



Cisco Application Policy Infrastructure Controller, Release 1.1(3f), Release Notes

This document describes the features, caveats, and limitations for the Cisco Application Policy Infrastructure Controller (APIC) software. For more information on specific hardware features, see the [Cisco NX-OS Release 11.1\(3f\) Release Notes for Cisco Nexus 9000 Series ACI-Mode Switches](#). Additional product documentation is listed in the "Related Documentation" section.

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

<https://www.cisco.com/c/en/us/support/cloud-systems-management/application-policy-infrastructure-controller-apic/tsd-products-support-series-home.html>

Table 1 shows the online change history for this document.

Table 1 Online History Change

Date	Description
September 21, 2015	Created the release notes for Release 1.1(3f).
September 24, 2015	In the Compatibility Information section, changed "Cisco AVS, Release 5.2(1)SV3(1.5a)" to "Cisco AVS, Release 5.2(1)SV3(1.5b)".
October 16, 2015	In the Compatibility Information section, added the supported ASA device package version. Also added information about AVS and DVS support with Layer 4 to Layer 7 service insertion or service chaining.
November 13, 2015	In the Known Behaviors section, added bug CSCuw81638.
December 3, 2015	In the "Installation Notes" section, fixed the .egg file URLs.
December 9, 2015	Fixed incorrect URLs to the documentation on cisco.com.
February 29, 2016	In the Compatibility Information section, added a link to the AVS Release Notes.
March 16, 2016	In the Installation Notes section, added mention that ACI with SCVMM or Windows Azure Pack only supports ASCII characters.
February 28, 2017	In the Usage Guidelines section, added: If the communication between the APIC and vCenter is impaired, some functionality is adversely affected. The APIC relies on the pulling of inventory information, updating vDS configuration, and receiving event notifications from the vCenter for performing certain operations.

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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 life cycle.

The *Cisco Application Centric Infrastructure Fundamentals* guide provides complete details about the ACI, including a glossary of terms that are used in the ACI.

Installation Notes

- For installation instructions, see the [Cisco ACI Fabric Hardware Installation Guide](#).
- For instructions on how to access the APIC for the first time, see the *Cisco APIC Getting Started Guide*.
- For the Cisco APIC Python SDK documentation, including installation instructions, see the *Cisco APIC Python SDK Documentation*.
- Two installation egg files are needed for installation. You can download these files from a running APIC from the URLs below.

The following file is the SDK:

- `http[s]://<APIC address>/cobra/_downloads/acimodel-1.1_3f-py.egg`

The following file includes the Python packages that model the Cisco ACI Management Information Tree:

- `http[s]://<APIC address>/cobra/_downloads/acicobra-1.1_3f-py2.7.egg`

Note: Installation of the SDK with SSL support on Unix/Linux and Mac OS X requires a compiler. For a Windows installation, you can install the compiled shared objects for the SDK dependencies using wheel packages.

Note: The model package depends on the SDK package; be sure to install the SDK package first.

- Cisco ACI with Microsoft System Center Virtual Machine Manager (SCVMM) or Microsoft Windows Azure Pack only supports ASCII characters. Non-ASCII characters are not supported. Ensure that English is set in the System Locale settings for Windows, otherwise ACI with SCVMM and Windows Azure Pack will not install. In addition, if the System Locale is later modified to a non-English Locale after the installation, the integration components might fail when communicating with the APIC and the ACI fabric.

Upgrading the APIC and Switches

Table 2 lists the supported APIC and switch upgrades. If you are upgrading from a release that is prior to the earliest release that is listed on the table, you must upgrade to the minimum recommended release before upgrading to this release. The following document provides the minimum recommended release:

https://www.cisco.com/c/en/us/td/docs/switches/datacenter/aci/apic/sw/recommended-release/b_Minimum_and_Recommended_Cisco_ACI_Releases.html

Note: APIC Image upgrades will be blocked by default if the target image is not in a supported upgrade path.

Table 2 Supported APIC and Switch Upgrades

From	To	Limitations	Recommended Procedure
1.1.(2h)	1.1(3f)	None	<ol style="list-style-type: none"> 1. Upgrade APICs. 2. After APICs are upgraded successfully, upgrade the switches using two or more maintenance groups.

From	To	Limitations	Recommended Procedure
1.1.(1j), 1.1.(1o), 1.1.(1r)	1.1(3f)	None	<ol style="list-style-type: none"> 1. Upgrade APICs. 2. After APICs are upgraded successfully, upgrade the switches using two or more maintenance groups.
1.o.(4o), 1.o.(4q)	1.1(3f)	None	<ol style="list-style-type: none"> 1. Upgrade APICs. 2. After APICs are upgraded successfully, upgrade the switches using two or more maintenance groups.

