Cisco Path Trace Application for APIC-EM Supported Platforms, Release 1.6.0.x

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Supported Platforms for Cisco Path Trace

Supported Platforms for Cisco Path Trace, Release 1.6.0.x

This document describes the supported platforms for the Cisco Path Trace, Release 1.6.0.x.

Supported Platforms and Software Requirements

The following tables list the supported devices and modules, with their software requirements, for this release.

Note For information about the supported platforms and software requirements for the other Cisco APIC-EM applications, see the following documents:

- *Cisco EasyQoS Application for APIC-EM Supported Platforms*
- *Cisco Network Visibility Application for APIC-EM Supported Platforms*
- *Cisco Path Trace Application for APIC-EM Supported Platforms*
- *Cisco Active Advisor for APIC-EM Release Notes*
- *Cisco Integrity Verification Application for APIC-EM Release Notes*
- *Cisco Remote Troubleshooter for APIC-EM Release Notes*
- *Cisco Wide Area Bonjour Application for APIC-EM Release Notes*
- *Release Notes for Cisco Intelligent Wide Area Network Application (Cisco IWAN App)*
- *Release Notes for Cisco Network Plug and Play*

Supported Cisco Switches

The following table lists the supported Cisco switches for this Cisco Path Trace release. For Path Trace, be sure to use the recommended software version.

Table 1: Supported Cisco Switches

Supported Switches	Recommended Software Version	Path Trace Statistics			
		Interface	QoS	Device	Performance Monitor
Catalyst 2960-C Series switches	Cisco IOS 15.2(1)E1	✓	—	✓	—
Catalyst 2960-CX Series switches	Cisco IOS 15.2(4)E2	✓	—	✓	—
Catalyst 2960-S Series switches, including stacks	Cisco IOS 15.2(1)E1, 12.2(58)SE2	✓	—	✓	—
Catalyst 2960-X/XR Series switches	Cisco IOS 15.2(4)E, 15.0.2-EX5	✓	—	✓	—
Catalyst 3560CG Series switches	Cisco IOS 15.0(2)SE5	✓	—	✓	✓
Catalyst 3560CX Series switches	Cisco IOS 15.2(3)E1	✓	—	✓	✓
Catalyst 3560-X Series switches	Cisco IOS 15.2(4)E, 12.2(58)SE2	✓	—	✓	✓
Catalyst 3650 Series switches	Cisco IOS 3.6.2aE,16.X	✓	—	✓	✓
Catalyst 3750-X Series switches, including stacks	Cisco IOS 15.2(4)E, 12.2(55)SE8	✓	—	✓	✓
Catalyst 3850 Series switches, including stacks	Cisco IOS 3.6.2aE, 16.X	✓	—	✓	✓
Catalyst 4500(Sup7E) Series switches	Cisco IOS 3.5(2)E, 3.2(8)SG	✓	—	✓	✓
Catalyst 4500E (Sup8E) Series switches	Cisco 3.3.2XO, 3.6.1E	✓	—	✓	✓

Supported Switches	Recommended Software Version	Path Trace Statistics			
		Interface	QoS	Device	Performance Monitor
Catalyst 4500-X Series switches	Cisco 3.3.2SG, 3.6.5E	✓	—	✓	✓
Catalyst 6500 (Supervisor Engine 720-3C/B) Series switches	Cisco 15.1(2)SY2	✓	—	✓	✓
Catalyst 6500(Sup-2T) Series switches	Cisco IOS 15.1(2)SY4a, 15.0(1)SY6	✓	—	✓	✓
Catalyst 6800 Series switches	Cisco IOS 15.1(2)SY4a	✓	—	✓	✓
Cisco Catalyst 6807-XL Switch	Cisco IOS 15.2(1)SY1a	✓	—	✓	✓
Cisco Catalyst 6840-X Switch	Cisco IOS 15.2.2-SY	✓	—	✓	✓
Cisco Catalyst 6880-X Switch	Cisco IOS 15.1(2)SY4a	✓	—	✓	✓
Cisco Nexus 5000 Series switches	NX-OS version 7.2(2) D1(1) and 7.3(0) N1(1)	✓	—	✓	—
Cisco Nexus 7000 Series switches	NX-OS version 7.2(2) D1(1)	✓	—	✓	—

Supported Cisco Routers

The following table lists the supported Cisco routers for this Cisco Path Trace release.

