



Cisco ACI Optimizer

[New and Changed Information](#) 2

New and Changed Information

The following table provides an overview of the significant changes to this article up to this current release.

Table 1: New Features and Changed Behavior in Cisco APIC ACI Optimizer

Cisco APIC Release Version	New Feature	Description
3.2(1)	Added the following options in the Create Optimizer Config Template page: <ul style="list-style-type: none"> • Policy TCAM (percentage) • LPM Table (percentage) • EP Table (percentage) • VLAN Table (percentage) • VLAN XLATE Table (percentage) • Placement Algorithm 	New procedures and descriptions added to Creating an Optimizer Template section in this document.
2.3(1e)	Added the following options: <ul style="list-style-type: none"> • Template Topology—Switches from the optimizer config template are considered for a new config deployment. • Existing Topology—Switches from the ACI fabric are considered for deployment. • Existing and Template Topology—Switches from the ACI fabric and the optimizer config template are considered for deployment. 	Determining How to Deploy Your Optimizer Config Template, on page 18
2.3(1e)	Added deployment filters, which enable you to choose the leaf switches from the ACI fabric that you want to include for deployment.	Creating Deployment Filters for Existing Topologies, on page 16

Cisco APIC Release Version	New Feature	Description
Release 1.3(1i)	Added the following components: <ul style="list-style-type: none"> • Baremetal Domain • Microsoft Azure Domain • VMWare Domain 	New drag and drop icons for the optimizer config template that represent Microsoft Azure, baremetal, and VMWare domains. For more information, see the following sections: <ul style="list-style-type: none"> • Adding and Configuring Microsoft Azure Domains, on page 11 • Adding and Configuring Baremetal Domains, on page 11 • Adding and Configuring VMware Domains, on page 12
Release 1.1(2h)	--	This article was released.

Overview

The ACI Optimizer feature in the Cisco Application Policy Infrastructure Controller (APIC) GUI provides two operations:

- After entering your network requirements in an optimizer config template, the ACI Optimizer tells you how many leaf switches you will need for your network and suggests how to deploy each application and external EPG on each leaf switch without violating any constraints.
- After entering your existing topology in an optimizer config template, the ACI Optimizer helps you determine if you have what you need, if you are exceeding any limitations, and suggests how to deploy each application and external EPG on each leaf switch. Note that scale constraints may be violated if the given topology is not enough.

The ACI Optimizer feature is located in the **Operations** tab of the GUI. You enter your network requirements and topology information by dragging icons that represent your network components down to the configuration pane where the default **Tenant common** icon is located. When a component is added, a component-specific dialog appears with properties that need to be set.

This article explains how to do the following:

- Create an optimizer config template.
- Plan your network by entering your network requirements in the optimizer config template to find the number of leaf switches needed.
- Enter your existing topology in the optimizer config template with your network requirements and determine if you are exceeding any limitations.

Creating an Optimizer Config Template

This section explains how to create an optimizer config template. Use this template to enforce a resource cap on the leaf switch resources. For example, if you were to choose a cap of **80** for the Policy TCAM resource, that means that only 80% of Policy TCAM would be utilized on all the leaf switches.

The following selections are optional on the Create Optimizer Config Template page, and you can select between 0 to 100% for each:

- Policy TCAM (percentage)
- LPM Table (percentage)
- EP Table (percentage)
- VLAN Table (percentage)
- VLAN XLATE Table (percentage)

Where 100% is the default for each selection. You can leave all fields at the default selection (100%) or you can mix-and-match percentages across all five selections (for example, 20% for Policy TCAM, 50% for LPM Table, and the default 100% for the remaining three selections).

For the Placement Algorithm selection, the default is Uniform Resource Utilization.

Before you begin

You must have access to the Cisco APIC GUI.

