Cisco Application Policy Infrastructure Controller OpenStack Plugins, Release 2.3(1), Release Notes

This document describes the features, caveats, and limitations for the Cisco Application Policy Infrastructure Controller (APIC) OpenStack Plugins.

The Cisco APIC plugins are used to deploy and operate OpenStack instances on a Cisco ACI fabric. The plugins allow dynamic creation of networking constructs to be driven directly from OpenStack, while providing additional visibility and control from the Cisco APIC.

For the verified scalability limits (except the CLI limits), see the Verified Scalability Guide for this release. For the OpenStack Platform Scale Limits:

<table>
<thead>
<tr>
<th>Configurable Options</th>
<th>Per Leaf Scale</th>
<th>Per Fabric Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of OpFlex hosts per leaf or vPC pair</td>
<td>40</td>
<td>N/A</td>
</tr>
<tr>
<td>Number of endpoints per leaf or vPC pair</td>
<td>2000</td>
<td>N/A</td>
</tr>
</tbody>
</table>

For the CLI verified scalability limits, see the Cisco NX-OS Style Command-Line Interface Configuration Guide for this release.

Release notes are sometimes updated with new information about restrictions and caveats. See the following website for the most recent version of this document:


Table 1 shows the online change history for this document.

Table 1 Online History Change

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 15, 2017</td>
<td>Release 2.3(1e) became available.</td>
</tr>
<tr>
<td>September 19, 2017</td>
<td>Updated the Cisco APIC and OpenStack Support Compatibility Matrix section and added the URL.</td>
</tr>
<tr>
<td>January 29, 2018</td>
<td>• Added support for the OpenStack Newton plugin 20180126 in the Cisco APIC and OpenStack Support Compatibility Matrix section.</td>
</tr>
<tr>
<td></td>
<td>• Resolved caveat CSCv05454, CSCv88832, and CSCv31425.</td>
</tr>
<tr>
<td></td>
<td>For more information, see the Resolved Caveats section.</td>
</tr>
</tbody>
</table>
## Contents

This document includes the following sections:

- [New and Changed Information](#)
- [Cisco APIC and OpenStack Support Compatibility Matrix](#)
- [Usage Guidelines](#)
- [Caveats](#)
- [Related Documentation](#)
- [New Documentation](#)

## New and Changed Information

This section lists the new and changed features in this release and includes the following topics:

- [New Software Features](#)
- [Changes in Behavior](#)

## New Software Features

The following are the new software features for the 2.3(1e) release:

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
</table>
| February 28, 2018  | - Added support for the OpenStack Newton plugin 20180228 in the [Cisco APIC and OpenStack Support Compatibility Matrix](#) section.  
                    - Resolved caveat CSCvi52343.  
                    - For more information, see the [Resolved Caveats](#) section.  |
| March 29, 2018     | - Added support for the OpenStack Newton plugin 20180327 in the [Cisco APIC and OpenStack Support Compatibility Matrix](#) section.  
                    - Resolved caveat CSCvi71795 and CSCvi71497.  
                    - For more information, see the [Resolved Caveats](#) section.  |
| April 3, 2018      | Added the OpenStack Platform Scale Limits.                                                                                                                                                                  |
Table 2 New Software Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
<th>Guidelines and Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple VMM Domains</td>
<td>Allows a single OpenStack cluster to have multiple VMM Domains. Each VMM Domain can use an overlapping VLAN ranges. This allows the OpenStack cluster to scale to the fabric maximum EPGs without requiring VXLAN.</td>
<td>Supported only in unified mode.</td>
</tr>
<tr>
<td>IPv6 Dual Stack</td>
<td>Adds support in the ACI plugins for dual stack (IPv6 / IPv4) operation. This allows OpenStack VMs to connect to both IPv4 and IPv6 networks.</td>
<td>Supported only in unified mode. Limited to a single IPv6 address scope.</td>
</tr>
<tr>
<td>Red Hat OSP 10 Support</td>
<td>Cisco ACI OpenStack plugins support Red Hat OSP 10 (Newton). This includes support for OSP Director-based installation.</td>
<td>Supported on the ML2, Group-based Policy, and unified mode plugins.</td>
</tr>
<tr>
<td>Ubuntu Newton Support with J uju charms</td>
<td>Cisco ACI plugins are supported on Newton on the Ubuntu 16.04 platform. Additionally, Cisco provides J uju charms for automated installation of the plugins and OpFlex agent.</td>
<td>Supported only in unified mode. Supports MAAS 1.9 with J uju 1.25, and MAAS 2.2.0 + J uju 2.1.3</td>
</tr>
</tbody>
</table>

Changes in Behavior

This section lists changes in behavior in this release.

