured under the Compute Cluster for this site.

**Step 3** Click **OK**.

Your site inventory appears in the **Site Inventory > Inventory** page and in the following format.

# Add Resource Zones to a Site

You can add, view, and delete resource zones for a particular site in the Site Area of the UI. Resource zones are always attached to sites.

**CSP Resource Zones:** CSP resource zones are used for CSP devices.

- When there are CSP devices attached to a site, a CSP zone is created by default. Such a default CSP zone includes all the CSP devices within a site.




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**Note** If you don't have any CSP devices associated with your site, the CSP resource zone will not be created by default.

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- You can create additional resource zones and add one or more CSP devices from your site to the resource zones. However, to be able to create a resource zone, you must have at least one CSP device within your site.

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- Step 1** In the Site area, click **Resource Zone** next to the site for which you want to create resource zones.
  - Step 2** The Site field is populated automatically.
  - Step 3** To create a CSP Resource Zone, click + next to CSP Resource Zones option.
    - Note** The + sign to add a resource zone is visible only if you have CSP devices or physical FTD devices within your site.
  - Step 4** Provide the requested information.
    - a) **Name:** Enter a name for the resource zone
    - b) **VCompute:** Select a device to be added to the resource zone from the drop-down menu.
  - Step 5** (Optional) Click **Validate** to verify your inputs.
  - Step 6** Click **Save** to save the resource zone.
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### What to do next

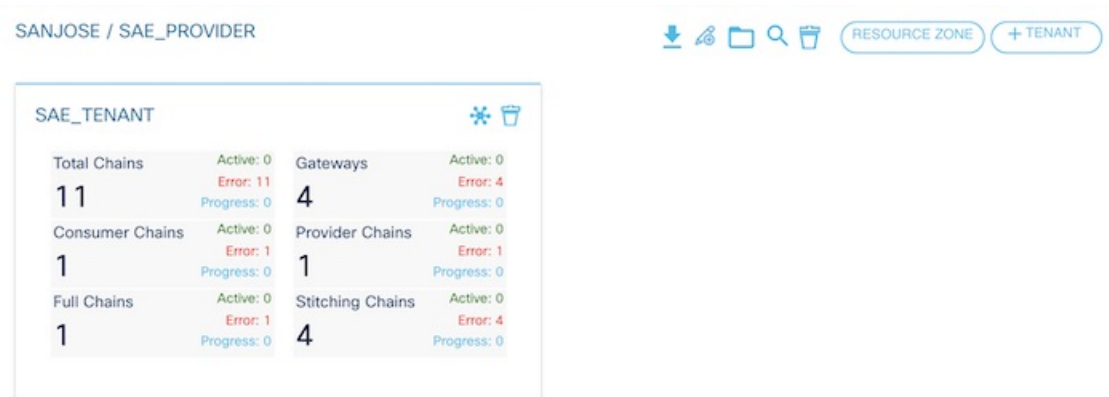
Click **Back** to go back to the previous page.



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- Note**
- Click  within the resource zone window to delete an existing resource zone.
  - Click  next to a device to remove the device from the resource zone.
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# Add Tenants to a Site

You can add, view, and delete tenants for a particular site in the Site Area of the UI. Any tenants under a site, they are displayed below the Site tile.



**Step 1** In the Site area, click the + **Tenant** button next to the site to which you want to add a tenant.

**Step 2** From the **Name** drop-down list, choose the tenant.

**Step 3** From the **Data IP Pool** drop-down list, choose an IP pool to pick IP addresses for all data traffic from.

**Step 4** Provide the requested information in the right panel of the screen .

Option	Description
Management	<ul style="list-style-type: none"> <li>• <b>Management IP Pool:</b> From the drop-down list, choose an IP address pool to pick IP addresses for management connections. .</li> <li>• <b>VLAN:</b> Enter the VLAN ID for management network within the tenant.</li> <li>• <b>Netmask:</b> Enter a management network netmask.</li> <li>• <b>Gateway:</b> Enter a gateway IP address for network management.</li> </ul>
Resource Zone	Click + next to the Resource zone option to add a resource zone. Select a resource zone from the drop-down list. Click the + sign again to add more resource zones.
Configuration Parameters	Add the variables and values to set any additional configuration parameters.



