Release Notes for Cisco Network Plug and Play, Release 1.1x

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Contents

These release notes apply to the following software release of the Cisco Network Plug and Play Solution:

- General Availability Release 1.1

These release notes contain the following sections:

Introduction

The Cisco Network Plug and Play solution provides a simple, secure, unified, and integrated offering for enterprise network customers to ease new branch or campus device deployments or for provisioning updates to an existing network. The solution provides a unified approach to provision enterprise networks comprised of Cisco routers, switches, and wireless access point devices with a near zero touch deployment experience.

Supported Platforms and Software Requirements

The following tables list Cisco routers, switches, wireless access points, and software releases that support the Cisco Plug and Play IOS Agent and the Cisco Network Plug and Play Solution.

Table 1 Supported Cisco Switches

Platform	Models	Software Release (Minimum Supported)
Cisco Catalyst 2960 Series Switches	2960-C 2960-Plus 2960-S 2960-SF 2960-X 2960-XR	15.2.2E3, 15.2.3E2, 15.2.4E[1]
	2960-CX[2]	15.2.3E2, 15.2.4E[1]
Cisco Catalyst 3560 Series Switches	3560-C 3560-X	15.2.2E3
	3560-CX[2]	15.2.3E2, 15.2.4E[1]
Cisco Catalyst 3650 Series Switches	3650	3.6.3E, 3.7.2E, 16.1.1E
Cisco Catalyst 3750-X Series Switches	3750X	15.2.2E3, 15.2.4E[1]
Cisco Catalyst 3850 Series Switches	3850	3.6.3E, 3.7.2E, 16.1.1E
	3850-12X48U[2] 3850-12XS[2] 3850-16XS[2] 3850-24XS[2] 3850-32XS[2]	3.7.2E
Cisco Catalyst 4500 Series Switches	Supervisor 6-E/6L-E Supervisor 7-E/7L-E Supervisor 8-E	3.6.3E, 3.7.2E, 3.8.0E
Cisco Catalyst 4500-X Series Switches	4500X-16, 32	3.6.3E, 3.7.2E, 3.8.0E
Cisco Catalyst 4900 Series Switches	4900M 4948E	15.2.2E3, 15.2.3E2, 15.2.4E[1]
Cisco Industrial Ethernet 2000 Series Switches	IE2000	15.2.2E3, 15.2.3E2, 15.2.4EA[1]
Cisco Industrial Ethernet 3000 Series Switches	IE3000	15.2.2E3, 15.2.3E2, 15.2.4EA[1]

1. The non-VLAN 1 feature is not supported on release 15.2.4E.
2. Limited feature support: Trustpool support for devices with smaller NVRAM space is only by using the DHCP options T and Z.

Table 2 on page 3 lists software releases that have limited feature support. For software releases not listed, all features are supported.

Table 2 Limited Feature Support by Software Version for Switches

Software Release	Feature					
	DHCP Option T		DHCP Option 60	Non-VLAN1	SUDI	Trustpool
03.06.03.E	4500	–	–	–	–	Yes[1]
	3850					
03.07.02.E	4500	Yes	–	–	–	Yes[1]
	3850	–				Yes[1]
03.06.04.E	Yes		Yes	Yes[2]	Yes	Yes[1]
03.07.03.E	Yes		Yes	Yes[3]	Yes[1]	Yes[1]
03.08.00.E	Yes		–	–	Yes[1]	Yes[1]
03.08.01.E	Yes		Yes	Yes[3]	Yes[1]	Yes[1]
Denali 16.1.1	Yes		Yes	Yes[1]	Yes[1]	Yes[1]
Denali 16.1.2	Yes		Yes	Yes[2]	Yes[1]	Yes[1]
Denali 16.2.1	Yes		Yes	Yes[2]	Yes[1]	Yes[1]

1. The following caveats apply: CSCuv42560, CSCuw63034, CSCuy16820, CSCuy33129. For details, see the section Release 1.1 Open Caveats, page 8.
2. The following caveat applies: CSCux54515.
3. The following caveat applies: CSCux52544.

Table 3 Supported Cisco Routers

Platform	Models	Software Release (Minimum Supported)
Cisco 800 Series Routers	819 829 866 867 881 886 887 888 891 892 896 897 898 899	15.5(3)M
Cisco 1900 Series Integrated Services Routers	1921 1941	15.5(3)M
Cisco 2900 Series Integrated Services Routers	2901 2911 2921 2951	15.5(3)M
Cisco 3900 Series Integrated Services Routers	3925 3925E 3945 3945E	15.5(3)M
Cisco 4000 Series Integrated Services Routers	4321 4331 4351 4431 4451-X	15.5(3)S
Cisco ASR 1000 Series Aggregation Services Routers	ASR1001 ASR1001-X ASR1002 ASR1002-X ASR1004 ASR1006 ASR1013	15.5(3)S
Cisco Cloud Services Router	CSR 1000V	15.5(3)S

