Selecting a Layer 4 to Layer 7 Device to Render a Graph

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About Device Selection Policies

A device can be selected based on a contract name, a graph name, or the function node name inside the graph. After you create a device, you can create a device context, which provides a selection criteria policy for a device.

A device selection policy (also known as a device context) specifies the policy for selecting a device for a service graph template. This allows an administrator to have multiple device and then be able to use them for different service graph templates. For example, an administrator can have a device that has high-performance ADC appliances and another device that has lower-performance ADC appliances. Using two different device selection policies, one for the high-performance ADC device and the other for the low-performance ADC device, the administrator can select the high-performance ADC device for the applications that require higher performance and select the low-performance ADC devices for the applications that require lower performance.

Creating a Device Selection Policy Using the GUI

If you did not use the **Apply L4-L7 Service Graph Template To EPGs** wizard to apply the service graph template, you might need to configure a device selection policy (also known as a logical device context). The device selection policy instructs Cisco Application Centric Infrastructure (ACI) about which firewall or load balancer device to use to render a graph.

If you used the **Apply L4-L7 Service Graph Template To EPGs** wizard to apply the service graph template, then a device selection policy was configured automatically and you do not need to configure one manually.

The context name in device selection policy needs to be configured if the device cluster interface is used for intra-vrf and inter-vrf contract. The context name shall be identical for the same device shared by different deployed graph instances.

For example, when you have contract1 that is for intra-vrf and contract2 that is for inter-vrf traffic, if both the contracts have service graph, and you use same device cluster interface, you should configure same context name in device selection policy.

Note When using the NX-OS-style CLI, the device selection policy is configured automatically; there are no equivalent NX-OS-style CLI commands.

If you add copy devices to a service graph template that is already deployed, you must create a device selection policy to use for copy services.

Procedure

Step 1 On the menu bar, choose **Tenants** > **All Tenants**.

Step 2 In the Work pane, double click the tenant's name.

Step 3 In the Navigation pane, choose **Tenant** *tenant_name* > **Services** > **L4-L7** > **Devices Selection Policies**.

Step 4 In the Work pane, choose **Actions** > **Create Logical Device Context**.

Step 5 In the **Create Logical Device Context** dialog box, fill in the fields as required, except as specified below:

a) In the **Contract Name** drop-down list, choose the contract for the device selection policy. If you do not want to use the contract name as part of the criteria for using a device, choose **any**.

b) In the **Graph Name** drop-down list, choose the graph for the device selection policy. If you do not want to use the graph name as part of the criteria for using a device, choose **any**.

c) In the **Node Name** drop-down list, choose the node for the device selection policy. If you do not want to use the node name as part of the criteria for using a device, choose **any**.

Step 6 In the **Cluster Interface Contexts** section, click **+** to add a cluster interface context.

Property	Description
Connector Name	The connector name or label for the logical interface context. The default is **Any**.
Logical Interface	The logical interface identifier.
Bridge Domain	The private Layer 2 bridge domain consisting of a set of physical or virtual ports. For a copy device, do not choose a bridge domain; the bridge domain is created internally.
L3 Network	The Layer 3 context name. For a copy device, do not choose a Layer 3 network.
L4-L7 Policy based Routing	The policy-based redirect policy to use with logical device context. For a copy device, do not choose a policy-based redirect policy.
Permit Logging	The permit logging status for the interface context. The default is **false**.

Step 7 In the **Create A Cluster Interface Context** dialog, configure the following properties:

Property	Description
Connector Name	The connector name or label for the logical interface context. The default is **Any**.

