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# Cisco Application Policy Infrastructure Controller Release Notes, Release 5.2(6)

#### Introduction

The Cisco Application Centric Infrastructure (ACI) is an architecture that allows the application to define the networking requirements in a programmatic way. This architecture simplifies, optimizes, and accelerates the entire application deployment lifecycle. Cisco Application Policy Infrastructure Controller (APIC) is the software, or operating system, that acts as the controller.

This document describes the features, issues, and limitations for the Cisco APIC software. For the features, issues, and limitations for the Cisco NX-OS software for the Cisco Nexus 9000 series switches, see the <u>Cisco Nexus 9000 ACI-Mode Switches Release Notes</u>, Release 15.2(6).

| Date               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| April 29, 2024     | <ul> <li>In the Miscellaneous Compatibility Information section, added:</li> <li>4.2(3j) CIMC HUU ISO (recommended) for UCS C220/C240 M5 (APIC-L3/M3)</li> <li>4.1(3m) CIMC HUU ISO for UCS C220/C240 M5 (APIC-L3/M3)</li> </ul>                                                                                                                                                                                                                                                |
| November 29, 2022  | <ul> <li>In the Known Issues section, added:</li> <li>If you are upgrading to Cisco APIC release 4.2(6o), 4.2(7I), 5.2(1g), or later, ensure that any VLAN encapsulation blocks that you are explicitly using for leaf switch front panel VLAN programming are set as "external (on the wire)." If these VLAN encapsulation blocks are instead set to "internal," the upgrade causes the front panel port VLAN to be removed, which can result in a datapath outage.</li> </ul> |
| November 18, 2022  | In the Open Issues section, added bug CSCwc66053.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| October 27, 2022   | Release 5.2(6g) became available. Added the resolved bugs for this release.                                                                                                                                                                                                                                                                                                                                                                                                     |
| October 19, 2022   | In the Changes in Behavior section, added the bullet that begins with "The hash result of symmetric EtherChannel could be different because of the fix for issue CSCwb93059."                                                                                                                                                                                                                                                                                                   |
| September 27, 2022 | In the Open Issues section, added bug CSCwc49449.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| August 30, 2022    | Release 5.2(6e) became available.                                                                                                                                                                                                                                                                                                                                                                                                                                               |

For more information about this product, see "Related Content."

## New Software Features

| Feature                                    | Description                                                                                                                                  |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| ACI-mode switch version and LLDP neighbors | You can now view the ACI-mode switch release and information about LLDP neighbors of a node in the Cisco APIC GUI. To view this information: |
| information                                | 1. On the menu bar, choose <b>Fabirc &gt; Inventory</b> .                                                                                    |
|                                            | 2. In the Navigation pane, choose Fabric Membership.                                                                                         |
|                                            | 3. In the Work pane, choose the <b>Nodes Pending Registration</b> tab.                                                                       |
|                                            | 4. Double-click the row of a node. The information displays in the <b>General</b> tab of the dialog.                                         |
|                                            | The LLDP neighbor information includes the node ID, node name, node NX-OS version, and interfaces.                                           |

#### **New Hardware Features**

For the new hardware features, see the <u>Cisco Nexus 9000 ACI-Mode Switches Release Notes</u>, <u>Release</u> <u>15.2(6)</u>.

# Changes in Behavior

For the changes in behavior, see the Cisco ACI Releases Changes in Behavior document.

#### **Open Issues**

Click the bug ID to access the Bug Search tool and see additional information about the bug. The "Exists In" column of the table specifies the 5.2(6) releases in which the bug exists. A bug might also exist in releases other than the 5.2(6) releases.

