



## Overview

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# About the Cisco Application Policy Infrastructure Controller Enterprise Module (APIC-EM)

The Cisco Application Policy Infrastructure Controller - Enterprise Module (APIC-EM) is Cisco's Software Defined Networking (SDN) Controller for Enterprise Networks (Access, Campus, WAN and Wireless).

The platform hosts multiple applications (SDN apps) that use open northbound REST APIs that drive core network automation solutions. The platform also supports a number of south-bound protocols that enable it to communicate with the breadth of network devices that customers already have in place, and extend SDN benefits to both greenfield and brownfield environments.

The Cisco APIC-EM platform supports both wired and wireless enterprise networks across the Campus, Branch and WAN infrastructures. It offers the following benefits:

- Creates an intelligent, open, programmable network with open APIs
- Saves time, resources, and costs through advanced automation
- Transforms business intent policies into a dynamic network configuration
- Provides a single point for network wide automation and control

The following table describes the features and benefits of the Cisco APIC-EM.

**Table 1: Cisco APIC Enterprise Module Features and Benefits**

Feature	Description
Network Information Database	The Cisco APIC-EM periodically scans the network to create a “single source of truth” for IT. This inventory includes all network devices, along with an abstraction for the entire enterprise network.

Feature	Description
Network topology visualization	The Cisco APIC-EM automatically discovers and maps network devices to a physical topology with detailed device-level data. The topology of devices and links can also be presented on a geographical map. You can use this interactive feature to troubleshoot your network.
EasyQoS application	The EasyQoS application abstracts away the complexity of deploying Quality of Service across a heterogeneous network. It presents users with a workflow that allows them to think of QoS in terms of business intent policies that are then translated by Cisco APIC-EM into a device centric configuration.
Cisco Network Plug and Play (PnP) application	The Cisco Network PnP application is one of the components in the Cisco Network PnP solution. The Cisco Network PnP solution extends across Cisco's enterprise portfolio. It provides a highly secure, scalable, seamless, and unified zero-touch deployment experience for customers across Cisco routers, switches and wireless access points.
Cisco Intelligent WAN (IWAN) application	The separately licensed IWAN application for APIC-EM simplifies the provisioning of IWAN network profiles with simple business policies. The IWAN application defines business-level preferences by application or groups of applications in terms of the preferred path for hybrid WAN links. Doing so improves the application experience over any connection and saves telecom costs by leveraging cheaper WAN links.
Cisco Active Advisor	The Cisco Active Advisor application for APIC-EM offers personalized life cycle management for your network devices by keeping you up-to-date on: <ul style="list-style-type: none"> <li>• End-of-life milestones for hardware and software</li> <li>• Product advisories, including Product Security Incident Response Team (PSIRT) bulletins and field notices</li> <li>• Warranty and service contract status</li> </ul>
Cisco SD-Bonjour	The Cisco SD-Bonjour application provides controller functions in the network. It enables discovery and distribution of policy-based Cisco SD-Bonjour services, independent of network boundaries.
Cisco Integrity Verification	The Cisco Integrity Verification (IV) application provides automated and continuous monitoring of network devices, noting any unexpected or invalid results that may indicate compromise. The objective of the Cisco IV application is early detection of the compromise, so as to reduce its impact. The Cisco IV application operates within the Cisco Application Policy Infrastructure Controller Enterprise Module (APIC-EM) as a beta version for this release.

