Fabric Port Tracking

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About Fabric Port Tracking

The port tracking feature manages the status of downlink ports on each leaf node based on the status of its fabric ports. Fabric ports are the links between leaf and spine nodes. Links between tier-1 and tier-2 leaf nodes in multi-tier topologies and links between remote leaf nodes (back-to-back links) are also considered to be fabric links.

When this feature is enabled and the number of operational fabric ports on a given leaf node is decreased to the configured threshold or lower, the downlink ports of the leaf node will be brought down so that external devices can switch over to other healthy leaf nodes. When the number of operational fabric ports comes back up to greater than the configured threshold, the downlink ports will be brought back up. At this time, there will be a wait time of the configured delay before the downlink ports are brought up. If the leaf node is part of a vPC peer and does not have any infra ISIS adjacencies--meaning that the node is unable to communicate with the other vPC peer leaf node--when port tracking is triggered such as when all fabric ports went down, the wait time for the vPC downlink ports to come up after the status restoration will be the longer time of either the vPC delay timer or the configured delay in port tracking. Non-vPC downlink ports always follow the delay timer configured in port tracking.

Beginning in Cisco Application Centric Infrastructure (ACI) switch release 14.2(1), the status of fabric infra ISIS adjacency (represented by the attribute `aggFabAdjOperSt` of the managed object class `isisDom`) is also checked as an alternative condition to trigger the shutdown of downlink ports. The check is performed to cover a scenario in which fabric ports on a given leaf node are up, but the leaf node has lost reachability to other Cisco ACI nodes for another reason. This condition is always checked when the feature is enabled regardless of the other parameters, such as the minimum number of operational fabric ports. However, it is not applicable to remote leaf nodes because those nodes do not rely on ISIS for fabric infra reachability.

Beginning in Cisco ACI switch release 15.0(1), the "Include APIC ports" option is supported. This option is disabled by default. When this option is disabled, port tracking only brings down downlink ports that are configured for user traffic (that is, ports that are in use by EPGs or L3Outs) while downlink ports connected to the Cisco Application Policy Infrastructure Controllers (APICs) or unused ports are not brought down. When this option is enabled, port tracking brings down all downlink ports on the leaf node. Prior to release 15.0(1), downlink ports that were configured for user traffic were brought down while ports connected to the

Cisco APIC were not, and you could not configure port tracking to bring down ports that were connected to the Cisco APIC.

Note Port tracking checks the conditions to bring down the ports or bring up the ports every second on each leaf node.

FEX fabric ports--that is, the network interface (NIF) to connect the FEX and the FEX's parent leaf node--are not impacted by port tracking.

Configuring Fabric Port Tracking Using the GUI

This procedure uses the Cisco Application Policy Infrastructure Controller (APIC) GUI to configure the port track feature.

Procedure

Step 1 On the menu bar, choose **System** > **System Settings**.

Step 2 In the Navigation pane, choose **Port Tracking**.

Step 3 For the **Port tracking state** parameter, choose **on** to enable fabric port tracking.

Step 4 For the **Delay restore timer** parameter, specify the time in seconds.

This parameter determines how long the leaf node will wait before bringing up its downlink ports after the fabric port status and infra ISIS adjacencies are restored.

Step 5 Configure the **Number of active fabric ports that triggers port tracking** parameter.

When the number of operational fabric ports on a leaf node is decreased to the configured number or lower, the leaf node will bring down its downlink ports.

Step 6 (Optional) Put a check in the **Include APIC ports when port tracking is triggered** checkbox.

Enabling this parameter brings down the downlink ports that are connected to the Cisco APICs as well as downlink ports for user traffic when port tracking is triggered. This option should not be checked unless the Cisco APIC is connected to two different leaf nodes for high availability.

Configuring Fabric Port Tracking Using the REST API

This procedure configures the port track feature using the REST API.

Send a REST API POST similar to the following example:

POST: `apic_ip_address/api/mo/uni.xml`

```
<infraPortTrackPol
    dn="uni/infra/trackEqptFabP-default"     # Fixed DN. Do not change.
    adminSt="on"                             # 'on' to enable, 'off' to disable
    delay="120"                              # The delay timer (sec) to bring up the
                                             #   downlink ports
    minlinks="0"                             # The minimum required number of operational
                                             #   fabric ports
    includeApicPorts="no"                    # 'no' to prevent Port Tracking from impacting
                                             #   APIC connected ports
/>
```