| Bug ID            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Exists in            |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| CSCwh56716        | When the Cisco APICs use Direct Connect to CSSM, running the "show license usage" command on APIC 1, 2, or 3 shows ACI_LEAF_ESS_10G 6 in use. When APICs 2 and 3 are restarted, this output is unchanged. When APIC 1 is restarted, the output becomes "No Licenses in use" on APICs 1, 2, and 3. The "Registering for Smart Licensing with Direct Connect to CSSM Using the GUI" process has to be done again. This was tested in the lab with Cisco APIC releases 5.2(6g), 5.2(7g), and 6.0(2j) |                      |
| <u>CSCvg81020</u> | For strict security requirements, customers require custom certificates that have RSA key lengths of 3072 and 4096.                                                                                                                                                                                                                                                                                                                                                                               | 5.2(6e) and<br>later |
| <u>CSCvm56946</u> | Support for local user (admin) maximum tries and login delay configuration.                                                                                                                                                                                                                                                                                                                                                                                                                       | 5.2(6e) and<br>later |
| <u>CSCvt99966</u> | A SPAN session with the source type set to "Routed-Outside" goes down. The SPAN configuration is pushed to the anchor or non-anchor nodes, but the interfaces are not pushed due to the following fault: "Failed to configure SPAN with source SpanFL3out due to Source fvlfConn not available".                                                                                                                                                                                                  | 5.2(6e) and<br>later |
| <u>CSCvy40511</u> | Traffic from an endpoint under a remote leaf switch to an external node and its attached external networks is dropped. This occurs if the external node is attached to an L3Out with a vPC and there is a redistribution configuration on the L3Out to advertise the reachability of the external nodes as direct-attached hosts.                                                                                                                                                                 | 5.2(6e) and<br>later |
| <u>CSCvz72941</u> | While performing ID recovery, id-import gets timed out. Due to this, ID recovery fails.                                                                                                                                                                                                                                                                                                                                                                                                           | 5.2(6e) and<br>later |
| <u>CSCvz83636</u> | For a health record query using the last page and a time range, the GUI displays some health records with a creation time that is beyond the time range (such as 24h).                                                                                                                                                                                                                                                                                                                            | 5.2(6e) and<br>later |
| <u>CSCwa53478</u> | After migrating a VM between two hosts using VMware vMotion, EPG does not get deployed on the target leaf node. When affected, the fvlfConn managed object corresponding to the missing EPG can be seen on APIC, but it would be missing from the target leaf node when queried.                                                                                                                                                                                                                  | 5.2(6e) and<br>later |
| <u>CSCwa58709</u> | The GIPo address is only visible on APIC 1 when using the command " cat /data/data_admin/sam_exported.config". The command output from the other APICs outputs do not show the GIPo address.                                                                                                                                                                                                                                                                                                      | 5.2(6e) and<br>later |

| Bug ID            | Description                                                                                                                                                                                                                                                                                                                                            | Exists in            |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <u>CSCwa90058</u> | When a VRF-level subnet <fvrtsummsubnet> and instP-level subnet <l3extsubnet> with a summary policy is configured for an overlapping subnet, the routes will get summarized by the configuration that was added first. But, the fault on the configuration that was added last will not be shown in the Cisco APIC GUI.</l3extsubnet></fvrtsummsubnet> | 5.2(6e) and<br>later |
| <u>CSCwa90084</u> | <ul> <li>Traffic disruption across a vPC pair on a given encapsulation.</li> <li>OR</li> <li>EPG flood in encap blackholing on a given encapsulation.</li> <li>OR</li> <li>STP packets received on an encapsulation on a given port are not forwarded on all the leaf switches where the same EPG/same encapsulation is deployed.</li> </ul>           | 5.2(6e) and<br>later |
| CSCwc11570        | In certain configuration sequences, bridge domain routes (and consequently, host routes) are not advertised out of GOLF and ACI Anywhere L3Outs.                                                                                                                                                                                                       | 5.2(6e) and<br>later |
| CSCwc47735        | There is no feedback to the user in case of an unexpected signal interruption.                                                                                                                                                                                                                                                                         | 5.2(6e) and<br>later |
| <u>CSCwc49449</u> | When a maintenance policy has multiple switch nodes, such as vPC pair nodes, an SMU's uninstallation gets stuck in the "queued" state for one of the nodes.                                                                                                                                                                                            | 5.2(6e) and<br>later |
| CSCwc66053        | Preconfiguration validations for L3Outs that occur whenever a new configuration is pushed to the Cisco APIC might not get triggered.                                                                                                                                                                                                                   | 5.2(6e) and<br>later |
| <u>CSCwd44827</u> | APIC fails to update standalone Layer3 controller subnet on its fabric.The following fault is raised.<br>F609478 - [FSM:FAILED]: Update Standalone Controller<br>Subnet(TASK:ifc:policymgr:FabricCtrlrConfigPUpdatePodConnPDef)                                                                                                                        | 5.2(6e) and<br>later |
| <u>CSCwe09859</u> | The OpFlex agent on a hypervisor randomly disconnects, impacting VM traffic.                                                                                                                                                                                                                                                                           | 5.2(6e) and<br>later |
| CSCwe52465        | The NICC app image fails to load.                                                                                                                                                                                                                                                                                                                      | 5.2(6e) and<br>later |
| CSCwe66712        | For a customer using America/Mexico_City time, the DST time change will still happen on APIC in the year 2023.                                                                                                                                                                                                                                         | 5.2(6e) and<br>later |
| <u>CSCwe92155</u> | After configuring syslog using TCP on port 59500, the logit was sent out normally and netstat showed that it was established. However, after aborting the connection from the syslog server side, the TCP connection went from ESTABLISHED to CLOSE_WAIT and disappeared from the APIC side.                                                           | 5.2(6e) and<br>later |
| <u>CSCwe96230</u> | The Appliance Element (AE) service gets restarted several times by the cgroup process (oom-killer).                                                                                                                                                                                                                                                    | 5.2(6e) and<br>later |
| CSCwf19660        | Major fault F3083 (" IP detected on multiple MACs" ) is raised under a uEPG and ESG when an EPG selector is configured in the ESG.                                                                                                                                                                                                                     | 5.2(6e) and<br>later |
| CSCwf54771        | User configuration is missing on APICs and switches following an ungraceful reload or power outage.                                                                                                                                                                                                                                                    | 5.2(6e) and<br>later |