Procedure

- Step 1** From the menu bar, choose **Operations > ACI Optimizer**.
The **Optimizer Config Templates** window appears.
- Step 2** From the navigation pane, right-click on **Optimizer Config Templates** and choose **Create Optimizer Config Template**.
The **Create Optimizer Config Template** dialog appears.
- Step 3** In the **Name** field, enter a name for the template.
- Step 4** In the **Policy TCAM (percentage)** field, select a percentage value for this option, if necessary.
This sets the percentage of the policy ternary content-addressable memory (TCAM) resource cap, which contains entries for the allowed endpoint-group-to-endpoint-group traffic.
- Step 5** In the **LPM Table (percentage)** field, select a percentage value for this option, if necessary.
This sets the percentage of the longest prefix match (LPM) table resource cap, also called the routing table.
- Step 6** In the **EP Table (percentage)** field, select a percentage value for this option, if necessary.
This sets the percentage of the End Point (EP) table resource cap.
- Step 7** In the **VLAN Table (percentage)** field, select a percentage value for this option, if necessary.
This sets the percentage of the virtual local area network (VLAN) table resource cap.
- Step 8** In the **VLAN XLATE Table (percentage)** field, select a percentage value for this option, if necessary.
This sets the percentage of the VLAN VXLAT table resource cap, which is a table used for tag translation of the VLANs.
- Step 9** In the **Placement Algorithm** field, select a placement algorithm, which enables you to decide how each EPG is placed in the topology. Options:
- **Maximize Per Leaf Utilization:** EPGs are placed in one leaf switch until all the resources are utilized to the maximum. If the resource limit or cap is reached in the leaf switch, then the next leaf switch is considered for placement.

- Uniform Epg Distribution: EPGs are placed evenly across all the leaf switches, regardless of the resources consumed by each EPG.
- Uniform Resource Utilization (default): EPGs are placed so that the resources in all the leaf switches are uniformly utilized.

Step 10 Click **Submit**.

The name of your template appears in the table located in the **Optimizer Config Templates** window. Double-click the template name when you are ready to enter your network requirements.

What to do next

You can now open your template by double-clicking on the template name in the **Optimizer Config Templates** window. This opens the **Config** tab where you can add and configure EPGs, tenants, contracts, L2Outs, L3Outs, and domains such as Baremetal, Microsoft Azure, and VMWare (domains were added in Release 1.3(1i)). Entering this information enables you to determine how many leaf switches are needed for your network and to view the suggested deployment. After entering your network requirements, you can click the **Topology** tab to enter your existing topology and click the **Deployment** tab to determine if your utilization is within the limitations.

Entering Your Network Requirements

This section describes how to enter your network requirements in an optimizer config template to determine the required number of leaf switches and suggested deployment. To enter your requirements, the ACI Optimizer has eight different drag and drop icons that represent eight different network components: tenants, EPGs, contracts, L2Outs, L3Outs, Baremetal domains, Microsoft Azure domains, and VMWare domains (domains were added in Release 1.3(1i)). Each component has several properties that need to be set. When you have finished entering your network requirements, you can do the following:

- View the suggested number of leaf switches needed for your network by clicking the **Deployment** tab
- View the suggested deployment for each leaf switch by choosing specific leaf switches listed in the **Deployment** tab
- Determine your resource utilization after entering your topology in the **Topology** tab

Adding and Configuring Tenant Templates in Your Optimizer Config Template

This section explains how to add tenant templates to your optimizer config template.



Note The **Common Tenant** icon appears in the configuration pane by default.

Before you begin

- An optimizer config template has been created.
- The **Config** tab in the **Optimizer Config Template** window is open.



Note For information on opening the **Config** tab, see *What to do Next* in [Creating an Optimizer Config Template](#).

Procedure

- Step 1** Drag the **Tenant** icon to the configuration pane.
The **Create Optimizer Tenant Template** dialog box appears.
- Step 2** Enter the appropriate values in each field of the **Create Optimizer Tenant Template** dialog box.
- Note** For an explanation of a field, click the help icon in the top-right corner of the **Create Optimizer Tenant Template** dialog box to display the help file.
- Step 3** Click **Submit**.
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Adding and Configuring an EPG in Your Optimizer Config Template

This section explains how to add EPGs to your optimizer config template.