Feature	Description
Cisco Remote Troubleshooter	<p>The Cisco Remote Troubleshooter application uses the Cisco IronPort infrastructure to create a tunnel that enables a support engineer to connect to an APIC-EM cluster and troubleshoot issues with your system. The app uses outbound SSH to create a secure connection to the cluster through this tunnel.</p> <p>As an administrator, you can use the Remote Troubleshooter application to control when a support engineer has access to a particular cluster and for how long (since a support engineer cannot establish a secure tunnel on their own). You will receive indication that a support engineer establishes a remote access session, and you can end a session at any time by disabling the tunnel they are using.</p>
Public Key Infrastructure (PKI) server	The Cisco APIC-EM provides an integrated PKI service that acts as Certificate Authority (CA) or sub-CA to automate X.509 SSL certificate lifecycle management. Applications, such as IWAN and PnP, use the capabilities of the embedded PKI service for automatic SSL certificate management.
Path Trace application	The path trace application helps to solve network problems by automating the inspection and interrogation of the flow taken by a business application in the network.
High Availability (HA)	HA is provided in N+ 1 redundancy mode with full data persistence for HA and Scale. All the nodes work in Active-Active mode for optimal performance and load sharing.
Back Up and Restore	The Cisco APIC-EM supports complete back up and restore of the entire database from the controller GUI.
Audit Logs	The audit log captures user and network activity for the Cisco APIC-EM applications.

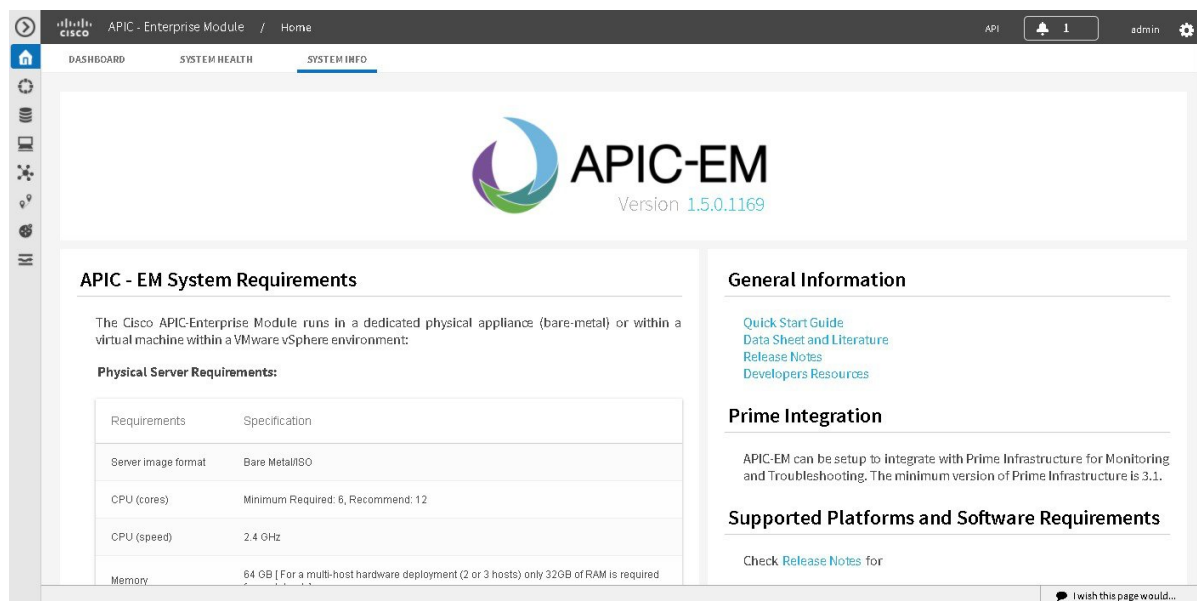
## Logging into the Cisco APIC-EM

You access the Cisco APIC-EM GUI by entering its network IP address in your browser. The IP address was configured for the Cisco APIC-EM network adapter during the initial setup using the configuration wizard. This IP address connects to the external network.

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- Step 1** In your browser address bar, enter the IP address of the Cisco APIC-EM in the following format:  
**https://IP address**
- Step 2** On the launch page, enter your username and password that you configured during the deployment procedure. The **Home** page of the APIC-EM controller appears. The **Home** page consists of the following three tabs:
- **DASHBOARD**

- SYSTEM HEALTH
- SYSTEM INFO

**Figure 1: SYSTEM INFO Tab**



## What to Do Next

Click on each tab and review the data provided in the GUI.