| Bug ID            | Description                                                                                                                                                                                                                                                                                                                                                                         | Exists in            |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| CSCwf61646        | Adding wildcard entry (entry with etherType=unspecified) to a filter that has more specific entries (specific ethertype/protocol/etc) can cause SDKHAL to crashSwitch will crash constantly and eventually may come up with either a different image (golden image)                                                                                                                 | 5.2(6e) and<br>later |
| CSCwh17898        | The "panic: runtime error: invalid memory address or nil pointer dereference." Error occurred and then F1419 (Service kron failed on apic) was raised.                                                                                                                                                                                                                              | 5.2(6e) and<br>later |
| CSCwh41865        | When upgrading an APIC, the "from" version is displayed as "to" version in the event record.                                                                                                                                                                                                                                                                                        | 5.2(6e) and<br>later |
| CSCwh47921        | Numerous files that are in the deleted state, but are still being used by multiple processes, are not allowing the files to be removed from the file system. This causes the Cisco APIC storage to surpass the 90% threshold of log rotation.                                                                                                                                       | 5.2(6e) and<br>later |
| CSCwh74484        | ACI pushes the VLANs from the old VLAN pool after changing the vNIC template in the UCSM $% \left( \mathcal{L}_{\mathrm{A}}^{\mathrm{A}}\right) =0$                                                                                                                                                                                                                                 | 5.2(6e) and<br>later |
| CSCwh81272        | The system resets due to a policyelem high availability policy reset.                                                                                                                                                                                                                                                                                                               | 5.2(6e) and<br>later |
| CSCwh83273        | A Cisco APIC cannot be added to the cluster because the GUI rejects the ID if is not within the range of 1-7.The Initial Setup Configuration states that the fabric ID valid range is 1-128.                                                                                                                                                                                        | 5.2(6e) and<br>later |
| CSCwh98712        | When running "show running-config" from API CLI, the command takes several minutes to complete. Several thousand API requests are seen in access.log querying ptpRsProfile on every static path.                                                                                                                                                                                    | 5.2(6e) and<br>later |
| CSCwi01316        | In the following topology:<br>Tenant 1:<br>VRF 1 > EPG A, EPG B. There is an any-to-any Intra VRF instance contract and EPG<br>A and B are providers for an inter-VRF instance contract.<br>VRF 2 > L3Out or EPG. The VRF instance consumes the inter-VRF instance contract.<br>Traffic will unexpectedly get sent to the wrong rule when inter-VRF instance traffic is<br>flowing. | 5.2(6e) and<br>later |
| CSCwi34095        | App installation fails on the Cisco APIC with the error "Unable to add elasticsearch credentials".<br>This is seen for any app making use of Elasticsearch, such as Nexus Insight Cloud Connector.                                                                                                                                                                                  | 5.2(6e) and<br>later |
| <u>CSCwi40671</u> | In a remote leaf switch, when the initial policy download happens, nginx generates a core. The process recovers by itself after a restart. This issue does not have any major functionality impact.                                                                                                                                                                                 | 5.2(6e) and<br>later |
| CSCwd05441        | The OpFlex agent may fail to download some policies from the leaf nodes, which are common across multiple VMM domains that are present on these leaf nodes. This may lead to the communication issues from/to endpoints.                                                                                                                                                            | 5.2(6e)              |