Before you begin

- The optimizer config template has been created.
- The **Config** tab in the **Optimizer Config Template** window is open.



Note For information on opening the **Config** tab, see *What to do Next* in [Creating an Optimizer Config Template](#).

Procedure

- Step 1** Drag the **EPG** icon down to the configuration pane until the **EPG** icon is placed within the permitted range of a **Tenant** icon. When the **EPG** icon is within range, a green line appears to create an association. If an association cannot be made, the icon will disappear.
The **Create EPG Template** dialog box appears.
- Step 2** Enter the appropriate values in each field of the **Create EPG Template** dialog box.
- Note**
- For an explanation of a field, click the help icon in the top-right corner of the **Create EPG Template** dialog box to display the help file.
 - The EPG template requires a bridge domain (BD). To add a BD to the template, click the **Bridge Domain** drop-down arrow to choose an existing BD or create a BD template.

To create a BD template:

- a) From the **Bridge Domain** drop-down list, choose **Create BD Template**.
The **Create BD Template** dialog box appears.
- b) Enter the appropriate values in each field of the **Create BD Template** dialog.

- Note**
- For an explanation of a field, click the help icon in the top-right corner of the **Create BD Template** dialog to display the help file.
 - When creating a BD, you must click the **VRF** drop-down arrow to choose an existing VRF or create a template.

To create a VRF template:

1. From the **VRF** drop-down list, choose **Create VRF Template**. The **Create VRF Template** dialog box appears.
2. Enter the appropriate values in each field of the **Create VRF Template** dialog box.

Note For an explanation of a field, click the help icon in the top-right corner of the **Create VRF Template** dialog to display the help file.

3. Click **Submit**. You are back at the **Create BD Template** dialog box.

- c) After entering the appropriate values in each field of the **Create BD Template** dialog box, click **Submit**. You are back at the **Create EPG Template** dialog box.

Step 3 After entering the appropriate values in each field of the **Create EPG Template** dialog box, click **Submit**.

Note To edit your EPG configuration, double-click on the **EPG** icon.

Adding and Configuring an L2Out in Your Optimizer Config Template

This section explains how to add an L2Out to your optimizer config template.

Before you begin

- An optimizer config template has been created.
- The **Config** tab in the **Optimizer Config Template** window is open.



Note For information on opening the **Config** tab, see *What to do Next* in [Creating an Optimizer Config Template](#).

Procedure

Step 1 Drag the **L2Out** icon down to the configuration pane until the icon is within the permitted range of a **Tenant** icon. When the icon is within range, a green line appears to create an association. If an association cannot be made, the icon will disappear.

The **Create L2Out Template** dialog box appears.

Step 2 Enter the appropriate values in each field of the **Create L2Out Template** dialog box.

- Note**
- For an explanation of a field, click the help icon in the top-right corner of the **Create L2Out Template** dialog box to display the help file.
 - The L2Out template requires a bridge domain (BD). To add a BD to the template, click the **Bridge Domain** drop-down arrow to choose an existing BD or create a BD template.

To create a BD template:

- a) From the **Bridge Domain** drop-down list, choose **Create BD Template**. The **Create BD Template** dialog box appears.
- b) Enter the appropriate values in each field of the **Create BD Template** dialog.

- Note**
- For an explanation of a field, click the help icon in the top-right corner of the **Create BD Template** dialog to display the help file.
 - When creating a BD, you must click the **VRF** drop-down arrow to choose an existing VRF or create a template.

To create a VRF template:

1. From the **VRF** drop-down list, choose **Create VRF Template**. The **Create VRF Template** dialog box appears.
2. Enter the appropriate values in each field of the **Create VRF Template** dialog box.

- Note** For an explanation of a field, click the help icon in the top-right corner of the **Create VRF Template** dialog to display the help file.