**Step 5** (Optional) Click **Validate** to verify your inputs.

**Step 6** Click **Save** to save the tenant.


## What to do next

Click **Back** to go back to the previous page.

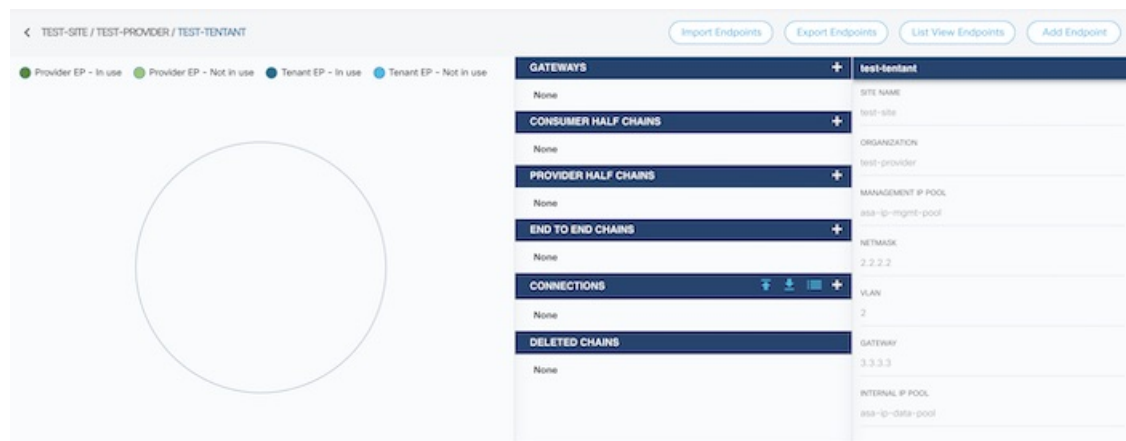
**Note**

Click  on the tenant snapshot to delete the tenant. Click  to edit an existing tenant.

## About the Service Deployment Screen

The Site area displays all your existing sites and the tenants associated with them. Click the  icon on the tenant for which you want to view or deploy services.

The page displays the site properties, the gateways, and service chains deployed for the site, and a graphical representation of the service chains deployed.



- The circular image on the left side of the screen represents the site. The endpoints that you add to the site appear along the circumference of the circle.
- The section in the middle shows the gateways, service chains and deleted chains that are deployed or removed on the site. If there is no data in this section, it means that there haven't been any deployments. You can add gateways and service chains by clicking the + icon in this section.
- The panel on the far right of the screen shows site properties.

### Gateways

Gateway services are shared endpoint gateways that are connected to one or more external endpoints. Such gateways are attached to service chains, thus allowing multiple service chains to share an endpoint gateway.

### Service Chains

The page includes separate headings for consumer half chains, provider half chains, connections, end-to-end chains and deleted chains.

Each of these sections lists the service chains deployed for the site. Each chain has setting icons for add/delete endpoints, sub-interface and tunnel, delete and download icon to delete and export the chain. Also it has either a checkmark or a warning sign next to it. The checkmark indicates that the service chain was successfully deployed. The warning sign indicates that the chain was not deployed due to errors.



### Service Chain Status

The status of a service chain is displayed next to the name of the chain. A checkmark next to the chain, indicates that the chain was successfully deployed. Click any service chain to know about its components and their status. An image of the service chain is displayed at the bottom of the page. Any component marked in red indicates issues with the component.

Click individual components for more details about their status. A VNF profile pop-up screen displays the status of the component. The component is shown in red if there are issues to be addressed. Click on the **Service Chain Instance** or **Service Chain** link to redirect to those screen respectively.

Hover over the VNF component to view a snapshot of the error. Click the VNF component to view all the details of the PNF profile of the component.

### PNF Profile

Click on the VNF component, a pop-up screen displays the details of the components.

Click on the **Virtual Chain Instance** or **Virtual Chain** link to redirect to those screen respectively.

**Enable Monitor on ESC:** On the header, click to Enable/Disable Monitor on ESC.

**Recovery on Same or Different CSP:** On the header, click setting icon, two options **Recover on Same CSP** and **Recover on Different CSP** are displayed. Click on the appropriate option.