Table 2: Supported Cisco Routers

Supported Routers	Minimum Software Version	Recommended Software Version	Path Statistics			
			Interface	QoS	Device	Performance Monitor
Cisco Integrated Services Routers (ISR) G2	>=15.0(1)M	Cisco IOS 15.2(4)M9	✓	✓	✓	✓
Cisco Integrated Service Router (ISR) (C819G-4G-GA-K9, C866VAE-W-E-K9, C881-V-K9, C891-24X/K9, C897VAW-A-K9, C881-K9, CISCO867VAE-K9)	>=15.2(4)M	Cisco IOS 15.2(4)M9	✓	✓	✓	✓
Cisco Integrated Service Router (ISR) 4000 Series	>=3.8.0S	Cisco IOS XE 3.12.0S, 16.3.1	✓	✓	✓	✓
Cisco Cloud Services Router 1000v Series	Cisco 15.2(4)M9	Cisco 15.2(4)M9	✓	✓	✓	✓
Cisco ASR 1000 Series Aggregation Services Router	>=3.8.0S	Cisco IOS XE 3.12.0S, 16.3.1	✓	✓	✓	✓
Cisco ASR 9000 Series Aggregation Services Router [1]	>=3.9	Cisco IOS XR 5.1.3	✓	✓	✓	—

[1] You must enable NETCONF for the Cisco ASR 9000 router or for any other Cisco device that requires NETCONF support in their device pack. See the *Cisco Application Policy Infrastructure Controller Enterprise Module Administrator Guide*, Appendix A, "Required Device Configuration" for information about this requirement.

Supported Cisco Wireless LAN Controllers

The following table lists the supported Cisco wireless LAN controllers for this Cisco Path Trace release.

Table 3: Supported Cisco Wireless LAN Controllers

Supported Wireless LAN Controllers[2]	Minimum Software Version	Recommended Software Version	Path Trace Statistics			
			Interface	QoS	Device	Performance Monitor
Cisco 2500 Series Wireless Controller	All versions	Cisco AireOS 8.1.131.0	✓	—	✓	—
Cisco 5500 Series Wireless Controller	All versions	Cisco AireOS 8.1.131.0	✓	—	✓	—
Cisco 5520 Series Wireless Controller	All versions	Cisco AireOS 8.1.131.0	✓	—	✓	—
Cisco 5760 Series Wireless LAN Controller	All versions	Cisco IOS XE 3.3.3SE	✓	—	✓	—
Cisco 8500 Series Wireless Controller	All versions	Cisco AireOS 8.1.131.0	✓	—	✓	—
Cisco 8540 Series Wireless Controller	All versions	Cisco AireOS 8.1.131.0	✓	—	✓	—
Cisco Wireless Services Module 2 (WiSM2)	8.1.131.0	Cisco AireOS 8.1.131.0	—	—	✓	—

[2] **On certain WLCs, you need to configure SNMP traps. See the *Cisco Application Policy Infrastructure Controller Enterprise Module Administrator Guide* Appendix A, "Required Device Configuration" for additional information about this configuration requirement.**

Supported Cisco Service Modules

The following table lists the supported Cisco service modules for this Cisco Path Trace release.

Table 4: Supported Cisco Service Modules in Cisco ISR G2

Supported Service Modules in Cisco ISR G2	Minimum Software Version	Recommended Software Version	Path Trace Statistics			
			Interface	QoS	Device	Performance Monitor
Cisco 2900 (SM-ES2-16-P, SM-ES2-24-P, SM-D-ES2-48)	>=12.2	Cisco IOS 15.0(2)SE8, 12.2(55)SE10	✓	—	✓	—
Cisco 3900 (SM-ES3-16-P, SM-ES3-24-P, SM-D-ES3-48-P)	>=12.2	Cisco IOS 15.0(2)SE8, 12.2(55)SE10	✓	—	✓	✓

Supported Cisco Industrial Ethernet Switches

The following tables lists the supported Cisco industrial Ethernet switches for this Cisco Path Trace release.