# Cisco APIC-EM GUI

## First GUI Window

When you log into the Cisco APIC-EM, the GUI appears. See the following tables for descriptions of the GUI elements.

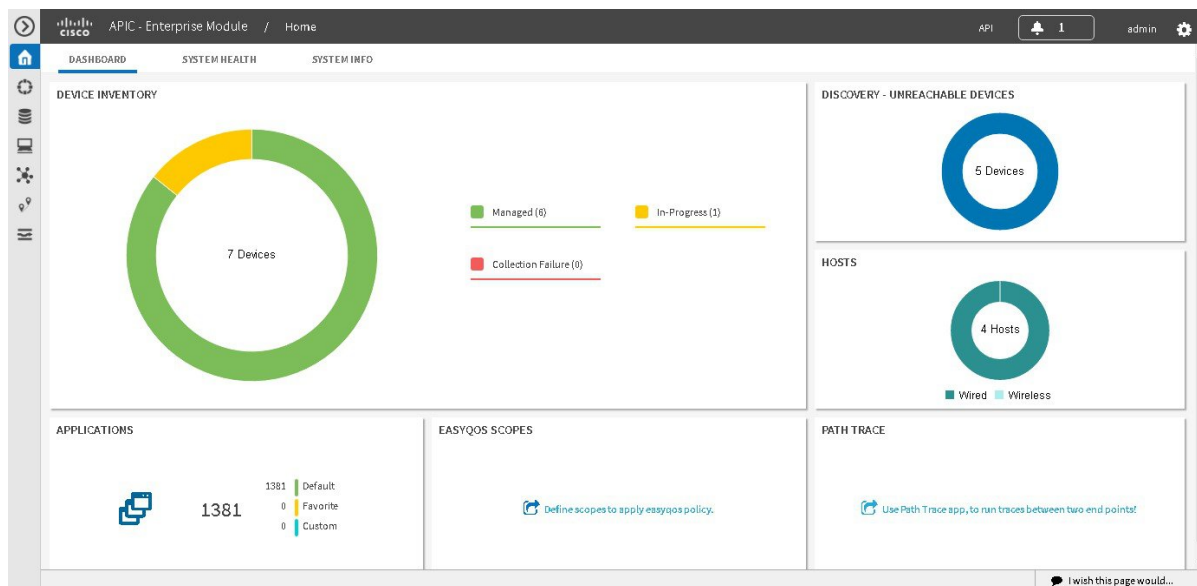


Table 2: Cisco APIC-EM GUI Elements










Name	Description
<b>Navigation</b> pane	At the left side of the window, the <b>Navigation</b> pane provides access to the Cisco APIC-EM functions and additional applications, such as EasyQoS, Path Trace, IWAN, and Network Plug and Play.
<b>Global</b> toolbar	At the top of the window, the <b>Global</b> toolbar provides access to tools, such as API documentation, settings, and notifications. For a full explanation of the icons on the <b>Global</b> toolbar, see the Global Toolbar Options table below.
Application or Function Pane	In the main window area, the application or function pane displays the interface of the application or function. When you click an option in the <b>Navigation</b> pane or from the <b>Global</b> toolbar, the corresponding application or function opens in this pane.
<b>I wish this page would...</b> feedback link	At the bottom of the window, the <b>I wish this page would...</b> feedback link opens a preaddressed email in your email application, where you can provide input about your experience using the Cisco APIC-EM and suggestions for improvements.

### Navigation Pane Options

The **Navigation** pane provides options to access the major Cisco APIC-EM features and applications.

Table 3: Navigation Pane Options

Icon <sup>1</sup>	Name	Description
	<b>Hide/Unhide Navigation</b>	Allows you to hide and unhide the <b>Navigation</b> pane.