A pop-up screen displays, enter the VNF undeploy wait time in seconds. The wait time should be in between 600 and 65535.

Note: When you choose to **Recovery on Same CSP** the CSP option in payload is changed from *realloc-on-same* to *recover-on-same*.


### Site Properties

The section on the far right of the page displays site properties such as the organization associated with the site, management IP pool associate with the site, and the netmask, VLAN, and gateway for VNF management and internal IP pool.

## Add and Edit End Points

### Add Provider-Level or Tenant-Level Endpoint

Endpoints connect your service chain to the external network.

- Step 1** On the **Site** screen, click the **Add/Edit Provider Endpoint**.
- Step 2** Click the  icon on the Site page to add an endpoint to an existing site provider.
- Step 3** Click **List View Endpoints** to view the list of existing endpoints.
- Step 4** On the Provider screen, click **Add Endpoint**.
- Step 5** Provide the requested information:

Field	Description
Name	Enter a name for the endpoint

Field	Description
Traffic Handoff Method	Indicate how traffic is delivered to SAE.
VLAN Number	Enter a VLAN number if you choose VLAN or VLAN over Port Channel in the previous field.
Endpoint ASN	Enter the BGP AS number of the endpoint.
Endpoint Remote ASN	Enter a BGP AS number of the servicechain end.
Endpoint IP Address	IP address of the endpoint
Endpoint Netmask	Netmark of the external end-point IP address
Subinterface ID	Subinterface ID
Subinterface Group	Check the checkbox to enter sub-interface group name and sub-interface ID. Note: The group name can be any string.
Name (Optional)	Enter the sub-interface group name. You can add more than one endpoints to the sub-interface group.
ID (Optional)	Enter the sub-interface ID.
Switch	The Nexus 9K switch through which the endpoint is connected to the SAE complex
Interface	The Nexus 9K interface through which the endpoint is connected to SAE complex

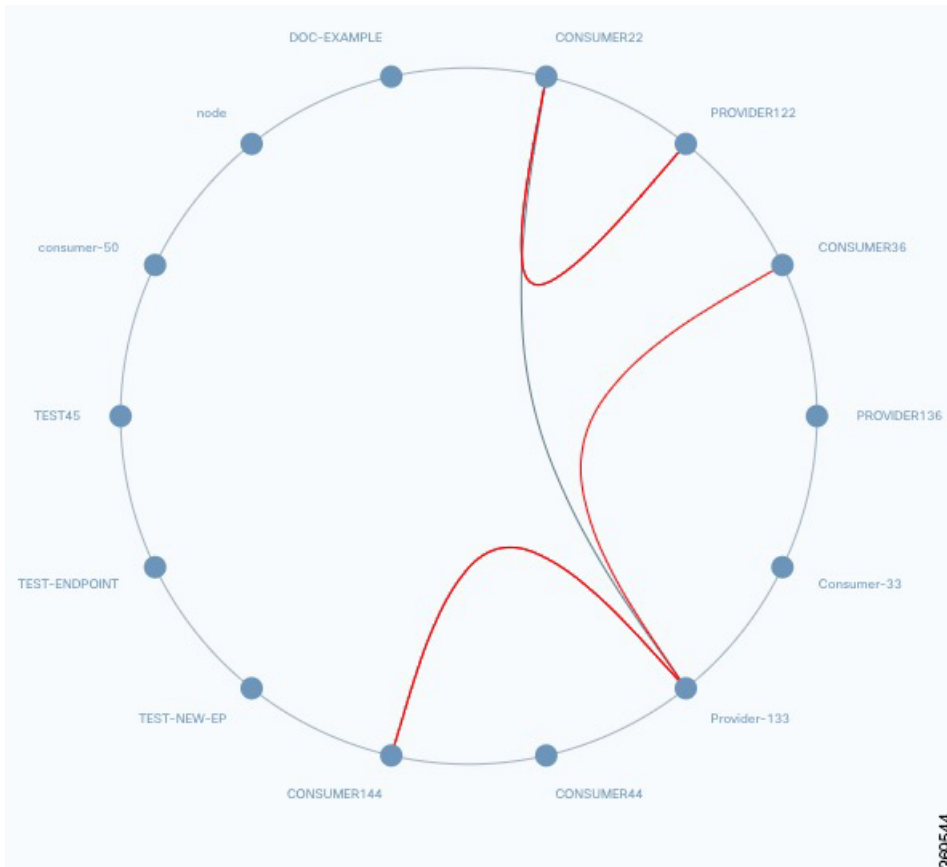
**Step 6** (Optional) Click the + sign next to Additional Peers to add peers and enter the requested information:

**Step 7** (Optional) Click **Validate** to verify your inputs.

**Step 8** Click **Save** to deploy the endpoint on the site.

**Step 9** Click **Cancel** to cancel the created provider endpoint on the site.

**Step 10** When deployed, you can see the endpoint on the circumference of the circle on the left of the screen. The circle represents the site.



- Note**
- If two or more service chains share the same endpoints, the service chains are not represented by separate lines between the endpoints.
  - You cannot connect an endpoint to itself. In other words, the two ends of a service chain (consumer end and provider end) must have separate endpoints.

## Add a Tenant Endpoint

Endpoints connect your service chain to the external network.



- Note** When you click a site for which you want to add an endpoint, you enter the provider-level. From here, you can only add or edit provider-level endpoints. To add or edit tenant level endpoints, you must click a tenant and enter the tenant-level.

- Step 1** On the **Site** screen, click on the service deployment icon on your desired site.
- Step 2** Click **Import Endpoints** to import the existing endpoints in bulk.

**Step 3** Click **Export Endpoints** to export the existing endpoints in bulk in JSON and XML format.

**Step 4** Click **List View Endpoints** to view the list of existing endpoints.

**Step 5** Click **Add Endpoint**.

**Step 6** Provide the requested information:

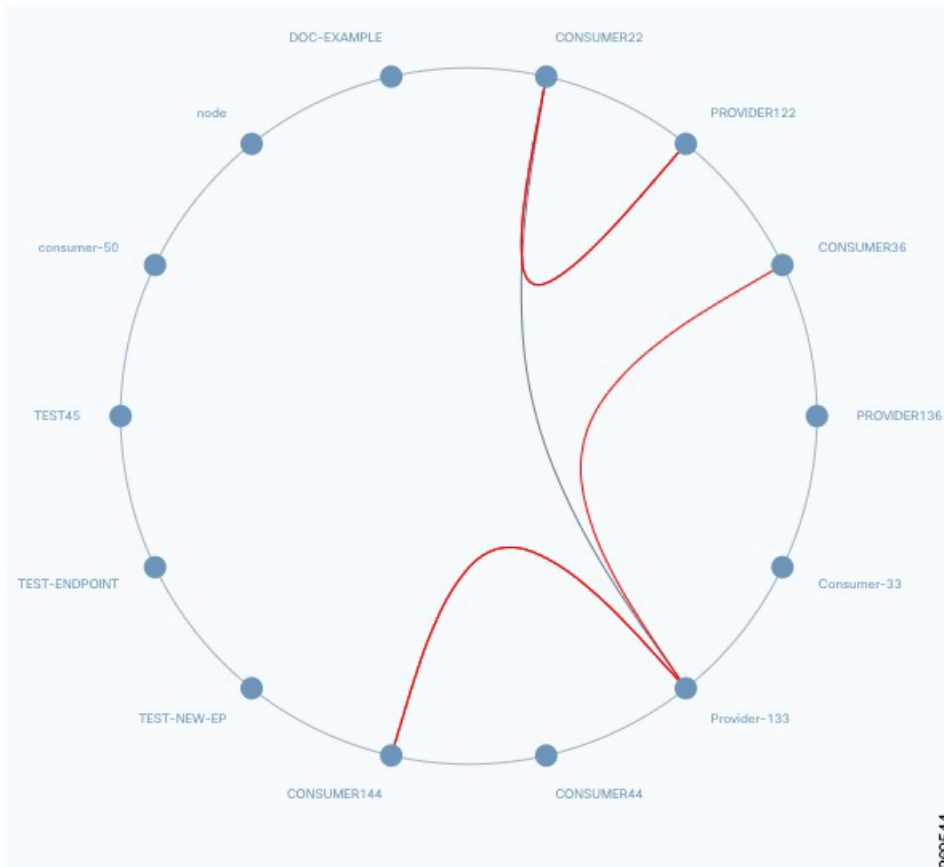
Field	Description
Name	Enter a name for the endpoint
Traffic Handoff Method	Indicate how traffic is delivered to SAE. In the drop-down menu, you can choose from VLAN, VLAN over Port Channel, or VPN tunnel.
VLAN Number	Enter a VLAN number if you choose VLAN or VLAN over Port Channel in the previous field.
Endpoint ASN	Enter a local BGP AS number
Endpoint Remote ASN	Enter a remote BGP AS number
Endpoint IP Address	IP address of the endpoint
Endpoint Netmask	Netmask of the external end-point IP address
Subinterface ID	Subinterface ID
Subinterface Group	The group that the subinterface ID belongs to
Name (Optional)	Enter the sub-interface group name. You can add more than one endpoints to the sub-interface group.
ID (Optional)	Enter the sub-interface ID.
Switch	The Nexus 9K switch through which the endpoint is connected to the SAE complex
Interface	The Nexus 9K interface through which the endpoint is connected to SAE complex
Additional Peers	Click +next to Additional Peers and enter the endpoint IP address, endpoint ASN and endpoint remote ASN.