Table 5: Supported Cisco Industrial Ethernet Switches

Supported Industrial Ethernet Switches	Minimum Software Version	Recommended Software Version	Path Trace Statistics			
			Interface	QoS	Device	Performance Monitor
Cisco Industrial Ethernet 2000 Series Switches	>=12.2	15.0.2-EA1	✓	—	✓	—
Cisco Industrial Ethernet 3000 Series Switches	>=12.2	15.0.2-EA1	✓	—	✓	—
Cisco Industrial Ethernet 4000 Series Switches	>=12.2	15.2.5E	✓	—	✓	—

Performance Monitoring Support by Platform

The following tables describe the performance monitoring (PerfMon) support by platform for Cisco Path Trace.

Note For additional information about supported images and versions, use the Cisco Feature Navigator tool by clicking: http://tools.cisco.com/ITDIT/CFN/jsp/by-feature-technology.jsp.

Performance Monitoring Support for Cisco Switches

The following table describes Cisco Path Trace's performance monitoring (PerfMon) support for Cisco switches.

Cisco Switch	Minimum Operating System
Cisco Catalyst 2900 (SM-ES2-16-P, SM-ES2-24-P, SM-D-ES2-48)	Not Supported
Cisco Catalyst 2960-C	Not Supported
Cisco Catalyst 2960-CX	Not Supported
Cisco Catalyst 2960S	Not Supported
Cisco Catalyst 2960S-Stack	Not Supported
Cisco Catalyst 2960XR	Not Supported
Cisco Catalyst 3560CG	Cisco IOS 15.0(1)SE2
Cisco Catalyst 3560-X	Cisco IOS 12.2(58)SE Cisco IOS 15.0(1)SE2
Cisco Catalyst 3650	Cisco IOS 03.06.0E
Cisco Catalyst 3650-Stack	Cisco IOS 03.06.0E
Cisco Catalyst 3750	Cisco IOS 12.2(58)SE Cisco IOS 15.0(1)SE2
Cisco Catalyst 3750-Stack	Cisco IOS 12.2(58)SE Cisco IOS 15.0(1)SE2
Cisco Catalyst 3850	Cisco IOS 03.06.0E
Cisco Catalyst 3850-Stack	Cisco IOS 03.06.0E

Cisco Switch	Minimum Operating System
Cisco Catalyst 3900 (SM-ES3-16-P, SM-ES3-24-P, SM-D-ES3-48-P)	Cisco IOS 12.2(58)SE Cisco IOS 15.0(1)SE
Cisco Catalyst 4500-X	Cisco IOS 03.06.0E
Cisco Catalyst 4507R+E	Cisco IOS 03.06.0E
Cisco Catalyst 6500 (Sup-2T)	Cisco IOS 15.0(1)SY1
Cisco Catalyst 6500 (Sup720)	Cisco IOS 15.1(2)SY
Cisco Catalyst 6880-X	Cisco IOS 15.1(2)SY1
Cisco Nexus 5000	Not Supported
Cisco Nexus 7000 and 7700	Not Supported

Performance Monitoring Support for Cisco Routers

The following table describes Cisco Path Trace's performance monitoring (PerfMon) support for Cisco routers.

Cisco Routers	Minimum Operating System
Cisco ASR1000 Series	Cisco IOS XE 3.5.0S
Cisco ASR1001-X Router	Cisco IOS XE 3.13.0S
Cisco ASR1002-X Router	Cisco IOS XE 3.7.0S, Cisco IOS XE 16.3.1
Cisco 43xx Series Integrated Services Routers	Cisco IOS XE 3.13.0S, Cisco IOS XE 16.3.1
Cisco 44xx Series Integrated Services Routers	Cisco IOS XE 3.8.0S
Cisco 1900 Integrated Services Routers G2 Series	Cisco IOS 15.1(4)M3
Cisco 2900 Integrated Services Routers G2 Series	Cisco IOS 15.1(4)M3
Cisco 3900 Integrated Services Routers G2 Series	Cisco IOS 15.1(4)M3
Cisco 800 Series Integrated Services Routers	Cisco IOS 15.2(4)M2
Cisco Cloud Services Router 1000V Series	Cisco IOS 3.13.0S, Cisco IOS XE 16.3.1

Performance Monitoring Support for Cisco Wireless LAN Controllers

The following table describes Cisco Path Trace's performance monitoring (PerfMon) support for Cisco wireless LAN controllers.