3. Click **Submit**. You are back at the **Create BD Template** dialog box.

- c) After entering the appropriate values in each field of the **Create BD Template** dialog box, click **Submit**. You are back at the **Create L2Out Template** dialog box.

Step 3 After entering the appropriate values in each field of the **Create L2Out Template** dialog box, click **Submit**.

- Note** To edit your L2Out configuration, double-click on the **L2Out** icon.

Adding and Configuring an L3Out in Your Optimizer Config Template

This section explains how to add an L3Out to your optimizer config template.

Before you begin

- An optimizer config template has been created.
- The **Config** tab in the **Optimizer Config Template** window is open.



Note For information on opening the **Config** tab, see *What to do Next* in [Creating an Optimizer Config Template](#).

Procedure

Step 1 Drag the **L3Out** icon down to the configuration pane until the icon is within the permitted range of a **Tenant** icon. When an icon is within range, a green line appears to create an association. If an association cannot be made, the icon will disappear.

The **Create L3Out Template** dialog box appears.

Step 2 Enter the appropriate values in each field of the **Create L3Out Template** dialog box.

- Note**
- For an explanation of a field, click the help icon in the top-right corner of the **Create L3Out Template** dialog to display the help file.
 - The L3Out template requires a VRF. To add a VRF, click the **VRF** drop-down arrow to choose an existing VRF or to create a template.

To create a VRF template:

- a) From the **VRF** drop-down list, choose **Create VRF Template**.
The **Create VRF Template** dialog box appears.
- b) Enter the appropriate values in each field of the **Create VRF Template** dialog box.

Note For an explanation of a field, click the help icon in the top-right corner of the **Create VRF Template** dialog to display the help file.

- c) Click **Submit**.
You are back at the **Create L3Out Template** dialog box.

Step 3 After entering the appropriate values in each field of the **Create L3Out Template** dialog box, click **Submit**.

Note To edit your L3Out configuration, double-click on the **L3Out** icon.

Adding and Configuring Contracts in Your Optimizer Config Template

A contract can be created between any combination of EPGs, L2Outs, and L3Outs. This section explains how to add Contracts to your optimizer config template.

Before you begin

- An optimizer config template has been created.
- The **Config** tab in the **Optimizer Config Template** window is open.



Note For information on opening the **Config** tab, see *What to do Next* in [Creating an Optimizer Config Template](#).

- At least two components (an EPG, L2Out, or L3Out) of any combination have been entered in the optimizer config template.

Procedure

Step 1 Drag the **Contract** icon down to the configuration pane until the icon is within the range of the provider, which can be an **EPG**, **L2Out**, or **L3Out** icon. When an icon is within range, a green line appears to create an association and a second green line appears with a green arrow.

Note If an association cannot be made, the icon will disappear.

Step 2 Drag the green arrow until it is within the range of the consumer, which can be an **EPG**, **L2Out**, or **L3Out** icon. The **Create Contract Template** dialog box appears.

Step 3 Enter the appropriate values in each field of the **Create Contract Template** dialog box.

Note

- For the explanation of a field, click the help icon in the top-right corner of the **Create Contract Template** dialog box to display the help file.

- The contract template enables you to add an L4-L7 service graph. To add an L4-L7 service graph, click the **L4-L7 Service Graph Template** drop-down arrow and choose an existing L4-L7 service graph or create a template.

To create a new L4-L7 service graph template:

- a) From the **L4-L7 Service Graph Template** drop-down list, choose **Create L4-L7 Service Graph Template**. The **Create L4-L7 Service Graph Template** dialog box appears.
- b) In the **Create L4-L7 Service Graph Template** dialog box, enter a name for the L4-L7 service graph template in the **Name** field then click the + (plus symbol) for the **L4-L7 Services** table. The **Create L4-L7 Service** dialog box appears.
- c) Enter the appropriate values in each field of the **Create L4-L7 Service** dialog box.

Note

- For the explanation of a field, click the help icon in the top-right corner of the **Create L4-L7 Service** dialog box to display the help file.