**Step 7** (Optional) Click the + sign next to Additional Peers to add peers and enter the requested information:

**Step 8** (Optional) Click **Validate** to verify your inputs.


**Step 9** Click **Save**.

When deployed, you can see the endpoint on the circumference of the circle on the left of the screen. The circle represents the site.



- Note**
- If two or more service chains share the same endpoints, the service chains are not represented by separate lines between the endpoints.
  - You cannot connect an endpoint to itself. In other words, the two ends of a service chain (consumer end and provider end) must have separate endpoints.


## Delete an Endpoint

- Step 1** Click  on the site snapshot to open the Service Deployment view.  
A circular image representing a site and its endpoints is displayed on the left side of the screen.
- Step 2** On the circle, double-click the endpoint that you want to delete.
- Step 3** Next, press the **delete** button on your keyboard or click icon present next to **Edit Endpoint**.  
A pop-up is displayed to confirm whether you want to permanently delete the endpoint.
- Step 4** Click **OK**.

# Add, Edit, Delete Gateways and Chains

## Add Gateway

Gateway services are shared endpoint gateways that are connected to one or more external endpoints.

- Step 1** On the **Site** screen, click  on the site snapshot to open the Service Deployment view.
- Step 2** On the middle pane, click the + sign next to **Gateways** to add the gateway to a tenant.
- Step 3** On the far right pane, **Add Gateway** opens.
- Step 4** Click **Import** to import the existing gateways.
- Step 5** Provide the requested information:

Field	Description
Site Name	Enter a name for the gateway.
Endpoint	Choose one or more endpoints from the drop-down list.
Service Chain Instance Name	Choose the service chain instance name from the drop-down list.
MD5 Naming (Optional)	Check the MD5 naming checkbox, for the service. A unique md5 hash will be generated with the service path and vnf-profile and the length of the character will be 32.

- Step 6** Click the **Next** button, Create Gateway pop-up opens.
- Step 7** To connect the gateway to the components, drag one of the connector to the other component.
- Step 8** Provide the requested information on the right panel for Connectivity.

Field	Description
IP	Enter the IP address for the connectivity.
Virtual IP	Choose the Virtual IP from the dropdown and enter the IP address for the it.
Next HOP Access Point	Enter the name and Subnet size for the next hop gateway to which packet will be forwarded.

- Step 9** Click **Save** button to save the connectivity and move to the next screen.
- Step 10** On the Configuration Parameter screen.
- Step 11** Click + sign enter the **Name** and **Value** for the configuration parameter.
- Step 12** Click **Next** button.
- Step 13** On the **Additional Properties** screen.
- Step 14** (Optional) Provide the requested information:

Field	Description
Bandwidth Requirement (Mbps)	Enter number in Mbps.
Resource Zone	Choose the resource zone from the drop-down list.
Virtual Service Profile	By default the virtual service profile name is displayed.
Custom Name	Enter the custom name for the virtual service profile.