Cisco WLC	Minimum Operating System
Cisco 2500 Series Wireless LAN Controller	Not Supported
Cisco 5500 Series Wireless LAN Controller	Not Supported
Cisco 8500 Series Wireless LAN Controller	Not Supported

Cisco Path Trace Support and Limitations

The following tables describe Cisco Path Trace support and limitations.

Protocol Support by Platform

The following table describes protocol support by platform (switch, router, or wireless LAN controller) for Cisco Path Trace.

Platform	HSRP[3]	Physical Interface	Sub-Interface	SVI[4]	PVST[5]	Ether Channel (L2)	ECMP[6]	Ether Channel (L3)	Routing Protocols (L3)[7]	Net Flow[8]	Perf Mon[9]	Trace Route
Catalyst 2960-S	✓	—	—	—	✓	✓	—	—	✓	—	✓	—
Catalyst 2960-S (stack)	✓	—	—	—	—	✓	—	—	✓	—	✓	—
Catalyst 2960-X/XR (with stack option)	✓	—	—	—	—	✓	—	—	✓	—	✓	—
Catalyst 3560-X	✓	✓	—	✓	✓	✓	✓	—	✓	—	✓	✓

Platform	HSRP[3]	Physical Interface	Sub-Interface	SVI[4]	PVST[5]	Ether Channel (L2)	ECMP[6]	Ether Channel (L3)	Routing Protocols (L3)[7]	Net[8] Flow	Perf[9] Mon	Trace Route
Catalyst 3560CG	✓	✓	—	✓	✓	✓	✓	—	✓	—	✓	—
Catalyst 3560CX	✓	✓	—	✓	✓	✓	✓	—	✓	—	✓	—
Catalyst 3650	✓	✓	—	✓	✓	✓	✓	—	✓	—	✓	✓
Catalyst 3750-X	✓	✓	—	✓	✓	✓	✓	—	✓	—	✓	✓
Catalyst 3750-X (stack)	✓	✓	—	✓	✓	✓	✓	—	✓	—	✓	✓
Catalyst 3850	✓	✓	—	✓	✓	✓	—	—	✓	—	✓	✓
Catalyst 3850 (stack)	✓	✓	—	✓	✓	✓	✓	—	✓	—	✓	✓
Catalyst 4500E (Sup7E)	✓	✓	—	✓	✓	✓	—	—	✓	—	✓	✓
Catalyst 4500E (Sup8E)	✓	✓	—	✓	✓	✓	—	—	✓	—	✓	✓
Catalyst 4500-X	✓	✓	—	✓	✓	✓	—	—	✓	—	✓	✓
Catalyst 6500 (Sup720-3C/B)	✓	✓	✓	✓	✓	✓	✓	—	✓	—	✓	✓
Catalyst 6500(2T)	✓	✓	✓	✓	✓	✓	✓	—	✓	—	✓	✓

Platform	HSRP[3]	Physical Interface	Sub-Interface	SVI[4]	PVST[5]	Ether Channel (L2)	ECMP[6]	Ether Channel (L3)	Routing Protocols (L3)[7]	Net[8] Flow	Perf[9] Mon	Trace Route
Catalyst 6800	✓	✓	—	✓	✓	✓	✓	—	✓	—	✓	✓
Cisco WLC 2504	—	—	—	—	—	✓	—	—	—	—	—	—
Cisco WLC 5500	—	—	—	—	—	✓	—	—	✓	—	—	—
Cisco WLC 5760	—	—	—	—	—	✓	—	—	—	—	—	—
Cisco WLC 8500	—	—	—	—	—	✓	—	—	—	—	—	—
Cisco ASR 1000	✓	✓	✓	✓	—	—	✓	—	✓	✓	✓	✓
Cisco ASR 9000	✓	✓	✓	✓	—	—	✓	—	✓	✓	—	✓
Cisco ISR-G2	✓	✓	✓	✓	—	—	✓	—	✓	✓	✓	✓
Cisco ISR-4451 -X	✓	✓	✓	✓	—	—	✓	—	✓	✓	✓	✓
Cisco Nexus 5000	✓	✓	—	✓	✓	✓	✓	—	✓	—	—	✓
Cisco Nexus 7000	✓	✓	—	✓	✓	✓	✓	—	✓	—	—	✓