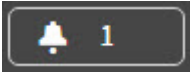
Icon <sup>1</sup>	Name	Description
	Home	Provides information about the APIC-EM, such as its network status, system health, and system information.
	Discovery	Allows you to configure discovery options for scanning the devices and hosts in your network.
	Device Inventory	Provides access to the inventory database, where you can display, filter, and sort tabular information about the discovered devices in your network.
	Host Inventory	Provides access to the inventory database, where you can display, filter, and sort tabular information about the discovered hosts in your network.
	Topology	Presents the devices and links that the Cisco APIC-EM discovers as a physical topology map with detailed device-level data. The topology of devices and links can also be presented on a geographical map. You can use this interactive feature to troubleshoot your network.
	IWAN	Simplifies the provisioning of IWAN network profiles with simple business policies. The IWAN application defines business-level preferences by application or groups of applications with preferred paths for hybrid WAN links. Doing so improves the application experience over any connection and saves telecommunication costs by leveraging cheaper WAN links.
	EasyQoS	Enables you to configure quality of service on previously discovered Cisco network devices that support the EasyQoS feature. Using EasyQoS, you can group devices and then define the business relevance of applications that are used in your network. The Cisco APIC-EM takes your QoS selections, translates them into the proper command line interface (CLI) commands, and deploys them onto the selected devices.
	Path Trace	Helps to solve network problems by automating the inspection and interrogation of the flow taken by a business application in the network.
	Network Plug and Play	Provides a highly secure, scalable, seamless, and unified zero-touch deployment experience for customers across Cisco routers, switches and wireless access points.


<sup>1</sup> Other application icons may also appear in the Navigation pane depending upon the software version you are running and whether you have installed and enabled the application itself. Check the Cisco APIC-EM release notes for information about the version you have installed and supported applications.

## Global Toolbar Options

The **Global** toolbar provides access to API information, administrative functions, system notifications.

**Table 4: Global Toolbar Options**

Icon	Option	Description
	API	Displays the automatically generated documentation for the northbound REST APIs.
	System Notifications	<p>Opens the <b>System Notifications</b> dialog box, which provides information about system notifications that have occurred.</p> <p>The icons at the top provide a total of the number of notifications in each of the following categories:</p> <ul style="list-style-type: none"><li>• Minor (yellow triangle icon)</li><li>• Major (orange triangle icon)</li><li>• Critical (red octagon icon)</li></ul> <p>If notifications have occurred, they are listed below the icons. For example, any notifications about software updates or security certificates updates appear in this window.</p> <p>Click the <b>Notification History</b> link to open the <b>Notifications</b> window. This window provides information about the notification, such as its severity, source, timestamp, and status.</p> <p>You can perform the following actions in this window:</p> <ul style="list-style-type: none"><li>• Acknowledge a notification.</li><li>• Filter notifications by status or security level.</li><li>• Sort notifications by source, detail, description, timestamp, or status.</li></ul>

Icon	Option	Description
	<b>Administrative Functions</b>	<p>Opens a menu of options. From this menu, you can choose the following administrative options:</p> <ul style="list-style-type: none"> <li>• <b>Settings</b>—Allows you to configure controller settings, such user profiles, discovery credentials, network security settings, backup and restore, and other controller settings.</li> <li>• <b>App Management</b>—Allows you to individually upload and enable Cisco and third-party applications, backup and restore the controller data, and update the Cisco APIC-EM software.</li> <li>• <b>System Administration</b>—Allows you to manage and troubleshoot controller services.</li> </ul> <p><b>Important</b> Only advanced users should access the <b>System Administration</b> console to attempt to troubleshoot the controller services.</p> <ul style="list-style-type: none"> <li>• <b>Audit Logs</b>—Provides information to help you monitor policy creation and application.</li> <li>• <b>About APIC-EM</b>—Displays the installed Cisco APIC-EM software version.</li> </ul> <p>You can perform the following user functions:</p> <ul style="list-style-type: none"> <li>• <b>Change Password</b>—Allows you to change your own password.</li> <li>• <b>Sign Out</b>—Logs you out of the Cisco APIC-EM.</li> </ul>