**Step 15** Click **Next** button.

**Step 16** On the **Template** screen.

**Step 17** For the VNF profile, choose either **Custom Template** or **Switch Template**.


**Step 18** (Optional) Click the + sign next to Custom Template to add the custom template from the drop-down list.


**Step 19** (Optional) Click **Validate** to verify your inputs.

**Step 20** Click **Deploy** to deploy the endpoint on the site.

### What to do next


Click  setting icon, next to the existing gateway to **Add Endpoints**, **Delete Endpoints**, **Add sub-interface**, **Delete sub-interface** or **Add tunnel**.

Click  to delete an existing gateway.

Click  to export the individual gateway.

## Add Consumer Half Chain

You can add, export and delete consumer half chain, add endpoints, delete endpoints, add sub-interface, delete sub-interface and add tunnel.

**Step 1** On the **Site** screen, click  on the site snapshot to open the Service Deployment view.

**Step 2** On the middle pane, click the + sign next to **Consumer Half Chains** to add the consumer half chain.

**Step 3** On the right panel, **Add Consumer Half Chains** screen opens

**Step 4** Alternatively, click **Import** to import the existing consumer half chain.

**Step 5** Provide the requested information:

Field	Description
Name	Enter a name for the chain.
(Optional) MD5 Naming	Check the MD5 naming checkbox, for the service. A unique md5 hash will be generated with the service path and vnf-profile and the length of the character will be 32.

Field	Description
(Optional) Endpoint	Choose one or more chain endpoints from the drop-down list.
(Optional) Gateway	Choose the chain gateway from the drop-down list.
Service Chain Instance Name	Choose the chain service chain instance name from the drop-down list.

**Step 6** Click **Next** button, Create Half Chain pop-up screen opens.

**Step 7** The graphical representation of the chain is visible on the middle panel, and on the far right panel, **PNF Profile Details** screen opens.

**Step 8** Choose **PNF Device** from the dropdown list.

**Step 9** Click **Next** button.

**Step 10** (Optional) Click + sign next to the name-value pair and enter the **Name** and **Value** for the configuration parameter.

**Step 11** Click **Next** button.

**Step 12** On the **Additional Properties** screen.

**Step 13** (Optional) Provide the requested information:

Field	Description
Bandwidth Requirement (Mbps)	Enter number in Mbps.
Resource Zone	Choose the resource zone from the drop-down list.

**Step 14** Click **Next** button.

**Step 15** On the **Templates** screen.

**Step 16** For the PNF profile, choose either **Custom Template** or **Switch Template**. By default, **Custom Template** is selected.


**Step 17** (Optional) Click the + sign next to Custom Template/Switch Template and choose the name value from the drop-down list.


**Step 18** (Optional) Click **Validate** to verify your inputs.

**Step 19** Click **Deploy** to deploy the consumer half chain on the site.

### What to do next

Click  next to the existing consumer half chain to **Add Endpoints**, **Delete Endpoints**, **Add sub-interface**, **Delete sub-interface** or **Add tunnels**.

Click  to delete an existing consumer half chain.


Click  to export the individual consumer half chain.

Click tenant link on top left corner to go back to the previous page.



# Add Provider Half Chains

You can add, export and delete provider half chain, add endpoints, delete endpoints, add sub-interface, delete sub-interface and add tunnel.

- Step 1** On the **Site** screen, click  on the site snapshot to open the Service Deployment view.
- Step 2** On the middle pane, click the + sign next to **Provider Half Chains** to add the provider half chain.
- Step 3** On the right panel, **Add Provider Half Chains** screen opens.
- Step 4** Alternatively, click **Import** to import the existing provider half chain.
- Step 5** Provide the requested information:

Field	Description
Name	Enter a name for the chain.
(Optional) MD5 Naming	Check the MD5 naming checkbox, for the service. A unique md5 hash will be generated with the service path and vnf-profile and the length of the character will be 32.
Service Chain Instance Name	Choose service chain instance name for the chain from the drop-down list.
(Optional) Gateway	Choose the chain gateway from the drop-down list.
(Optional) Endpoint	Choose one or more chain endpoints from the drop-down list.