# **Resolved Issues**

| Bug ID     | Description                                                                                                                                                                                                              | Fixed in |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CSCwd05441 | The OpFlex agent may fail to download some policies from the leaf nodes, which are common across multiple VMM domains that are present on these leaf nodes. This may lead to the communication issues from/to endpoints. | 5.2(6g)  |
| CSCvy00746 | A breakout parent port shows in the drop-down list for the SPAN source even after the port is broken out.                                                                                                                | 5.2(6e)  |

#### **Known Issues**

Click the bug ID to access the Bug Search tool and see additional information about the bug. The "Exists In" column of the table specifies the 5.2(6) releases in which the bug exists. A bug might also exist in releases other than the 5.2(6) releases.

| Bug ID            | Description                                                                                                                                                                                                                                                                                                                             | Exists in            |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <u>CSCuu11416</u> | An endpoint-to-endpoint ACI policy that uses Layer 2 traffic with an IPv6 header does not get counted within or across ESGs/EPGs.                                                                                                                                                                                                       | 5.2(6e) and<br>later |
| <u>CSCvj26666</u> | The "show run leaf spine <nodeld>" command might produce an error for scaled up configurations.</nodeld>                                                                                                                                                                                                                                | 5.2(6e) and<br>later |
| <u>CSCvj90385</u> | With a uniform distribution of EPs and traffic flows, a fabric module in slot 25 sometimes reports far less than 50% of the traffic compared to the traffic on fabric modules in non-FM25 slots.                                                                                                                                        | 5.2(6e) and<br>later |
| <u>CSCvq39764</u> | When you click Restart for the Microsoft System Center Virtual Machine Manager (SCVMM) agent on a scaled-out setup, the service may stop. You can restart the agent by clicking Start.                                                                                                                                                  | 5.2(6e) and<br>later |
| <u>CSCvq58953</u> | One of the following symptoms occurs:<br>App installation/enable/disable takes a long time and does not complete.<br>Nomad leadership is lost. The output of the acidiag scheduler logs members<br>command contains the following error:<br>Error querying node status: Unexpected response code: 500 (rpc error: No cluster<br>leader) | 5.2(6e) and<br>later |
| <u>CSCvr89603</u> | The CRC and stomped CRC error values do not match when seen from the APIC CLI compared to the APIC GUI. This is expected behavior. The GUI values are from the history data, whereas the CLI values are from the current data.                                                                                                          | 5.2(6e) and<br>later |
| CSCvs19322        | Upgrading Cisco APIC from a 3.x release to a 4.x release causes Smart Licensing to lose its registration. Registering Smart Licensing again will clear the fault.                                                                                                                                                                       | 5.2(6e) and<br>later |
| <u>CSCvs77929</u> | In the 4.x and later releases, if a firmware policy is created with different name than<br>the maintenance policy, the firmware policy will be deleted and a new firmware<br>policy gets created with the same name, which causes the upgrade process to fail.                                                                          | 5.2(6e) and<br>later |
| <u>CSCvx75380</u> | svcredirDestmon objects get programmed in all of the leaf switches where the service L3Out is deployed, even though the service node may not be connected to some of the leaf switch.<br>There is no impact to traffic.                                                                                                                 | 5.2(6e) and<br>later |