Downgrading the APIC and Switches

Note: APIC Image downgrades will be blocked by default if the target image is not in a supported downgrade path.

Table 3 lists the supported APIC and switch downgrades.

Note: APIC Image downgrades will be blocked by default if the target image is not in a supported downgrade path.

Table 3 Supported APIC and Switch Downgrades

From	To	Limitations	Recommended Procedure
1.1(3f)	1.1(1x)	None	<ol style="list-style-type: none"> 1. Downgrade APICs. 2. After APICs are downgraded successfully, downgrade the switches using two or more maintenance groups.
1.1(3f)	1.o(4o) and higher	None	<ol style="list-style-type: none"> 1. Downgrade APICs. 2. After APICs are downgraded successfully, downgrade the switches using two or more maintenance groups.
1.1(3f)	Any other release	None	You must perform a stateless downgrade. See the procedure below.

The following procedure performs a stateless downgrade:

Note: You must plan for a Fabric outage, as this procedure rebuilds the Fabric.

- 1 Export the Fabric configuration.
- 2 Run the "eraseconfig" command on the APIC controllers. This will reboot the controllers. Ensure that the controllers have been rebooted before moving on to step 3.
- 3 Run the "setup-clean-config.sh" script on the switch nodes and reload all of the switches. Steps 2 and 3 clear the configuration on the Fabric, making this a stateless downgrade.
- 4 Rediscover the Fabric.
- 5 Downgrade the Fabric to the desired release.
- 6 Run the "eraseconfig setup" command on the APIC controllers. This step is required so that the script can run additional commands that might be required for the version that is being used. The "eraseconfig setup" command will reload the APICs.

- 7 Run the "setup-clean-config.sh" script on the switch nodes and reload them.
- 8 Complete the initial setup script on the APIC controllers.
- 9 Import the Fabric configuration using the import "merge" mode.

Compatibility Information

- This release supports the hardware and software listed on the [ACI Ecosystem Compatibility List](#) and the software listed as follows:
 - Cisco NX-OS Release 11.1(3f)
 - Cisco AVS, Release 5.2(1)SV3(1.5b)

For more information about the supported AVS releases, see the AVS software compatibility information in the *Cisco Application Virtual Switch Release Notes* at the following URL:

<https://www.cisco.com/c/en/us/support/switches/application-virtual-switch/products-release-notes-list.html>
 - Cisco UCS Manager software Release 2.2(1c) or later is required for the Cisco UCS Fabric Interconnect and other components, including the BIOS, CIMC, and the adapter
- The breakout of 40G ports to 4x10G on the N9332PQ switch is not supported in ACI-Mode.
- To connect the N2348UPQ to ACI leaf switches, the following options are available:
 - Directly connect the 40G FEX ports on the N2348UPQ to the 40G switch ports on the N9332PQ switch
 - Break out the 40G FEX ports on the N2348UPQ to 4x10G ports and connect to the N9396PX or N9372PX switches
- Connecting the APIC (the controller cluster) to the ACI fabric requires a 10G interface on the ACI leaf. You cannot connect the APIC directly to the N9332PQ ACI Leaf.
- This release supports the following firmware:
 - 1.5(4e) CIMC HUU iso
 - 2.0(3i) CIMC HUU iso (recommended)
- The Cisco Application Virtual Switch (AVS) in either VLAN or VXLAN mode is not supported with Layer 4 to Layer 7 service insertion or service chaining. VMware vSphere Distributed Switch (VDS) is the only supported configuration.
- This release supports the partner packages specified here: <https://www.cisco.com/c/en/us/solutions/collateral/data-center-virtualization/application-centric-infrastructure/solution-overview-c22-734587.html>
- This release supports Adaptive Security Appliance (ASA) device package version 1.2.3.4.
- For information about APIC compatibility with UCS Director, see the appropriate *Cisco UCS Director Compatibility Matrix* document at the following URL:

<https://www.cisco.com/c/en/us/support/servers-unified-computing/ucs-director/products-device-support-tables-list.html>

Usage Guidelines

This section lists usage guidelines for the APIC software.

- The APIC GUI supports the following browsers:
 - Chrome version 35 (at minimum) on Mac and Windows

- Firefox version 26 (at minimum) on Mac, Linux, and Windows
- Internet Explorer version 11 (at minimum)
- Safari 7.0.3 (at minimum)

Note: Restart your browser after upgrading to release 1.1(3f).

Caution: A known issue exists with the Safari browser and unsigned certificates. Read the information presented here before accepting an unsigned certificate for use with WebSockets.