- Step 6** Click **Next** button, Create Half Chain pop-up screen opens.
- Step 7** The graphical representation of the chain is visible on the middle panel, and on the far right panel, **PNF Profile Details** screen opens.
- Step 8** Choose **PNF Device** from the dropdown list.
- Step 9** Click **Next** button.
- Step 10** (Optional) Click + sign next to the name-value pair and enter the **Name** and **Value** for the configuration parameter.
- Step 11** Click **Next** button.
- Step 12** On the **Additional Properties** screen.
- Step 13** (Optional) Provide the requested information:


Field	Description
Bandwidth Requirement (Mbps)	Enter number in Mbps.
Resource Zone	Choose the resource zone from the drop-down list.


- Step 14** Click **Next** button.
- Step 15** On the **Templates** screen.
- Step 16** For the PNF profile, choose either **Custom Template** or **Switch Template**. By default **Custom Template** is selected.

- Step 17** (Optional) Click the + sign next to Custom Template/Switch Template and choose the name value from the drop-down list.
- Step 18** (Optional) Click **Validate** to verify your inputs.
- Step 19** Click **Deploy** to deploy the consumer half chain on the site.

### What to do next

Click  next to the existing provider half chain to **Add Endpoints**, **Delete Endpoints**, **Add sub-interface**, **Delete sub-interface** or **Add tunnels**.


Click  to delete an existing provider half chain.

Click  to export the individual provider half chain.

Click tenant link on top left corner to go back to the previous page.

## Add End to End Chains

Gateway services are shared endpoint gateways that are connected to one or more external endpoints.

- Step 1** On the **Site** screen, click  on the site snapshot to open the Service Deployment view.
- Step 2** On the middle pane, click the + sign next to **Gateways** to add the gateway to a tenant.
- Step 3** On the far right pane, **Add Gateway** opens.
- Step 4** Click **Import** to import the existing gateways.
- Step 5** Provide the requested information:

Field	Description
Name	Enter a name for the chain.
(Optional) MD5 Naming	Check the MD5 naming checkbox, for the service. A unique md5 hash will be generated with the service path and vnf-profile and the length of the character will be 32.
(Optional) Endpoint	Choose one or more chain endpoints from the drop-down list.
(Optional) Gateway	Choose the chain gateway from the drop-down list.
Service Chain Instance Name	Choose the chain service chain instance name from the drop-down list.
(Optional) Gateway	Choose the chain gateway from the drop-down list.
(Optional) Endpoint	Choose one or more chain endpoints from the drop-down list.


- Step 6** Click the **Next** button, Create Full Chain pop-up opens.
- Step 7** The graphical representation of the chain is visible on the middle panel, and on the far right panel, **Configuration Parameter** screen opens.
- Step 8** (Optional) Click + sign next to the name-value pair and enter the **Name** and **Value** for the configuration parameter.
- Step 9** Click **Next** button.
- Step 10** On the **Additional Properties** screen.
- Step 11** (Optional) Provide the requested information:


Field	Description
Bandwidth Requirement (Mbps)	Enter number in Mbps.
Resource Zone	Choose the resource zone from the drop-down list.

- Step 12** Click **Next** button.
- Step 13** On the **Templates** screen.
- Step 14** For the VNF profile, choose either **Custom Template** or **Switch Template**. By default **Custom Template** is selected.
- Step 15** (Optional) Click the + sign next to Custom Template/Switch Template and choose the name value from the drop-down list.
- Step 16** (Optional) Click **Validate** to verify your inputs.
- Step 17** Click **Deploy** to deploy the consumer half chain on the site.

### What to do next

Click  next to the existing consumer half chain to **Add Endpoints**, **Delete Endpoints**, **Add sub-interface**, **Delete sub-interface** or **Add tunnels**.


Click  to delete an existing consumer half chain.

Click  to export the individual consumer half chain.

Click tenant link on top left corner to go back to the previous page.

## Add Connections

Gateway services are shared endpoint gateways that are connected to one or more external endpoints.

- Step 1** On the **Site** screen, click  on the site snapshot to open the Service Deployment view.
- Step 2** On the middle pane, click the + sign next to **Gateways** to add the gateway to a tenant.
- Step 3** On the far right pane, **Add Gateway** opens.
- Step 4** Click **Import** to import the existing gateways.
- Step 5** Provide the requested information:

Field	Description
Site Name	Enter a name for the gateway.
Endpoint	Choose one or more endpoints from the drop-down list.
Service Chain Instance Name	Choose the service chain instance name from the drop-down list.
MD5 Naming (Optional)	Check the MD5 naming checkbox, for the service. A unique md5 hash will be generated with the service path and vnf-profile and the length of the character will be 32.