| Bug ID            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Exists in            |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <u>CSCvx78018</u> | A remote leaf switch has momentary traffic loss for flushed endpoints as the traffic goes through the tglean path and does not directly go through the spine switch proxy path.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 5.2(6e) and<br>later |
| <u>CSCvy07935</u> | xR IP flush for all endpoints under the bridge domain subnets of the EPG being migrated to ESG. This will lead to a temporary traffic loss on remote leaf switch for all EPGs in the bridge domain. Traffic is expected to recover.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5.2(6e) and<br>later |
| <u>CSCvy10946</u> | With the floating L3Out multipath recursive feature, if a static route with multipath is configured, not all paths are installed at the non-border leaf switch/non-anchor nodes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5.2(6e) and<br>later |
| <u>CSCvv34357</u> | <ul> <li>Starting with the 5.2(6) release, the following apps built with the following non-compliant Docker versions cannot be installed nor run:</li> <li>ConnectivityCompliance 1.2</li> <li>SevOneAciMonitor 1.0</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5.2(6e) and<br>later |
| <u>CSCvy45358</u> | The file size mentioned in the status managed object for techsupport "dbgexpTechSupStatus" is wrong if the file size is larger than 4GB.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5.2(6e) and<br>later |
| CSCvz06118        | In the "Visibility and Troubleshooting Wizard," ERSPAN support for IPv6 traffic is not available.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 5.2(6e) and<br>later |
| <u>CSCvz84444</u> | While navigating to the last records in the various History sub tabs, it is possible to not see any results. The first, previous, next, and last buttons will then stop working too.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 5.2(6e) and<br>later |
| <u>CSCvz85579</u> | VMMmgr process experiences a very high load for an extended period of time that<br>impacts other operations that involve it.<br>The process may consume excessive amount of memory and get aborted. This can<br>be confirmed with the command "dmesg -T   grep oom_reaper" if messages such<br>as the following are reported:<br>oom_reaper: reaped process 5578 (svc_ifc_vmmmgr.)                                                                                                                                                                                                                                                                                                                             | 5.2(6e) and<br>later |
| <u>CSCwa78573</u> | <ul> <li>When the "BGP" branch is expanded in the Fabric &gt; Inventory &gt; POD 1 &gt; Leaf &gt; Protocols &gt; BGP navigation path, the GUI freezes and you cannot navigate to any other page.</li> <li>This occurs because the APIC gets large set of data in response, which cannot be handled by the browser for parts of the GUI that do not have the pagination.</li> </ul>                                                                                                                                                                                                                                                                                                                             | 5.2(6e) and<br>later |
| N/A               | If you are upgrading to Cisco APIC release 4.2(6o), 4.2(7I), 5.2(1g), or later, ensure that any VLAN encapsulation blocks that you are explicitly using for leaf switch front panel VLAN programming are set as "external (on the wire)." If these VLAN encapsulation blocks are instead set to "internal," the upgrade causes the front panel port VLAN to be removed, which can result in a datapath outage.                                                                                                                                                                                                                                                                                                 | 5.2(6e) and<br>later |
| N/A               | Beginning in Cisco APIC release 4.1(1), the IP SLA monitor policy validates the IP SLA port value. Because of the validation, when TCP is configured as the IP SLA type, Cisco APIC no longer accepts an IP SLA port value of 0, which was allowed in previous releases. An IP SLA monitor policy from a previous release that has an IP SLA port value of 0 becomes invalid if the Cisco APIC is upgraded to release 4.1(1) or later. This results in a failure for the configuration import or snapshot rollback.<br>The workaround is to configure a non-zero IP SLA port value before upgrading the Cisco APIC, and use the snapshot and configuration export that was taken after the IP SLA port change. | 5.2(6e) and<br>later |

| Bug ID | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Exists in            |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| N/A    | If you use the REST API to upgrade an app, you must create a new firmware.OSource to be able to download a new app image.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5.2(6e) and<br>later |
| N/A    | In a multipod configuration, before you make any changes to a spine switch, ensure that there is at least one operationally "up" external link that is participating in the multipod topology. Failure to do so could bring down the multipod connectivity. For more information about multipod, see the Cisco Application Centric Infrastructure Fundamentals document and the Cisco APIC Getting Started Guide.                                                                                                                                                                                                                                                                                             |                      |
| N/A    | With a non-english SCVMM 2012 R2 or SCVMM 2016 setup and where the virtual machine names are specified in non-english characters, if the host is removed and re-added to the host group, the GUID for all the virtual machines under that host changes. Therefore, if a user has created a micro segmentation endpoint group using "VM name" attribute specifying the GUID of respective virtual machine, then that micro segmentation endpoint group will not work if the host (hosting the virtual machines) is removed and re-added to the host group, as the GUID for all the virtual machines would have changed. This does not happen if the virtual name has name specified in all english characters. | 5.2(6e) and<br>later |
| N/A    | A query of a configurable policy that does not have a subscription goes to the policy distributor. However, a query of a configurable policy that has a subscription goes to the policy manager. As a result, if the policy propagation from the policy distributor to the policy manager takes a prolonged amount of time, then in such cases the query with the subscription might not return the policy simply because it has not reached policy manager yet.                                                                                                                                                                                                                                              | 5.2(6e) and<br>later |
| N/A    | When there are silent hosts across sites, ARP glean messages might not be<br>forwarded to remote sites if a leaf switch without -EX or a later designation in the<br>product ID happens to be in the transit path and the VRF is deployed on that leaf<br>switch, the switch does not forward the ARP glean packet back into the fabric to<br>reach the remote site. This issue is specific to transit leaf switches without -EX or a<br>later designation in the product ID and does not affect leaf switches that have -EX or<br>a later designation in the product ID. This issue breaks the capability of discovering<br>silent hosts.                                                                    | 5.2(6e) and<br>later |
| N/A    | Typically, faults are generally raised based on the presence of the BGP route target profile under the VRF table. However, if a BGP route target profile is configured without actual route targets (that is, the profile has empty policies), a fault will not be raised in this situation.                                                                                                                                                                                                                                                                                                                                                                                                                  | 5.2(6e) and<br>later |
| N/A    | MPLS interface statistics shown in a switch's CLI get cleared after an admin or operational down event.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5.2(6e) and<br>later |
| N/A    | MPLS interface statistics in a switch's CLI are reported every 10 seconds. If, for example, an interface goes down 3 seconds after the collection of the statistics, the CLI reports only 3 seconds of the statistics and clears all of the other statistics.                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5.2(6e) and<br>later |