- Creating an L4-L7 service requires an L4-L7 service device template. Clicking the **L4-L7 Service Device Template** drop-down menu will display existing templates, if any, and an option to create a new template.

To create an L4-L7 service device template:

1. From the **L4-L7 Service Device Template** drop-down, choose **Create L4-L7 Service Device Template**. The **Create L4-L7 Service Device Template** dialog box appears.
2. Enter the appropriate values in each field of the **Create L4-L7 Service Device Template** dialog box.

Note For the explanation of a field, click the help icon in the top-right corner of the **Create L4-L7 Service Device Template** dialog box to display the help file.

3. Click **Submit**. You are now back at the **Create L4-L7 Service** dialog box.

d) After entering the appropriate values in each field of the **Create L4-L7 Service** dialog box, click **Ok**. You are now back at the **Create L4-L7 Service Graph Template** dialog box.

e) After entering the appropriate values in each field of the **Create L4-L7 Service Graph Template** dialog box, click **Submit**.

You are now back at the **Create Contract Template** dialog box.

Step 4 After entering the appropriate values in each field of the **Create Contract Template** dialog box, click **Submit**.

Note To edit your contract information and to view the provider and consumer information, double-click on the **Contract** icon.

Adding and Configuring Microsoft Azure Domains

ACI fabric virtual machine manager (VMM) domains enable an administrator to configure connectivity policies for virtual machine controllers. The **Microsoft Azure (System Center) Domain** icon enables you to specify Microsoft Azure as the VMM domain type. Microsoft Azure (System Center) domains were added to the ACI Optimizer in Cisco APIC Release 1.3(1i).

Before you begin

- An optimizer config template has been created.
- The **Config** tab in the **Optimizer Config Template** window is open.



Note For information on opening the **Config** tab, see *What to do Next* in [Creating an Optimizer Config Template](#).

- At least one EPG has been entered in the optimizer config template.

Procedure

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- Step 1** Drag the **Microsoft Azure (System Center) Domain** icon down to the configuration pane until the icon is within the range of an **EPG** icon. When within range, a green line appears to create an association. The **Create Azure Domain** dialog box appears.
- Note** If an association cannot be made with an **EPG** icon, the **Microsoft Azure (System Center) Domain** icon will disappear.
- Step 2** Enter the appropriate values in each field of the **Create Azure Domain** dialog box.
- Note** For the explanation of a field, click the help icon in the top-right corner of the **Create Azure Domain** dialog box to display the help file.
- Step 3** After entering the appropriate values in each field of the **Create Azure Domain** dialog, click **Submit**.
- Note** To edit your domain configuration, double-click on the **Microsoft Azure (System Center) Domain** icon.
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Adding and Configuring Baremetal Domains

The **Baremetal Domain** icons enable you to specify a physical domain. Baremetal domains were added to the ACI Optimizer in Cisco APIC Release 1.3(1i).

Before you begin

- An optimizer config template has been created.
- The **Config** tab in the **Optimizer Config Template** window is open.



Note For information on opening the **Config** tab, see *What to do Next* in [Creating an Optimizer Config Template](#).

- At least one EPG has been entered in the optimizer config template.

Procedure

Step 1 Drag the **Baremetal Domain** icon down to the configuration pane until the icon is within the range of an **EPG** icon. When within range, a green line appears to create an association. The **Create Phys Domain** dialog appears.

Note If an association cannot be made with an **EPG** icon, the **Baremetal Domain** icon will disappear.

Step 2 Enter the appropriate values in each field.

Note For the explanation of a field, click the help icon in the top-right corner of the **Create Phys Domain** dialog box to display the help file.

Step 3 After entering the appropriate values in each field of the **Create Phys Domain** dialog, click **Submit**.

Note To edit your domain configuration, double-click on the **Baremetal Domain** icon.

Adding and Configuring VMware Domains

ACI fabric virtual machine manager (VMM) domains enable an administrator to configure connectivity policies for virtual machine controllers. The **VMware Domain** icon enables you to specify VMware as the VMM domain type. VMware domains were added to the ACI Optimizer in Cisco APIC Release 1.3(1i).