Table 4 Supported Cisco Wireless Access Points

Platform	Models	Software Release
Cisco Aironet 700 Series	702i 702w	8.2
Cisco Aironet 1600 Series	1602e 1602i	8.2
Cisco Aironet 1700 Series	1702i	8.2
Cisco Aironet 2600 Series	2602e 2602i	8.2

Table 4 Supported Cisco Wireless Access Points (continued)

Platform	Models	Software Release
Cisco Aironet 2700 Series	2702e 2702i	8.2
Cisco Aironet 3600 Series	3602e 3602i 3602p	8.2
Cisco Aironet 3700 Series	3702e 3702i 3702p	8.2

Note: Only official software releases obtained from the Cisco.com software download website are supported for image deployment. Engineering builds are not supported.

SUDI Support

The Secure Unique Device Identifier (SUDI) feature that allows secure device authentication is available on the following platforms:

- Cisco Routers:
  - 819, with software release 15.5(3)M1
  - 4000 Series, with software release 15.5(3)S1
- Cisco Switches:
  - 3850 Series, with software release 3.6.3E or 16.1.2E
  - 3650 Series and 4500 Series with Supervisor 7-E/8-E, with software releases 3.6.3E, 3.7.3E, or 16.1.2E

Upgrade and Downgrade Support

Upgrade Support

Table 5 on page 6 lists the supported upgrade paths for each supported release.

Table 5 Upgrade Paths Supported by Switch Software Versions

From Software Version	To Software Version
03.06.03.E	03.06.04.E 03.07.02.E 03.07.03.E
03.06.04.E	03.07.02.E 03.07.03.E Denali 16.1.1 Denali 16.1.2 Denali 16.2.1
03.07.02.E	03.07.03.E
03.07.03.E	Denali 16.1.1 Denali 16.1.2 Denali 16.2.1
Denali 16.1.1	Denali 16.1.2 Denali 16.2.1
Denali 16.1.2	Denali 16.2.1[1]

1. The following caveat applies: CSCux86052. For details, see the section Release 1.1 Open Caveats, page 8.

Downgrade Support

Table 6 on page 6 lists the supported downgrade paths for each supported release.

Table 6 Downgrade Paths Supported by Switch Software Versions

From Software Version	To Software Version
03.06.04.E	03.06.03.E
03.07.02.E	03.06.03.E 03.06.04.E
03.07.03.E	03.06.03.E 03.06.04.E 03.07.02.E
Denali 16.1.1	03.06.04.E 03.07.03.E
Denali 16.1.2	03.06.04.E 03.07.03.E Denali 16.1.1
Denali 16.2.1	03.06.04.E 03.07.03.E Denali 16.1.1[1] Denali 16.1.2

1. The following caveat applies: CSCux86052. For details, see the section Release 1.1 Open Caveats, page 8.

Limitations

The bulk import function is similar to adding new provisioning rules that can set a device to the pending state. When you export the project and device database, the application displays the correct device state. If you then import the saved database, the devices must contact the APIC-EM controller again to return to the provisioned state because the bulk import feature restores only the device provisioning rules and does not restore the state of devices.

Mobile App Limitations

Note the following considerations when using the Cisco Plug and Play Mobile App:

- After disconnecting the console cable from the network device, if you want to connect it to a different network device, you must first manually refresh the mobile app to reflect the correct status when connecting to the new device.
- If you have an iOS mobile device with a Redpark cable and are deploying multiple network devices, after you are done with one device, you must unplug the Redpark cable from both your mobile device and the network device to close the serial connection. If you do not disconnect the cable from your mobile device, the serial session is not closed and the wrong configuration could be deployed on the next device.

Sizing Guidelines

The Cisco Network Plug and Play application on APIC-EM can support the following:

- A maximum of 10000 devices pre-provisioned in the Cisco Network Plug and Play application for APIC-EM, of which a maximum of 4000 can be router and switch devices and the remainder can be wireless access point devices
- A maximum of 50 devices of all types simultaneously contacting the server and being provisioned
- A maximum of 200 unclaimed devices of all types in the Cisco Network Plug and Play application for APIC-EM

See the *Release Notes for Cisco Application Policy Infrastructure Controller Enterprise Module* for APIC-EM device support guidelines.

Upgrading a Cisco Catalyst 3650 or 3850 Series Switch to Cisco IOS XE Denali 16.1.1 While Provisioning

This section applies if you have a Cisco Catalyst 3650 or 3850 Series switch with a software release of Cisco IOS XE 3.6.3, 3.7.2, or earlier, it is in a factory default state (unprovisioned in the network), and at the same time as provisioning you want to upgrade it to Cisco IOS XE Denali 16.1.1E.

Such devices with older software releases fail the normal upgrade process to release 16.1.1E, however, you can use the Cisco Network Plug and Play application to do the upgrade while provisioning the device, by using the following steps:

Prerequisite: The Cisco network device to be provisioned is in a factory default state and can be auto-booted with the 16.1.1E image. If you are using a network device that was previously configured or is in an unknown state, see the reset details in the Solution Guide for Cisco Network Plug and Play.