# Virtualization Compatibility Information

This section lists virtualization compatibility information for the Cisco APIC software.

- For a table that shows the supported virtualization products, see the <u>ACI Virtualization Compatibility</u> <u>Matrix</u>.
- For information about Cisco APIC compatibility with Cisco UCS Director, see the appropriate <u>Cisco</u> <u>UCS Director Compatibility Matrix</u> document.
- This release supports the following additional virtualization products:

| Product                                                        | Supported Release                                                 | Information Location                              |
|----------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------|
| Microsoft Hyper-V                                              | • SCVMM 2019 RTM (Build 10.19.1013.0)<br>or newer                 | N/A                                               |
|                                                                | • SCVMM 2016 RTM (Build 4.0.1662.0) or newer                      |                                                   |
|                                                                | SCVMM 2012 R2 with Update Rollup 9<br>(Build 3.2.8145.0) or newer |                                                   |
| VMM Integration and VMware<br>Distributed Virtual Switch (DVS) | 6.5, 6.7, and 7.0                                                 | Cisco ACI Virtualization Guide, Release<br>5.2(x) |

## Hardware Compatibility Information

This release supports the following Cisco APIC servers:

| Product ID | Description                                                                                    |
|------------|------------------------------------------------------------------------------------------------|
| APIC-L2    | Cisco APIC with large CPU, hard drive, and memory configurations (more than 1000 edge ports)   |
| APIC-L3    | Cisco APIC with large CPU, hard drive, and memory configurations (more than 1200 edge ports)   |
| APIC-M2    | Cisco APIC with medium-size CPU, hard drive, and memory configurations (up to 1000 edge ports) |
| APIC-M3    | Cisco APIC with medium-size CPU, hard drive, and memory configurations (up to 1200 edge ports) |

The following list includes general hardware compatibility information:

- For the supported hardware, see the <u>Cisco Nexus 9000 ACI-Mode Switches Release Notes</u>, <u>Release 15.2(6)</u>.
- Contracts using matchDscp filters are only supported on switches with "EX" on the end of the switch name. For example, N9K-93108TC-EX.
- When the fabric node switch (spine or leaf) is out-of-fabric, the environmental sensor values, such as Current Temperature, Power Draw, and Power Consumption, might be reported as "N/A." A status might be reported as "Normal" even when the Current Temperature is "N/A."
- First generation switches (switches without -EX, -FX, -GX, or a later suffix in the product ID) do not support Contract filters with match type "IPv4" or "IPv6." Only match type "IP" is supported. Because of this, a contract will match both IPv4 and IPv6 traffic when the match type of "IP" is used.

The following table provides compatibility information for specific hardware:

| Product ID                       | Description                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cisco UCS M4-based<br>Cisco APIC | The Cisco UCS M4-based Cisco APIC and previous versions support only the 10G interface.<br>Connecting the Cisco APIC to the Cisco ACI fabric requires a same speed interface on the<br>Cisco ACI leaf switch. You cannot connect the Cisco APIC directly to the Cisco N9332PQ ACI<br>leaf switch, unless you use a 40G to 10G converter (part number CVR-QSFP-SFP10G), in |