When you access the HTTPS site, the following message appears:

"Safari can't verify the identity of the website APIC. The certificate for this website is invalid. You might be connecting to a website that is pretending to be an APIC, which could put your confidential information at risk. Would you like to connect to the website anyway?"

To ensure that WebSockets can connect, you must do the following:

1. Click Show Certificate.
2. Select Always Trust in the three drop-down lists that appear.

If you do not follow the steps above, WebSockets will not be able to connect.

- The APIC GUI includes an online version of the Quick Start guide that includes video demonstrations.
- The infrastructure IP address range must not overlap with other IP addresses used in the fabric for in-band and out-of-band networks.
- The APIC does not provide IPAM services for tenant workloads.
- To reach the APIC CLI from the GUI: select System > Controllers, highlight a controller, right-click and select "launch SSH". To get the list of commands, press the escape key twice.
- In some of the 5-minute statistics data, the count of ten-second samples is 29 instead of 30.
- For the following services, use a DNS-based host name with out-of-band management connectivity. IP addresses can be used with both in-band and out-of-band management connectivity.
 - Syslog server
 - Call Home SMTP server
 - Tech support export server
 - Configuration export server
 - Statistics export server
- In-band management connectivity to the spine switches is possible from any host that is connected to the leaf switches of the Fabric, and leaf switches can be managed from any host that has IP connectivity to the fabric.
- When configuring an atomic counter policy between two endpoints, and an IP is learned on one of the two endpoints, it is recommended to use an IP-based policy and not a client endpoint-based policy.
- When configuring two Layer 3 external networks on the same node, the loopbacks need to be configured separately for both Layer 3 networks.
- All endpoint groups (EPGs), including application EPGs and Layer 3 external EPGs, require a domain. Interface policy groups must also be associated with an Attach Entity Profile (AEP), and the AEP must be associated with domains. Based on the association of EPGs to domains and of the interface policy groups to domains, the ports and VLANs that the EPG uses are validated. This applies to all EPGs including bridged Layer 2 outside and routed Layer 3 outside EPGs. For more information, see

Verified Scalability Limits

the *Cisco Fundamentals Guide* and the KB: *Creating Domains, Attach Entity Profiles, and VLANs to Deploy an EPG on a Specific Port* article.

Note: In the 1.0(4x) and earlier releases, when creating static paths for application EPGs or layer 2/layer 3 outside EPGs, the physical domain was not required. In this release, it is required. Upgrading without the physical domain will raise a fault on the EPG stating “invalid path configuration.”

- An EPG can only associate with a contract interface in its own tenant.
- User passwords must meet the following criteria:
 - Minimum length is 8 characters
 - Maximum length is 64 characters
 - Fewer than three consecutive repeated characters
 - At least three of the following character types: lowercase, uppercase, digit, symbol
 - Cannot be easily guessed
 - Cannot be the username or the reverse of the username
 - Cannot be any variation of “cisco”, “isco”, or any permutation of these characters or variants obtained by changing the capitalization of letters therein
- The power consumption statistics are not shown on leaf node slot 1.
- If the communication between the APIC and vCenter is impaired, some functionality is adversely affected. The APIC relies on the pulling of inventory information, updating vDS configuration, and receiving event notifications from the vCenter for performing certain operations.

Verified Scalability Limits

For the verified scalability limits, see the *Verified Scalability Guide* for this release:

<https://www.cisco.com/c/en/us/support/cloud-systems-management/application-policy-infrastructure-controller-apic/tsd-products-support-series-home.html>

New and Changed Information

This section lists the new and changed features in Release 1.1(3f) and includes the following topics:

- [New Software Features](#)
- [New Hardware Features](#)

New Software Features

[Table 4](#) lists the new software features in this release:

Table 4 New Software Features, Guidelines, and Restrictions

Feature	Description	Guidelines and Restrictions
Deployment Warning and Policy Usage Information	<p>This feature allows you to see where policies are deployed in the fabric and see details about the resources and other policies that are using the resources. You can configure this feature to display this information before you submit configuration changes. You can also display the information on-demand by choosing Show Usage from the policy windows in the GUI.</p> <p>See the <i>Cisco APIC Getting Started Guide</i> and the Online Help for more information.</p>	None.

New Hardware Features

This release supports no new hardware features.

Caveats

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

- [Open Caveats](#)
- [Resolved Caveats](#)
- [Known Behaviors](#)

Open Caveats

[Table 5](#) lists the open caveats in the Cisco APIC Release 1.1(3f) release. Click the bug ID to access the Bug Search tool and see additional information about the bug.