Before you begin

- An Optimizer Config Template has been created.
- The **Config** tab in the **Optimizer Config Template** window is open.



Note For information on opening the **Config** tab, see *What to do Next* in [Creating an Optimizer Config Template](#).

- At least one EPG has been entered in the Optimizer Config Template.

Procedure

Step 1 Drag the **VMware Domain** icon down to the configuration pane until the icon is within the range of an **EPG** icon. When within range, a green line appears to create an association. The **Create VMware Domain** dialog appears.

Note If an association cannot be made with an **EPG** icon, the **VMware Domain** icon will disappear.

Step 2 Enter the appropriate values in each field.

Note For an explanation of a field, click the help icon in the top-right corner of the **Create VMware Domain** dialog box to display the help file.

Step 3 After entering the appropriate values in each field of the **Create VMware Domain** dialog, click **Submit**.

Note To edit your domain configuration, double-click on the **VMware Domain** icon.

Entering Your Topology Information

This section describes how to enter your existing topology in an optimizer config template to determine if you have everything you need and if you are exceeding any limitations. To specify your topology, the ACI Optimizer has three different drag and drop icons that represent three different network components: spine switches, leaf switches, and FEXes. Each component has several properties that need to be set. When you have entered your topology and network requirements, you can view the resource utilization by clicking the **Deployment** tab.

Adding and Configuring a Spine Switch in Your Optimizer Config Template

This section explains how to add a spine switch to your optimizer config template.

Before you begin

- The optimizer config template has been created.
- The **Topology** tab in the **Optimizer Config Template** window is open.



Note For information on opening the **Topology** tab, see *What to do Next* in [Creating an Optimizer Config Template](#).

Procedure

Step 1 Drag the **Spine** icon down to the configuration pane. The **Create Spine** dialog box appears.

Step 2 Enter the appropriate values in each field of the **Create Spine** dialog box.

Note For an explanation of a field, click the help icon in the top-right corner of the **Create Spine** dialog box to display the help file.

Step 3 Click **Submit**.

Note To edit your spine switch configuration, double-click on the **Spine** icon.

Adding and Configuring a Leaf Switch in Your Optimizer Config Template

This section explains how to add a leaf switch to your optimizer config template.

Before you begin

- The optimizer config template has been created.
- The **Topology** tab in the **Optimizer Config Template** window is open.



Note For information on opening the **Topology** tab, see *What to do Next* in [Creating an Optimizer Config Template](#).

- At least one spine switch has been added and configured in the optimizer config template.

Procedure

Step 1 Drag the **Leaf** icon down to the configuration pane until the icon is within the range of a **Spine** icon. When within range, a green line appears to create an association. The **Create Leaf** dialog box appears.

Note If an association cannot be made with a **Spine** icon, the **Leaf** icon will disappear.

Step 2 Enter the appropriate values in each field of the **Create Leaf** dialog box.

Note For an explanation of a field, click the help icon in the top-right corner of the **Create Leaf** dialog box to display the help file.

Step 3 Click **Submit**.

To edit your leaf switch configuration, double-click on the **Leaf** icon.

Adding and Configuring a FEX in Your Optimizer Config Template

This section explains how to add a FEX to your optimizer config template.

Before you begin

- The optimizer config template has been created.
- The **Topology** tab in the **Optimizer Config Template** window is open.



Note For information on opening the **Topology** tab, see *What to do Next* in [Creating an Optimizer Config Template](#).

- At least one spine switch and leaf switch has been added and configured in the optimizer config template.

Procedure

Step 1 Drag the **FEX** icon down to the configuration pane until the icon is within the range of a **Leaf** icon. When within range, a green line appears to create an association.

The **Create FEX** dialog box appears.

Note If an association cannot be made with a **Leaf** icon, the **FEX** icon will disappear.

Step 2 Enter the appropriate values in each field of the **Create FEX** dialog box.

