Readme for Wireless Technology Package 1.0.1 for Cisco Prime Infrastructure 2.2.3

This Readme provides information on installing and upgrading, new feature and enhancements, bug fixes, and additional documentation for Cisco Prime Infrastructure, Release 2.2.3.

This document contains the following sections:

System Requirements

Install the Wireless Technology Package on a server running the Cisco Prime Infrastructure, version 2.2.3. If you are using Cisco Prime Infrastructure 2.2, apply the Cisco Prime Infrastructure 2.2.3 Maintenance Release before applying the Wireless Technology Package.

You can download the Cisco Prime Infrastructure 2.2.3 Maintenance Release fromHome > Products > Cloud and Systems Management > Routing and Switching Management > Network Management Solutions > Prime Infrastructure > Prime Infrastructure 2.2 > Prime Infrastructure Patches-2.2.3.

For more information on server and web client requirements, see the System Requirements section of the *Cisco Prime Infrastructure 2.2 Quick Start Guide.*

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Wireless Technology Package Installation

Installation of Prime Infrastructure 2.2.3 is a pre-requisite for installing Wireless Technology Package 1.0.1.

Wireless Technology Package 1.0.1 cannot be installed on any previous versions of same technology package.

Wireless Technology Package 1.0.1 supports the following installation scenarios:

- Prime Infrastructure 2.2 -> Prime Infrastructure 2.2.1 -> Prime Infrastructure 2.2.2 -> Prime Infrastructure 2.2.3 -> Wireless Technology Package 1.0.1.
- Prime Infrastructure 2.2 -> Prime Infrastructure 2.2.3 -> Wireless Technology Package 1.0.1.
- Prime Infrastructure 2.2 -> Prime Infrastructure 2.2.1 -> Data Center Technology Package 1.0.0 -> Prime Infrastructure 2.2.2 -> Prime Infrastructure 2.2.3 -> Wireless Technology Package 1.0.1.
- Prime Infrastructure 2.2 -> Prime Infrastructure 2.2.1 -> Prime Infrastructure 2.2.2 -> Prime Infrastructure 2.2.3 -> Data Center Technology Package 1.0.1-> Wireless Technology Package 1.0.1.
- Prime Infrastructure 2.2 -> Prime Infrastructure 2.2.3 -> Data Center Technology Package 1.0.1 -> Wireless Technology Package 1.0.1.

Note For any additional device package and dependent UBF, refer the respective Release Notes.

The following sections explain how to install the Technology Package.

Before You Begin Installing the Wireless Technology Package

Caution **Once you install this package, you cannot uninstall or remove it.**

Since the package is not removable, it is important to have a way to revert your system to the original version in case hardware or software problems cause the package installation to fail.

To ensure you can do this, take a backup of your system before downloading and installing this UBF package.

To revert to the original Cisco Prime Infrastructure 2.2.3 Maintenance Release installation, follow these steps:

1. Reinstall Prime Infrastructure 2.2 from an OVA or ISO distribution and install Cisco Prime Infrastructure 2.2.3 Maintenance Release.
2. Restore the data from the backup that you made before applying the package.

Similarly, if you are running Cisco Prime Infrastructure 2.2.3 Maintenance Release in a Virtual Machine (VM) and your organization permits taking VM snapshots, use the VMware client to take a VM snapshot before applying this package. You can store the snapshot in an external storage repository, and restore from the snapshot if the package is unsuccessful.

If you are installing the package as part of a High Availability (HA) implementation, you have to ensure that the network links between the two servers provide maximum bandwidth and low latency throughout the package installation. For more information, see Troubleshooting Package Installation in High Availability Implementations section.

Installing the Wireless Technology Package from Cisco Site

Step 1 Log in to the Prime Infrastructure 2.2.3 server.

Step 2 Choose **Administration > Software Update**.

Step 3 Click **Download**.

Step 4 Log in with your cisco.com credentials and click **Show Details** in **Prime Add-Ons** pane to view the updates.

Step 5 Click **Download** corresponding to the wireless technology package 1.0.1 file name ca_technology_package-2.1.0.0.41.ubf.

Step 6 Click **Install** to install the Technology Package.

Step 7 Restart the Cisco Prime Infrastructure server as explained in Restarting Prime Infrastructure in *Cisco Prime Infrastructure 2.2 Administration Guide* to complete the installation process.

Step 8 You can verify the package installation from Prime Infrastructure Login page under Prime Add-Ons by hovering your mouse over the version and also by logging into the server and choosing **Administration > Software Update**. You should see a listing for the package in the **Updates** tab, with "Installed" in the **Status** column.