1. Put the Cisco IOS XE Denali 16.1.1E image on a TFTP server that is accessible to the device you are upgrading.
2. Create a configuration file for the device and add the following lines to the end of the file, which will upgrade the software and reload the switch:

```
ip tftp block 8192
do software install file tftp://ip-address/dir/filename new force
```

```
do reload in 1
end
```

The tftp URL must include the IP address of the TFTP server (*ip-address*), the directory in which the image resides (*dir*), and image filename (*filename*).

3. Upload the configuration file in the Cisco Network Plug and Play application, by using the Upload button in the Configurations tab.
4. Add the configuration file to the device information, either in the Projects tab (for a new device that you are preprovisioning) or in the Unplanned Devices tab (for an unclaimed device that is already installed but not yet provisioned).
5. If the device is unclaimed, click Claim to provision it, or if you are preprovisioning a device that is not yet installed, it is automatically provisioned when it is installed. Note that it takes about 25 minutes for the upgrade to complete and there is minimal console output from the device during the process.
6. Verify that device status is Provisioned in the Cisco Network Plug and Play GUI.
7. Verify that the device is successfully deployed by checking the log messages by clicking on the device serial number. Look for the message, “Device was successfully deployed!!”
8. Verify that the installed software release is Denali 16.1.1E by using the **show version** command on the device.

Caveats

Release 1.1 Resolved Caveats

Caveat ID Number	Headline
CSCut25533	PnPA: non-vlan CLI should only apply to newly bootup devices
CSCuv23097	Trustpool fails on HA setup as certificates dont get copied over.
CSCuw15272	PNP non-vlan 1 zero-touch upgrade is not working
CSCuw75002	ISR3945 router stuck in non-terminal state PKI_INSTALL_REQUESTED
CSCuw83101	CSR interface admin shutdown during PnP DHCP discovery + CD/DVD drive
CSCux37557	Polaris Pnp: need to support upgrade btw Nova and Polaris using APIC-EM

Release 1.1 Open Caveats

Caveat ID Number	Headline
CSCuu09487	" VTP mode Server" related config does not get applied from a saved file.
CSCuu92950	Continuous TFTP requests for config while PnP is in progress
CSCuv03573	Nonstop Autoinstall message after PnP server reloads router w/ new image
CSCuv19160	Config lock mode during redundancy prevents PnP redirection.
CSCuv42560	Trustpool bundle fails to deploy on devices with smaller nvram space.
CSCuw44673	Traceback:Sleep with expired managed timer -Process=" XEP_pnp-zero-touch"

CSCuw83141	PnP Image Upgrade failing on CSR 1000V
CSCux52544	PnP Fails to Initiate with Non-VLAN1 Feature Configured
CSCux54515	Cat3k Edison shows method 'manual' instead of DHCP.
CSCux86052	SMANRP-3-CMDCONNECT: Connection to local interactive relay failed
CSCux95051	Misleading SMI unsupported message should be removed from device history
CSCuy16260	After changing an unsupported prj name, create option on APIC-EM greyed.
CSCuy19118	PNP server - Edit image failed when adding many platform/pids to image.
CSCuy26834	PnP discovery not able to bypass config wizard on ASR1K platforms
CSCuy33129	G2 routers not able to download Trustpool due to nvram space

Related Documentation

- Solution Guide for Cisco Network Plug and Play—Solution Guide for the Cisco Network Plug and Play solution.
- Configuration Guide for Cisco Network Plug and Play on Cisco APIC-EM—Describes how to use the Network Plug and Play application in the APIC-EM to configure Cisco network devices.
- Cisco Open Plug-n-Play Agent Configuration Guide—Describes how to configure the Cisco Open Plug-n-Play Agent software application that runs on a Cisco IOS or IOS-XE device.
- Mobile Application User Guide for Cisco Network Plug and Play—Describes how to use the Cisco Network Plug and Play mobile application.
- Cisco Application Policy Infrastructure Controller Enterprise Module Deployment Guide—Describes how to deploy and troubleshoot the Cisco APIC-EM.
- Cisco Application Policy Infrastructure Controller Enterprise Module Configuration Guide—Describes how to configure settings for the Cisco APIC-EM.
- Release Notes for the Cisco Application Policy Infrastructure Controller Enterprise Module—Release Notes for the Cisco APIC-EM.
- *Cisco APIC-EM Quick Start Guide*—Guide to getting started with the APIC-EM and including a list of related documentation (available in the APIC-EM GUI).
- Open Source Used In Cisco APIC-EM—List of open source code used in the Cisco APIC-EM.
- *Open Source Used In Cisco IWAN App Release 1*—List of open source code used in the Cisco IWAN and Cisco Network Plug and Play applications for APIC-EM.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation*.

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the What's New in Cisco Product Documentation RSS feed. The RSS feeds are a free service.