| Product ID                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                  | which case the port on the Cisco N9332PQ switch auto-negotiates to 10G without requiring any manual configuration.                                                                                                                                                                                                                                                                                                                                                                       |  |
| Cisco UCS M5-based<br>Cisco APIC | The Cisco UCS M5-based Cisco APIC supports dual speed 10G and 25G interfaces.<br>Connecting the Cisco APIC to the Cisco ACI fabric requires a same speed interface on the<br>Cisco ACI leaf switch. You cannot connect the Cisco APIC directly to the Cisco N9332PQ ACI<br>leaf switch, unless you use a 40G to 10G converter (part number CVR-QSFP-SFP10G), in<br>which case the port on the Cisco N9332PQ switch auto-negotiates to 10G without requiring<br>any manual configuration. |  |
| N2348UPQ                         | To connect the N2348UPQ to Cisco ACI leaf switches, the following options are available:<br>Directly connect the 40G FEX ports on the N2348UPQ to the 40G switch ports on the Cisco<br>ACI leaf switches                                                                                                                                                                                                                                                                                 |  |
|                                  | Break out the 40G FEX ports on the N2348UPQ to $4x10G$ ports and connect to the 10G ports on all other Cisco ACI leaf switches.                                                                                                                                                                                                                                                                                                                                                          |  |
|                                  | Note: A fabric uplink port cannot be used as a FEX fabric port.                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| N9K-C9348GC-FXP                  | This switch does not read SPROM information if the PSU is in a shut state. You might see an empty string in the Cisco APIC output.                                                                                                                                                                                                                                                                                                                                                       |  |
| N9K-C9364C-FX                    | Ports 49-64 do not support 1G SFPs with QSA.                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| N9K-C9508-FM-E                   | The Cisco N9K-C9508-FM-E2 and N9K-C9508-FM-E fabric modules in the mixed mode configuration are not supported on the same spine switch.                                                                                                                                                                                                                                                                                                                                                  |  |
| N9K-C9508-FM-E2                  | The Cisco N9K-C9508-FM-E2 and N9K-C9508-FM-E fabric modules in the mixed mode configuration are not supported on the same spine switch.                                                                                                                                                                                                                                                                                                                                                  |  |
|                                  | The locator LED enable/disable feature is supported in the GUI and not supported in the Cisco ACI NX-OS switch CLI.                                                                                                                                                                                                                                                                                                                                                                      |  |
| N9K-C9508-FM-E2                  | This fabric module must be physically removed before downgrading to releases earlier than Cisco APIC 3.0(1).                                                                                                                                                                                                                                                                                                                                                                             |  |
| N9K-X9736C-FX                    | The locator LED enable/disable feature is supported in the GUI and not supported in the Cisco ACI NX-OS Switch CLI.                                                                                                                                                                                                                                                                                                                                                                      |  |
| N9K-X9736C-FX                    | Ports 29 to 36 do not support 1G SFPs with QSA.                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |

# Miscellaneous Compatibility Information

This release supports the following products:

| Product           | Supported Release                                                                                                                                                                                                                                                                        |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cisco NX-OS       | 15.2(6)                                                                                                                                                                                                                                                                                  |
| Cisco UCS Manager | 2.2(1c) or later is required for the Cisco UCS Fabric Interconnect and other components, including the BIOS, CIMC, and the adapter.                                                                                                                                                      |
| CIMC HUU ISO      | <ul> <li>4.2(3j) CIMC HUU ISO (recommended) for UCS C220/C240 M5 (APIC-L3/M3)</li> <li>4.2(3e) CIMC HUU ISO for UCS C220/C240 M5 (APIC-L3/M3)</li> <li>4.2(3b) CIMC HUU ISO for UCS C220/C240 M5 (APIC-L3/M3)</li> <li>4.2(2a) CIMC HUU ISO for UCS C220/C240 M5 (APIC-L3/M3)</li> </ul> |