Installing the Wireless Technology Package from Local Storage

Step 1 Download the Wireless Technology Package **ca_technology_package-2.1.0.0.41.ubf** from Home > Products > Cloud and Systems Management > Routing and Switching Management > Network Management Solutions > Prime Infrastructure > Prime Infrastructure 2.2 > Prime Infrastructure Add-ons and save the package file in your local storage.

Step 2 Log in to Prime Infrastructure 2.2.3 server.

Step 3 Choose **Administration > Software Update**.

Step 4 Click **Upload** and browse to the location where you have saved the package file. Click **OK** to upload the file.

Step 5 In the **Status of Updates** pane, click the **Files** tab and check whether **ca_technology_package-2.1.0.0.41.ubf** is listed under **FileName** column.

Step 6 In the **Prime Add-Ons** pane, click **Install**. You will see a popup message indicating the manual restart of Prime Infrastructure. Click **Yes** for successful installation.

Step 7 Restart the server by first executing the **ncs stop** command and then the **ncs start** command, as explained in Restarting Prime Infrastructure in *Cisco Prime Infrastructure 2.2 Administration Guide*.

Step 8 You can verify the package installation from Prime Infrastructure Login page under Prime Add-Ons by hovering your mouse over the version and also by logging into the server and choosing **Administration > Software Update**. You should see a listing for the package in the **Updates** tab, with "Installed" in the **Status** column.

Installing the Technology Package in High Availability Mode

Download the Wireless Technology Package **ca_technology_package-2.1.0.0.41.ubf** from Home > Products > Cloud and Systems Management > Routing and Switching Management > Network Management Solutions > Prime Infrastructure > Prime Infrastructure 2.2 > Prime Infrastructure Add-ons and save the package file in your local storage.

To install the downloaded Wireless Technology Package **ca_technology_package-2.1.0.0.41.ubf** in High Availability mode follow the below steps:

- Make sure you have completed the recommended preparation steps given in Before You Begin Installing the Wireless Technology Package.
- If your current Prime Infrastructure implementation has High Availability (HA) servers that are not at the same patch level, see Patching Paired High Availability Servers in *Cisco Prime Infrastructure 2.2 Administration Guide*.
- If you are setting up a new Prime Infrastructure High Availability implementation and your new servers are not at the same patch level, see Patching New High Availability Servers in *Cisco Prime Infrastructure 2.2 Administration Guide*.

Troubleshooting Package Installation in High Availability Implementations

Users who apply this package in a High Availability (HA) implementation may experience difficulties if the network links between the two servers offer low bandwidth and high latency. In particular, this kind of low throughput can cause the post-package restart and re-registration to take far longer than normal. In most cases, simply waiting longer will fix the problem with no intervention. In few cases, continued or intermittent throughput problems can cause complete failure. If you believe this has occurred, contact Cisco TAC.

If you are unable to verify that the package has been applied to a server, or one or both of the servers fail to restart properly after the package installation, you may need to re-image the server as explained in Before You Begin Installing the Wireless Technology Package.

In all cases, you can use the **backup-logs** command on one or both servers to get information on the source of the failure. For more information, see backup-logs in *Command Reference Guide for Cisco Prime Infrastructure 2.2.*

Supported Devices

This Wireless Technology Package supports the following device platforms in small, large and centralized networks:

Table 1 Supported Devices for Wireless Technology Package 1.0.1 for Prime Infrastructure 2.2.3

Platform	System Mode	IOS-XE Software Version	Mobile Agent (MA)	Mobile Controller (MC)	Guest Anchor (GA)
Catalyst 3650/3850	Standalone and StackWise	IOS-XE 3.7.x	Yes	Yes	
Catalyst 3850 Fiber	Standalone and StackWise (can be deployed as both mobility agent and mobility controller.)	IOS-XE 3.7.x		Yes	
Catalyst 4500E – Sup8E	Single and Dual-Sup (Non-VSS Mode)	IOS-XE 3.7.x	Yes	Yes	
CT5760	Standalone and StackWise	IOS-XE 3.7.x		Yes	Yes

For more details, refer http://www.cisco.com/c/dam/en/us/td/docs/net_mgmt/prime/infrastructure/2-2/supported/devices/pi22-supported-devices-list.xlsx

Note For any questions related to Cisco Meraki Network devices, contact the Cisco Meraki Support team at https://meraki.cisco.com/support/.