**Step 6** Click the **Next** button, Create Gateway pop-up opens.

**Step 7** To connect the gateway to the components, drag one of the connector to the other component.

**Step 8** Provide the requested information on the right panel for Connectivity:

Field	Description
IP	Enter the IP address for the connectivity.
Virtual IP	Choose the Virtual IP from the dropdown and enter the IP address for it.
Next HOP Access Point	Enter the name and subnet size for the next hop gateway to which packet will be forwarded.

**Step 9** Click **Save** button to save the connectivity and move to the next screen.

**Step 10** On the Configuration Parameter screen.

**Step 11** Click + sign, enter the **Name** and **Value** for the configuration parameter.

**Step 12** Click **Next** button.

**Step 13** On the **Additional Properties** screen.

**Step 14** (Optional) Provide the requested information:

Field	Description
Bandwidth Requirement (Mbps)	Enter number in Mbps.
Resource Zone	Choose the resource zone from the dropdown list.
Virtual Service Profile	By default the virtual service profile name is displayed.
Custom Name	Enter the custom name for the virtual service profile.

**Step 15** Click **Next** button.

**Step 16** On the **Template** screen.

**Step 17** For the VNF profile, choose either **Custom Template** or **Switch Template**.

**Step 18** (Optional) Click the + sign next to Custom Template to add the custom template from the dropdown list.

**Step 19** (Optional) Click **Validate** to verify your inputs.

**Step 20** Click **Deploy** to deploy the endpoint on the site.

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## Deploy Services

The Site area displays all the sites on which you can deploy services. If no sites are displayed, see the [Create Site](#) topic to learn how to create a new site.

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- Step 1** To deploy a service for a tenant displayed on the Site area, click the Service Deployment icon on the tenant. A list of all the gateways and service chains that are already deployed for the tenant are displayed along with their statuses.
- Step 2** Depending on the type of service chain (consumer half chain, provider half chain, end-to-end chains, gateway and so on) you want to deploy, click + next to respective section and provide the requested information in the menu that appears on the right of the screen.
- Name:** Enter a name for the service chain.
  - Service Chain Instance Name:** Choose a service chain instance from the drop-down list.
  - Gateway:** This step is optional and only required if you are deploying two half chains by stitching them together into a single one. From the drop-down list, choose a gateway to connect the consumer side of the service chain to the provider side. The drop-down list shows all the gateways that are created for a particular site.
  - Endpoint:** From the drop-down list, choose an endpoint. For end-to-end chains, you need to provide both consumer-side and a provider-side endpoints.
- Alternatively, click **Import** at the top of the menu on the right and import consumer half chains, provider half chains, end-to-end chains, or gateways as applicable.
- Step 3** Click **Next**.  
Based on the endpoint services and service chain configuration you select, a graphical representation of the service chain is displayed.
- Step 4** Provide the requested information under the Connectivity menu on the right and click **Next**.
- Step 5** Add Configuration Parameters as applicable and click **Next**.
- Step 6** In the Additional Properties menu, enter the requested details.
- Bandwidth Requirements:** Specify bandwidth requirements in Mbps.
  - Resource Zone:** Select a resource zone from the drop-down list.
  - Virtual Service Profile / Physical Service Profile:** This is autopopulated based on your previous selections.
  - Custom Template:** From the drop-down list, select a custom template to apply. The drop-down list shows templates that you upload to NSO.
- Step 7** Next, click **Next** at the bottom of the Connectivity menu to advance to the next menu and click < to go back to the previous menu. You can add variables and additional properties for the services and the service chain on these menus.
- Step 8** (Optional) Click **Validate** to verify your inputs.
- Step 9** Click **Deploy** to deploy the service chain.
- 

If the service chain is deployed successfully, a checkmark displays next to the chain. If the deployment fails, a warning sign displays next to the chain.

STITCHING CHAINS		+
STICH-PROVIDER-GW	Unsuccessful	
TEST-STICH-20	Successful	

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