| Product                                                                                      | Supported Release                                                                                                              |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|                                                                                              | • 4.1(3m) CIMC HUU ISO for UCS C220/C240 M5 (APIC-L3/M3)                                                                       |
|                                                                                              | • 4.1(3f) CIMC HUU ISO for UCS C220/C240 M5 (APIC-L3/M3)                                                                       |
|                                                                                              | • 4.1(3d) CIMC HUU ISO for UCS C220/C240 M5 (APIC-L3/M3)                                                                       |
|                                                                                              | • 4.1(3c) CIMC HUU ISO for UCS C220/C240 M5 (APIC-L3/M3)                                                                       |
|                                                                                              | • 4.1(2k) CIMC HUU ISO (recommended) for UCS C220/C240 M4 (APIC-L2/M2)                                                         |
|                                                                                              | • 4.1(2g) CIMC HUU ISO for UCS C220/C240 M4 (APIC-L2/M2)                                                                       |
|                                                                                              | • 4.1(2b) CIMC HUU ISO for UCS C220/C240 M4 (APIC-L2/M2)                                                                       |
|                                                                                              | • 4.1(1g) CIMC HUU ISO for UCS C220/C240 M4 (APIC-L2/M2) and M5 (APIC-L3/M3)                                                   |
|                                                                                              | • 4.1(1f) CIMC HUU ISO for UCS C220 M4 (APIC-L2/M2) (deferred release)                                                         |
|                                                                                              | • 4.1(1d) CIMC HUU ISO for UCS C220 M5 (APIC-L3/M3)                                                                            |
|                                                                                              | • 4.1(1c) CIMC HUU ISO for UCS C220 M4 (APIC-L2/M2)                                                                            |
|                                                                                              | • 4.0(4e) CIMC HUU ISO for UCS C220 M5 (APIC-L3/M3)                                                                            |
|                                                                                              | • 4.0(2g) CIMC HUU ISO for UCS C220/C240 M4 and M5 (APIC-L2/M2 and APIC-L3/M3)                                                 |
|                                                                                              | • 4.0(1a) CIMC HUU ISO for UCS C220 M5 (APIC-L3/M3)                                                                            |
|                                                                                              | • 3.0(4d) CIMC HUU ISO for UCS C220/C240 M3 and M4 (APIC-L2/M2)                                                                |
|                                                                                              | • 3.0(3f) CIMC HUU ISO for UCS C220/C240 M4 (APIC-L2/M2)                                                                       |
|                                                                                              | • 2.0(13i) CIMC HUU ISO                                                                                                        |
|                                                                                              | • 2.0(9c) CIMC HUU ISO                                                                                                         |
|                                                                                              | • 2.0(3i) CIMC HUU ISO                                                                                                         |
| Network Insights Base,<br>Network Insights Advisor,<br>and Network Insights for<br>Resources | For the release information, documentation, and download links, see the <u>Cisco Network</u><br>Insights for Data Center page. |
|                                                                                              | For the supported releases, see the <u>Cisco Data Center Networking Applications Compatibility</u> <u>Matrix</u> .             |

- This release supports the partner packages specified in the <u>L4-L7 Compatibility List Solution</u> <u>Overview</u> document.
- A known issue exists with the Safari browser and unsigned certificates, which applies when connecting to the Cisco APIC GUI. For more information, see the <u>Cisco APIC Getting Started Guide</u>. <u>Release 5.2(x)</u>.
- For compatibility with Day-2 Operations apps, see the <u>Cisco Data Center Networking Applications</u> <u>Compatibility Matrix</u>.
- Cisco Nexus Dashboard Insights creates a user in Cisco APIC called cisco\_SN\_NI. This user is used when Nexus Dashboard Insights needs to make any changes or query any information from the Cisco APIC. In the Cisco APIC, navigate to the **Audit Logs** tab of the **System > History** page. The cisco\_SN\_NI user is displayed in the User column.

#### **Related Content**

See the Cisco Application Policy Infrastructure Controller (APIC) page for the documentation.

The documentation includes installation, upgrade, configuration, programming, and troubleshooting guides, technical references, release notes, and knowledge base (KB) articles, as well as other documentation. KB articles provide information about a specific use case or a specific topic.

By using the "Choose a topic" and "Choose a document type" fields of the APIC documentation website, you can narrow down the displayed documentation list to make it easier to find the desired document.

You can watch videos that demonstrate how to perform specific tasks in the Cisco APIC on the <u>Cisco Data</u> <u>Center Networking</u> YouTube channel.

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The following table provides links to the release notes, verified scalability documentation, and new documentation:

| Document                                                                                                                       | Description                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cisco Nexus 9000 ACI-Mode Switches Release Notes.<br>Release 15.2(6)                                                           | The release notes for Cisco NX-OS for Cisco Nexus 9000 Series ACI-Mode Switches.                                                                                                                 |
| Verified Scalability Guide for Cisco APIC, Release 5.2(6) and<br>Cisco Nexus 9000 Series ACI-Mode Switches, Release<br>15.2(6) | This guide contains the maximum verified scalability limits for<br>Cisco Application Centric Infrastructure (ACI) parameters for<br>Cisco APIC and Cisco Nexus 9000 Series ACI-Mode<br>Switches. |

#### **Documentation Feedback**

To provide technical feedback on this document, or to report an error or omission, send your comments to <u>apic-docfeedback@cisco.com</u>. We appreciate your feedback.

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