New Feature and Enhancements

This release supports the following new features and enhancements:

- Converged Access Template based Workflow Deployment
- Enhanced Guided Workflow for Wireless Deployment
- Monitoring Dashlet for Unreachable MA-MC CAPWAP Tunnels
- Support for Cisco Meraki Devices

Converged Access Template based Workflow Deployment

Prerequisites

This section describes the prerequisites for Layer 2, Layer 3, and Server configurations for Converged Access template based workflow deployment.

Prerequisites for Layer 2 Configuration

- Layer 2 network in branch, campus and demilitarized zone (DMZ) must be present before using Converged Access workflows:
  - Wireless Management VLAN
    - Create VLAN ID in database.
    - Assign network wide common or unique VLAN name.
    - Associate VLAN to AP ports.
  - Wireless Client VLAN

  - Create VLAN ID in database.
  - Assign network wide common VLAN name.
    - Guest Client VLAN
  - Create VLAN ID in database of Guest Anchor Wireless LAN Controller (WLC).
  - VLAN must be common on all Guest Anchor.
- Enable DHCP Snooping and Trust settings on Wireless Client VLANs.
- Allow wireless management and wireless client VLAN on L2 Trunk ports of switches and upstream L2/L3 devices (Router/Switch).

Prerequisites for Layer 3 Configuration

- Layer 3 gateway configuration in Branch, Campus and DMZ must be present before using Converged Access workflows:
  - Layer 3 Interfaces—SVI/Sub-Interface.
  - DHCP Configuration—Relay or Local Pool.
  - Route Advertisement
- IP default-gateway on Catalyst switches and 5760 Guest Anchor or WLC.

Prerequisites for Server Configuration

- Cisco Prime Infrastructure
  - All network-wide catalyst switches and 5760 WLCs must be configured with SNMP.
  - Programmed in Cisco Prime Infrastructure Device Management
  - Link Cisco Prime Infrastructure with Cisco ISE engine as external server to centrally monitor end-to-end client connectivity and policy enforcement details.
- Cisco ISE/ACS
  - All network devices including catalyst switches and Guest Anchor WLC must be configured in Cisco ISE/ACS to enable centralized policy engine function.
  - No AAA configuration required on network devices. Automated using Cisco Prime Infrastructure workflows.
- DHCP Server—Internal or external DHCP server must be preconfigured with appropriate pool settings for wireless clients.
- DNS Server—must be preconfigured with appropriate name-lookup process to successfully connect the network.

The converged access template based workflow deployment supports 5760, 3650 and 3850 platforms and can be deployed in small, large and centralized networks.

Step 1 Choose **Services > Converged Access**.

Step 2 Click **Next** to choose the configuration.

Step 3 From the **Select Deployment Model** drop-down list, choose any one of the following options:

- IOS-XE Controller - Small Network
- IOS-XE Controller - Large Network

- IOS-XE Centralized Wireless Network

Step 4 Click **Next** to choose the devices to be deployed.

Step 5 Choose the devices and click **Next** to apply the selected network configuration.

The selected device will be listed out in the left pane and in the right pane you can configure the templates by entering the values for the WLANs, Guest WLAN, Security, and Wireless Management. For more details, see Converged Access Template Field Descriptions.

Step 6 Click **Apply** and then **Next** to view the confirmation screen.

The confirmation screen allows you to view the device configuration information before deployment.

Converged Access Template Field Descriptions

This section contains the field descriptions for converged access template.

Table 2 WLAN Field Descriptions

Field	Description
SSID	Name of the wireless LAN.
ID	Wireless LAN ID (1 through 16).
Pre-Shared Key	Wi-Fi Protected Access Pre-Shared Key (WPA2-PSK) is a security mechanism used to authenticate and validate users on a wireless LAN (WLAN) or Wi-Fi connection. The value must be alphanumeric and at least 8 characters long.
Client VLAN Name	Name of the client VLAN. Can be integer or alphanumeric.

Table 3 Guest Controller Field Descriptions

Field	Description
Anchor Controller IP	Wireless management IP of Guest Anchor device.
Anchor Group Name	Group name of Anchor device.
Foreign Controller	Wireless management IP of controller in which Guest Anchor device is associated.

Table 4 Security Field Descriptions

Field	Description
Server Protocol	Remote Authentication Dial In User Service (RADIUS) protocol.
Server IP	IP address of the RADIUS server.
Server Key	Password. Can be integer or alphanumeric.

