



## Verifying IP-Based EPG Configurations

There are two types of endpoint groups (EPGs) that you can create: application EPGs and IP-based EPGs. IP-based EPGs differ from regular application EPGs in that they are microsegment EPGs. This chapter explains how to verify that your IP-based EPG configurations are properly classified as IP-based using the GUI or using switch commands.

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### Verifying IP-Based EPG Configurations Using the GUI

This procedure explains how to verify that you have correctly configured an IP-based EPG using the GUI and Visore tool.

- Step 1** Verify that the IP-based EPG you created is listed under the **uSeg EPGs** folder in the GUI (shown in the following screen capture).  
Note that there is one IP-based EPG listed under uSeg EPGs named "IP" that was created using the REST API.
- Step 2** Verify that the information is correct in the EPG - IP properties screen (right side window pane) for each EPG IP (IP-based EPG).  
Note the list of IP-based EPGs and IP addresses that are shown at the bottom of the screen.
- Step 3** From your web browser, enter the APIC IP address followed by "/visore.html." Visore is a tool that allows you to view all the objects in the system, such as EPGs. You can use Visore to verify that your IP-based EPGs have been properly configured. For more information about Visore, see the *Application Policy Infrastructure Controller Visore Tool Introduction* document.
- Step 4** Enter your username and password then click **Login** to log into Visore.
- Step 5** Run a query for the IP-based EPGs that you verified in the GUI by entering the name of the class in the field next to **Class or DN** (for example, "fvAEPg").

**Note** This is a view from the APIC point of view. You can see that the "Total objects shown" above is "3", meaning there are three EPGs that were downloaded to the switch. You can see that the IP-based EPG that was previously listed in the GUI as "IP" is now shown next to "dn". Also note that "yes" is displayed next to "isAttrBasedEPg", which means that this has been properly configured as an IP-based EPG. You can verify all the objects have been configured successfully using Visore, including both application EPGs and IP-based EPGs.

- Step 6** This is a view from the switch point of view. On the switch, you can run a query for the fvEpP class to see the EPGs and check for the "crtrnEnabled" attribute. It will be set to "yes" for IP-based EPGs. Verify that under this EPG, the children of the EPG are shown with IP addresses to ensure a proper configuration. For each IP address configured, there is one object (named "l3IpCktEp") that the switch uses to classify the traffic. Once the configuration is there, when the packets arrive, the switch uses these objects to classify them.
- Step 7** Verify that the pcTags for all the endpoints and IP addresses that you configured match. Every EPG has a pcTag. All the endpoints that match with the IP addresses you configured are classified into this pcTag. Every endpoint has an IP address that you can run a class query on. When you are troubleshooting, you want to verify whether these endpoints (servers) are properly getting classified into this IP-based EPG or not. (The pcTags should match for the IP-based EPG.)

## Verifying IP-EPG Configurations Using Switch Commands

This procedure explains how to use switch commands to verify you IP-EPG ("IpCkt") configurations.

- Step 1** Log in to the leaf.
- Step 2** Navigate to the /mit/sys directory.
- Step 3** In the /mit/sys directory, find ctx (vrf context directory)
- Step 4** In the VRF ctx directory, go to the specific BD directory where the IpCkt is configured. You should see the IpCkt.
- Note** "IpCkt" and "IP-EPG" are used interchangeably in this document.
- Step 5** Navigate to the directory and the "cat summary" gives you the information regarding IpCkt.
- Step 6** Ensure that the summary's "operSt" does not say "unsupported".
- Step 7** Find out the VLAN ID that corresponds to the BD where the IpCkt is configured.
- Note** The VLAN ID can be found through any of the **show vlan internal bd-info** commands or through the **show system internal epm vlan all** command.
- Step 8** Once you find the VLAN ID of the BD, issue **show system internal epm <vlan-id> detail**. Here you should be able to see all the configured IpCkts with a specific sclass. (It should match that of what you see in the /mit/sys directory.)
- Step 9** Repeat the steps for vsh\_lc that you followed for vsh.
- Step 10** Send the traffic with an IP matching the IpCkt in the BD, and through **show system internal epm endp ip <a.b.c.d>**, you can verify that the learned IP has the IP-flags for "sclass" and a specific sclass value.
- Step 11** Repeat the steps for vsh\_lc that you followed for vsh.

List of the Switch Troubleshooting Commands Used in this Procedure:

```
Cd /mits/sys/ctx-vxlan.../bd-vxlan...
- cat summary
Vsh -c "show system internal epm vlan all" or
Vsh -c "show vlan internal bd-info"
Vsh -c "show system internal epm vlan <vlan-id> detail"
Vsh -c "show system internal epm endp ip <a.b.c.d>"
Vsh_lc -c "show system internal epm vlan all" or
```

```
Vsh_lc -c "show vlan internal bd-info"  
Vsh_lc -c "show system internal epm vlan <vlan-id> detail"  
vsh_lc -c "show system internal epm endp ip <a.b.c.d>"  
vsh_lc -c "show system internal epm epg"
```