Note For an explanation of a field, click the help icon in the top-right corner of the **Create FEX** dialog box to display the help file.

Step 3 Click **Submit**.

Note Double-click on the **FEX** icon to edit your information.

Creating Labels

Labels enable you to assign EPGs, L2Outs, and L3Outs to specific leaf switches in your topology. This helps you to adjust the resource utilization on your leaf switches.



Note While labels enable you to specify the leaf switches that a component (EPG, L2Out, or L3Out) is deployed on, the **# of Leaf Switches <ComponentName> Deployed on** field in the template of each component enables you to specify the number of leaf switches required for deploying the component.

Before you begin

- The optimizer config template has been created.
- The network requirements have been added.
- The **Config** tab is open.



Note For information on opening the **Config** tab, see *What to do Next* in [Creating an Optimizer Config Template](#).

Procedure

Step 1 Double-click on a component (**EPG**, **L2Out**, or **L3Out**).
The template dialog box appears.

Step 2 From the **Label** field drop-down list, choose **Create Label**.
The **Create Label** dialog box appears.

Step 3 Enter a label name in the **Name** field and then click **Submit**.
A new label is created.

Assigning Labels to Leaf Switches

EPGs, L2Outs, and L3Outs are assigned to leaf switches using labels. Adding or removing your network requirements to specific leaf switches helps to adjust the resource utilization of your leaf switches.

Before you begin

- The optimizer config template has been created.
- The network requirements have been added.
- The topology has been specified.
- One or more labels have been created.
- The **Topology** tab is open.



Note For information on opening the **Topology** tab, see *What to do Next* in [Creating an Optimizer Config Template](#).

Procedure

- Step 1** Double-click on a **leaf** component.
The **Edit Optimizer Leaf Template** dialog box appears with a **Labels** table. The **Labels** table contains a list of labels and check boxes.
- Step 2** Check the check box associated with the label you want to assign to the chosen leaf switch, or uncheck the check box for the label you want to remove from a leaf switch.
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Creating Deployment Filters for Existing Topologies

A deployment filter enables you to choose the leaf switches from the ACI fabric that you want to include for deployment. You choose the leaf switches by applying a deployment filter that uses one or more affinity groups to an existing topology. The chosen leaf switches are associated with a preference number and can be from the current ACI fabric or from a snapshot of the ACI fabric. This section explains how to create a deployment filter for an existing topology.

Before you begin

You must have access to the APIC GUI.

Procedure

- Step 1** From the menu bar, choose **Operations > ACI Optimizer**.
The **Optimizer Config Templates** window appears in the work pane.
- Step 2** From the navigation pane, right-click **Deployment Filters for Existing Topologies** and choose **Create Deployment Filters for Existing Topologies**.
The **Create Deployment Filters for Existing Topology** window appears in the work pane.
- Step 3** Enter the appropriate values in each field of the **Create Deployment Filters for Existing Topology** dialog.

Note For the explanation of a field or option in a dialog, click the help icon in the top-right corner of the dialog box to display the help file.

Step 4 To add an affinity group to the deployment filter, click the +.
The **Create Affinity Group** dialog appears.

Step 5 Enter a preference (priority) number in the **Preference** field. This number is applied to the leaf switches associated with the specified matching rules.

Step 6 To specify the matching rules for a domain, tenant, or a specific switch, click the respective +.
A dialog specific to the chosen matching rules option appears.

Step 7 Enter the appropriate information in the dialog then click **Ok**.

Note For the explanation of a field or option in a dialog, click the help icon in the top-right corner of the dialog box to display the help file.

You return to the **Create Affinity Group** dialog.

Note You can add multiple matching rules and affinity groups.

Step 8 When finished entering affinity groups, click **Ok**.
You return to the **Create Deployment Filters for Existing Topology** dialog.