Property	Description
Cluster Interface	The unique name of the target interface. **Note** This field is required.
Bridge Domain	Enter the associated network of the target. For Anycast, the bridge domain should be the same as that used for the node. **Note** The associated network of the target should be *either* a bridge domain *or* an L3 network.
L3 Network	Enter the associated network of the target. **Note** The associated network of the target should be *either* a bridge domain *or* an L3 network.
L3 Destination (VIP)	Indicates whether this logical interface is terminating the L3 traffic in the service chain. The default for this parameter is enabled (checked). However, this setting is not considered if a policy-based redirect policy is configured on logical interface context. **Note** For Multi-Node PBR, if this logical interface is a consumer construct on a load balancer terminated on a virtual IP external network, put a check in this box and remove any association to a redirect policy in the next field (**L4-L7 Policy Based Redirect**). If this logical interface is a provider construct on a load balancer and it is performing SNAT, then put a check in this box and remove any association to a redirect policy in the next field (**L4-L7 Policy Based Redirect**).
L4-L7 Policy Based Redirect	Optional. Choose the Policy Based Redirect policy or **Create L4-L7 Policy Based Redirect**. **Note** For Multi-Node PBR, if this logical interface is a consumer construct on a load balancer terminated on a virtual IP external network, remove this association to a redirect policy (if entered) and put a check in the **L3 Destination (VIP)** box.
Custom QoS Policy	Optional. Choose a Custom QoS Policy, the default policy, or **Create Custom QoS Policy**.

Property	Description
Preferred Contract Group	The preferred group policy enforcement type. Valid types: • **Include**: EPGs or interfaces configured with this policy option are included in the subgroup and can communicate with others in the subgroup without a contract. • **Exclude**: EPGs or interfaces configured with this policy option are not included in the subgroup and cannot communicate with others in the subgroup without a contract.
Permit Logging	Enable permit logging for the interface context. Default is disabled (false).
Subnets	Click + to add a subnet. Configure the gateway address, the network visibility of the subnet (scope), primary IP address (preferred subnet), and the subnet control state.
Virtual IP Addresses	Click + to add a Virtual IP Address (VIP) if this subnet is used for an L3 virtual destination (**L3 Destination (VIP)** is checked).

Step 8 Click **OK**.

Step 9 Click **Submit**.

Configuring a Device Selection Policy Using REST APIs

You can use the REST APIs to configure a device selection policy.

Creating a Device Selection Policy Using the REST API

The following REST API creates a device selection policy:

```
<polUni>
    <fvTenant dn="uni/tn-acme" name="acme">
        <vnsLDevCtx ctrctNameOrLbl="webCtrct" graphNameOrLbl="G1" nodeNameOrLbl="Node1">
            <vnsRsLDevCtxToLDev tDn="uni/tn-acme/lDevVip-ADCCluster1"/>

             <!-- The connector name C4, C5, etc.. should match the
                  Function connector name used in the service graph template -->

             <vnsLIfCtx connNameOrLbl="C4">
                <vnsRsLIfCtxToLIf tDn="uni/tn-acme/lDevVip-ADCCluster1/LIf-ext"/>
            </vnsLIfCtx>
            <vnsLIfCtx connNameOrLbl="C5">
                <vnsRsLIfCtxToLIf tDn="uni/tn-acme/lDevVip-ADCCluster1/LIf-int"/>
            </vnsLIfCtx>
```

```
        </vnsLDevCtx>
    </fvTenant>
</polUni>
```

Adding a Logical Interface in a Device Using the REST APIs

The following REST API adds a logical interface in a device:

```
<polUni>
    <fvTenant dn="uni/tn-acme" name="acme">
        <vnsLDevVip name="ADCCluster1">

            <!-- The LIF name defined here (such as e.g., ext, or int) should match the
                 vnsRsLIfCtxToLIf 'tDn' defined in LifCtx  -->

            <vnsLIf name="ext">

                <vnsRsMetaIf tDn="uni/infra/mDev-Acme-ADC-1.0/mIfLbl-outside"/>
                <vnsRsCIfAtt tDn="uni/tn-acme/lDevVip-ADCCluster1/cDev-ADC1/cIf-ext"/>
            </vnsLIf>
            <vnsLIf name="int">
                <vnsRsMetaIf tDn="uni/infra/mDev-Acme-ADC-1.0/mIfLbl-inside"/>
                <vnsRsCIfAtt tDn="uni/tn-acme/lDevVip-ADCCluster1/cDev-ADC1/cIf-int"/>
            </vnsLIf>
        </vnsLDevVip>
    </fvTenant>
</polUni>
```