Table 5 Open Caveats in Cisco APIC Release 1.1(3f)

Bug ID	Description
CSCur36058	The switch disappears for several minutes from topology, firmware, and maintenance policies while being upgraded.
CSCuu49742	In Microsoft SCVMM, if a VM network is already attached and used by virtual machines, and if an admin changes the VLAN number of this VM network on SCVMM, the virtual machine VLAN information is not automatically updated on Hyper-V Host virtual machines.
CSCuv84834	When an APIC boots up without the keyring configuration, the default keyring is configured for HTTPS access. However, the localhost certificate is applied instead of default certificate.
CSCuw11670	Fault counts queries for the controller fabric node and fault class queries using rsp-subtree-include for the fabricNode class return incomplete fault count information.
CSCuw16683	A fault for prefix-entry-already-in-use is present when the fault is not expected.
CSCuw18244	A deployment query for an in-band endpoint group is not showing all in-band zones that are associated with the endpoint group.
CSCuw22254	An invalid path fault occurs when the same domain is attached to the selector domain and the domain is present on the override.
CSCuw27075	In the "Show Usage" table of the GUI, spine nodes are shown for an endpoint group to IP atomic counter policies.
CSCuw27454	The deployment query for dhcpRelayP sometimes returns nodes where the policy was previously deployed.
CSCuw27507	In the "Show Usage" table of the GUI, diagnostics policies applicable to leaf nodes are shown to be deployed on spine nodes as well, and vice versa.
CSCuw35070	If there are two or more primary IP addresses configured and if one of the primary IP addresses that is in use is deleted, then the deleted IP address is still used as the primary IP address. None of the remaining primary addresses are used.

Resolved Caveats

[Table 6](#) lists the resolved caveats in the Cisco APIC Release 1.1(3f) release. Click the bug ID to access the Bug Search tool and see additional information about the bug.

Table 6 Resolved Caveats in Cisco APIC Release 1.1(3f)

Bug ID	Description
CSCuv70029	A spine drops the Multiprotocol Border Gateway Protocol (MBGP) routes when it receives the prefixes that have its own fabric autonomous system number in the BGP AS-PATH attribute in the default VRF.

Known Behaviors

[Table 7](#) lists caveats that describe known behaviors in the Cisco NX-OS Release 1.1(3f) release. Click the Bug ID to access the Bug Search Tool and see additional information about the bug.

Table 7 Known Behaviors in Cisco APIC Release 1.1(3f)

Bug ID	Description
CSCu052668	The APIC does not validate duplicate IPs assigned to two device clusters. The communication to devices or the configuration of service devices might be affected.
CSCu079243	In some of the 5-minute statistics data, the count of ten-second samples is 29 instead of 30.
CSCu079250	The node ID policy can be replicated from an old appliance that is decommissioned when it joins a cluster.
CSCup47703	The DSCP value specified on an external endpoint group does not take effect on filter rules on the leaf switch.
CSCup79002	The hostname resolution of the syslog server fails on leaf and spine switches over in-band connectivity.
CSCup94070	After importing an exported configuration, graph instances are not created and L4-L7 packages are missing in the system.
CSCuq21360	Following a FEX or switch reload, configured interface tags are no longer configured correctly.
CSCur39124	Switches could get downgraded to a 1.0(1x) version if the imported configuration consists of a firmware policy with a desired version set to 1.0(1x).
CSCur48950	Some reported client endpoints are not present on the APIC during an upgrade.
CSCur71082	The APIC is rebooted using the CIMC power reboot. On reboot, the system enters into fsck due to a corrupted disk.
CSCus15627	The Cisco APIC Service (ApicVMMService) shows as stopped in the Microsoft Service Manager (services.msc in control panel > admin tools > services) after valid domain credentials are entered during installation or configuration of the service.
CSCut51929	The traffic destined to a shared service provider endpoint group picks an incorrect class Id (PcTag) and gets dropped.
CSCuu09236	Traffic from an external layer 3 network is allowed when configured as part of a vzAny (a collection of endpoint groups within a context) consumer.
CSCuu61998	The microsegment endpoint group is in the incorrect state after downgrading.
CSCuu64219	Downgrading the fabric starting with the leaf will cause faults such as policy-deployment-failed with fault code F1371.
CSCuw81638	The OpenStack metadata feature cannot be used with ACL integration with the Juno release (or earlier) of OpenStack due to limitations with both OpenStack and Cisco's ML2 driver.

Related Documentation

Related Documentation

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

<https://www.cisco.com/c/en/us/support/cloud-systems-management/application-policy-infrastructure-controller-apic/tsd-products-support-series-home.html>

Related Documentation

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