Table 5 Application Services Field Descriptions

Field Name	Description
Netflow Collectors (IP:Port)	IP—The IP address of the Prime Infrastructure server. Port—The port on which the NetFlow monitor will receive the exported data. Use the default 9991 port unless you have a special need to override it. Example: 172.20.114.251:9991
WLAN-1 SSID Bandwidth(%)	Specify the maximum bandwidth(%) allowed for first WLAN.
WLAN-2 SSID Bandwidth(%)	Specify the maximum bandwidth(%) allowed for second WLAN.
WLAN-3 SSID Bandwidth(%)	Specify the maximum bandwidth(%) allowed for third WLAN.
Guest SSID Bandwidth(%)	Specify the maximum bandwidth(%) allowed for Guest WLAN.

Table 6 Wireless Mobility Field Descriptions

Field Name	Description
Role	Mobility Controller or Mobility Agent.
Controller IP	Wireless Management IP of Controller device.
Switch Peer Group Name	Peer group name in which the Agent is added.
Mobility Agent IP(s)	Wireless Management IP of Mobility Agent devices. If you are entering more than one IP addresses, use semicolon to separate the IP addresses.
Peer Controller IP(s)	Wireless Management IP of peer controller device. If you are entering more than one IP address then use semicolon to separate the IP addresses.
RF Group Name	Empty if role is Agent.

Table 7 Wireless Management Field Descriptions

Field Name	Description
VLAN ID	VLAN ID of the selected device.
IP	Wireless management IP of the selected device.
Subnet mask	Subnet mask allocated to the selected device.

Enhanced Guided Workflow for Wireless Deployment

This technology package provides an enhanced guided workflow for configuring the wireless devices.

Step 1 Choose **Configuration > Plug and Play > Initial Device setup**.

Step 2 Click **Next** to assign location to new devices.

Step 3 Choose a location from **Add these devices to the location** drop-down list and Click **Next**.

Step 4 Choose **Add wireless features to my device(s)** from the **I would like to** drop-down list.

Step 5 (optional) Check the **I would like to configure my guest access as part of my wireless configuration** check box.

Step 6 Choose **Create a new Mobility Group** or any configured mobility group from the **Mobility Group** drop-down list and click **Next**.

Step 7 Configure the selected devices as Mobility Controller/Mobility Agent or delete the Mobility Controller/Mobility Agent from the Mobility group, and click **Next**.

Step 8 Enter the wireless parameter values for the new devices and click **Next**. You cannot change the wireless parameter values of the preconfigured devices.

Step 9 Click **Next** to add secure wireless configuration details for WLAN connectivity.

Step 10 If you have selected Guest Access in Step 5, provide the Guest WLAN details.

Step 11 Click **Next** to view the wireless device configuration before deployment.

Monitoring Dashlet for Unreachable MA-MC CAPWAP Tunnels

You can add a new Unreachable MA-MC CAPWAP Tunnels dashlet in **Overview > General** dashboard and **Performance > Site** dashboards, for more details see, Adding Dashlets in *Cisco Prime Infrastructure User Guide 2.2.* The Unreachable MA-MC CAPWAP Tunnels dashlet displays the unreachability status between the mobility agent and mobility controller.

Support for Cisco Meraki Devices

This technology package provides a single pane of glass visibility for both Cisco and Cisco Meraki devices. You can view both Cisco wireless network and Cisco Meraki network at the same time.

The following features are supported in this technology package:

- Discovery of Cisco Meraki devices
- Inventory Collection
- Device Reachability (Up/ Down)
- Client Count

Open Caveats

Table 8 lists the Open Caveats in Wireless Technology Package.

Click the identifier to view the impact and workaround for the caveat. This information is displayed in the Bug Search Tool. You can track the status of the open caveats using the Bug Search Tool.

Table 8 Open Caveats

Bug ID	Description
CSCut04087	Restore of Prime Infrastructure 1.4.x/2.1.x backup on Wireless Technology Package is not supported. However, these restore paths are not blocked in Wireless Technology Package 1.0.1.
CSCut11597	Device selection happens in Flex Grid only when we click exactly on check box.
CSCut34495	Prime Infrastructure 2.2 does not show full client attributes

Related Documentation

For information on additional Cisco Prime Infrastructure documentation, see Cisco Prime Infrastructure 2.2 Documentation Overview and Cisco Prime Infrastructure Release Notes 2.2.3.

Note This document has hyperlinks to related Cisco Prime Infrastructure 2.2 documents. If you are unable to view any specific section, clear your browser cache and try again.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation* at: http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html.

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