Step 9 Specify a preference value for nodes that are not included in an affinity group:

- **Match Any Node**—When checked (default), nodes that do not have an assigned priority are given the value of the **Match Any Preference**.
- **Match Any Preference**—Preference value for the nodes that are not assigned a priority value in an affinity group. Use the arrow to select the appropriate number.

Step 10 When finished with specifying the deployment filter, click **Submit**.

What to do next

You can now open your deployment filter by double-clicking on the deployment filter name in the **Deployment Filters for Existing Topologies** window. This displays the deployment filter properties and enables you to edit the deployment filter.

Deleting Components From an Optimizer Config Template

This section explains how to delete components from the optimizer config template.

Before you begin

- The optimizer config template has been created.
- The network requirements and/or topology has been entered in the optimizer config template.
- You have opened your optimizer config template.



Note For information on opening your optimizer config template, see *What to do Next* in [Creating an Optimizer Config Template](#).

Procedure

- Step 1** The components you want to remove determines the tab you need to open:
- To remove your network components, such as tenants, EPGs, contracts, L2Outs, L3Outs, and domains, click the **Config** tab.
 - To remove your topology components, such as spine switches, leaf switches, and FEXes, click the **Topology** tab.
- Step 2** Right-click on the **icon** you want to remove.
A pop-up menu appears with two options: **Edit Node** and **Delete Node**.
- Step 3** Click **Delete Node**.
-

Determining How to Deploy Your Optimizer Config Template

This section explains how to view the suggested deployment for your leaf switches. The suggested deployment is calculated to not violate any constraints.

Before you begin

- The optimizer config template has been created.
- Network components have been added.
- New switches are added to the optimizer config template.
- The optimizer config template is open.



Note For information about opening the Optimizer Config Template, see *What to do Next* in [Creating an Optimizer Config Template](#).

Procedure

- Step 1** Click the **Deployment** tab.
- Step 2** Choose one of the following **Topology** options:
- **Template Topology**—Switches from the optimizer config template are considered for a new config deployment.
 - **Existing Topology**—Switches from the ACI fabric are considered for deployment.
 - **Existing and Template Topology**—Switches from the ACI fabric and the optimizer config template are considered for deployment.
- Step 3** (Optional and only for the **Existing Topology** and **Existing and Template Topology** options) Click the **Deployment Filters for Existing Topologies** drop-down arrow to choose a deployment filter or to create a new one. For information on creating a deployment filter, see [Creating Deployment Filters for Existing Topologies, on page 16](#)

Step 4 (Only for the **Existing Topology** and **Existing and Template Topology** options) Choose one of the following **Snapshot** options:

- To create a new snapshot, choose the **Create a new snapshot for this run** option and enter a name in the **New Snapshot name** field.
- To use an existing snapshot, choose the **Use existing snapshot** option then click the **Existing Snapshots** drop-down arrow to choose a snapshot.
- To not use a snapshot, choose **Don't use**.

Step 5 Click **Submit**.

The **Summary of Resource Usage** and **Resource Utilization** tables become populated.

Step 6 Double-click on a **leaf switch** listed in the **Leaf Switch** column.

A dialog box appears with two tabs: The **Deployed Objects** tab and the **Complete Resource Utilization** tab. In the **Complete Resource Utilization** tab, a resource is shown in red if it exceeds the maximum limit for that resource. The **Deployed Objects** tab contains a table that provides a suggestion for deploying EPGs/L3Outs/L2Outs of optimizer config template on that leaf switch. The suggested deployment is listed across two columns: **Resource** and **Count**. The **Resource** column displays the suggested number of EPGs, L2Outs, and/or L3Outs to deploy on the chosen leaf switch. The **Count** column contains the suggested number of each component to deploy on the chosen leaf switch.

- Note**
- After choosing a specific leaf switch, click the **Complete Resource Utilization** tab for more information about the resource utilization on the chosen leaf switch.
 - When issues are present, the **Issues** link appears in the **Summary of Resource Usage** pane. Click the link to view any detected problems.
 - For an explanation of each column heading in the **Resource Utilization** table, click the help icon to display the help file.
-

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