- The OpFlex client is now authenticated through the SSL certificate. With a new installation of the Cisco APIC, this is now the default behavior. This behavior can be reverted back to no client authentication through the OpFlexSettings object. Upon upgrading to a Cisco APIC installation of the 2.3(1) release, the default setting is to not authenticate clients. This behavior changes when the administrator posts OpflexSettings that specify for the Cisco APIC to authenticate clients.

Cisco APIC and OpenStack Support Compatibility Matrix

The following table details the Cisco APIC and OpenStack version compatibilities:


Usage Guidelines

The following are known limitations in the 2.3(1) release.

- Group-based Policy (GBP) and Modular Level 2 (ML2) Unified Mode does not have feature parity with the earlier non-unified mode. In particular, it does not support the following features for deployments that need some of these features, continue using the 2.2(1x) or earlier releases.
  - ESX hypervisor support
  - ASR1K edgeNAT support
GBP/NFP Service chaining

ML2 Network constraints

GBP and ML2 Unified Mode supports their coexistence on the same Openstack/ACI Fabric but they need to be running on different VRFs.

GBP and ML2 Unified Mode is a new mode of operation. So, while there can be a manual transition to this mode of usage, there is no automated upgrade from previous install to this mode.

Keystone configuration update.

With this version, the following configuration must be performed in neutron.conf:

```
[apic_aim_auth]
password=<admin_password>
auth_plugin=v3password
user_domain_name=default
project_domain_name=default
project_name=admin
username=admin
auth_url=http://:35357/v3
```

Unified model impact of the transaction Model Updates in Newton.

When GBP and ML2 co-exist, GBP implicitly created some neutron resources. In Newton, the neutron transaction model has been updated and added multiple checks. Some of these checks falsely see this nested transaction usage as an error and log and raise an exception. The exception is handled correctly by GBP and there is no functional impact but the neutron code logs some exceptions in neutron log file – leading to the impression that the action had failed.

While most such exceptions will be logged at the Debug level, occasionally you might see exceptions logged at the Error level. If such an exception log is followed by a log message that indicates the operation is being retried, the exception is being handled correctly. One such example is the following:

Delete of policy-target on a policy-target-group associated to a network-service-policy might raise the following exception:

```
2017-03-18 12:52:34.421 27767 ERROR neutron.api.v2.resource [...] delete failed
2017-03-18 12:52:34.421 27767 ERROR neutron.api.v2.resource Traceback ...:
2017-03-18 12:52:34.421 27767 ERROR neutron.api.v2.resource File "/usr/lib/python2.7/site-packages/neutron/api/v2/resource.py", line 84, ...
...
2017-03-18 12:52:34.421 27767 ERROR neutron.api.v2.resource raise ...
2017-03-18 12:52:34.421 27767 ERROR neutron.api.v2.resource ResourceClosedError: This transaction is closed
```

Note: We are working with the upstream community for further support on Error level logs.

If you use tempest to validate Openstack, the following tests are expected to fail and can be ignored:

- `tempest.api.network.test_networks.NetworksTest.test_external_network_visibility`
Caveats

This section contains lists of open and resolved caveats and known behaviors.

- **Open Caveats**
- **Resolved Caveats**
- **Known Behaviors**

Open Caveats

This section lists the open caveats. Click the bug ID to access the Bug Search tool and see additional information about the bug. If a caveat is fixed in a patch of this release, the "Fixed In" column of the tables specifies the release.

Open Caveats in the 2.3(1) Release

There are no open caveats in the 2.3(1) release.

Resolved Caveats

This section lists the resolved caveats. Click the bug ID to access the Bug Search tool and see additional information about the bug.

Resolved Caveats in the 2.3(1) Release

The following table lists the resolved caveats in the 2.3(1) release.

<table>
<thead>
<tr>
<th>Bug ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCvi71795</td>
<td>Cached session causes exception in get_gbp_details RPC</td>
</tr>
</tbody>
</table>
Bug ID | Description
---|---
CSCvi71497 | Increase opflex keepalive timer to allow longer response time
CSCvi52343 | In non-unified mode, 2.3.1-20180126 plugin has a file descriptor leak
CSCve39029 | Bulk-started Cisco APIC OpenStack instances might produce error state
CSCvh05454 | agent-ovs is not downloading policies from the ACI fabric
CSCvg88832 | When using keystonev3, UUID used even when configured to "use_name"
CSCvg31425 | neutron-opflex-agnet EP file creation blocked by slow OVSDB read

Known Behaviors

This section lists caveats that describe known behaviors. Click the Bug ID to access the Bug Search Tool and see additional information about the bug.

Known Behaviors in the 2.3(1) Release

There are no known behaviors in the 2.3(1) release.

Related Documentation

The Cisco Application Policy Infrastructure Controller (APIC) documentation can be accessed from the following website:


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.

New Documentation

There are no new Cisco APIC product documents for this release.

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