[3] Hot Standby Router Protocol (HSRP).

[4] Switch Virtual Interface (SVI)

[5] Per VLAN Spanning Tree Protocol (PVST)

[6] Equal Cost Multipath (ECMP)

[7] Supported Layer 3 routing protocols include: static, OSPF, EIGRP, IS-IS, and BGP. The following Layer 3 protocol is not supported: PBR.

[8] NetFlow needs to be enabled on the supported device. The controller pulls cached NetFlow records from the device.

[9] Automatic Configuration

Path Trace VRF Support

The following table describes VRF support by platform for a path trace.

Table 6: Path Trace VRF (VRf Lite) Support

Platform	SVI	Physical	Port Channel
Cisco Catalyst 2960-S Series Switches	✓	✓	—
Cisco Catalyst 2960-S Series Switches (stack)	✓	✓	—
Cisco Catalyst 2960-X/XR (with stack option)	✓	✓	—
Cisco Catalyst 3560-X Series Switches	✓	✓	—
Cisco Catalyst 3560CG Series Switches	✓	✓	—
Cisco Catalyst 3560-CX Series Switches	✓	✓	—
Cisco Catalyst 3650 Series Switches	✓	✓	—
Cisco Catalyst 3750-X Series Switches	✓	✓	—
Cisco Catalyst 3750-X Series Switches (stack)	✓	✓	—
Cisco Catalyst 3850 Series Switches	✓	✓	—
Cisco Catalyst 3850 Series Switches (stack)	✓	✓	—

Platform	SVI	Physical	Port Channel
Cisco Catalyst 4500 Sup7E Series	✓	✓	—
Cisco Catalyst 4500 Sup8E Series	✓	✓	—
Cisco Catalyst 4500-X	✓	✓	—
Cisco Catalyst 6500 (Sup720- 3C/B) Series Switches	✓	✓	—
Cisco Catalyst 6500 (Sup-2T) Series Switches	✓	✓	—
Cisco Catalyst 6800 Series Switches	✓	✓	—
Cisco Nexus 5000 Series Switches	✓	✓	—
Cisco Nexus 7000 Series Switches	✓	✓	—
Cisco 2504 Series Wireless LAN Controller	—	—	—
Cisco 5500 Series Wireless LAN Controller	—	—	—
Cisco 5760 Series Wireless LAN Controller	—	—	—
Cisco 8500 Series Wireless LAN Controller	—	—	—
Cisco Wireless Services Module 2 (WiSM2)	—	—	—
Cisco ASR 1000 Series Aggregation Services Routers	✓	✓	—
Cisco ASR 9000 Series Aggregation Services Routers	✓	✓	—
Cisco ISR-800 Series Routers	✓	✓	—

Platform	SVI	Physical	Port Channel
Cisco ISR-4000 Series Routers	✓	✓	—
Cisco ISR-G2 Series Routers	✓	✓	—
Cisco 2900 (SM-ES2-16-P, SM-ES2-24-P, SM-D-ES2-48	—	—	—
Cisco 3900 (SM-ES3-16-P, SM-ES3-24-P, SM-D-ES3-48-P)	✓	✓	—

Path Trace ACL Support

The following table describes ACL trace support by platform for a path trace.

Table 7: Path Trace ACL Support

Platform	Standard ACLs	Extended ACLs	IP Name ACLs
Cisco Catalyst 2960-S Series Switches	✓	✓	✓
Cisco Catalyst 2960-S Series Switches (stack)	✓	✓	✓
Cisco Catalyst 2960-X/XR (with stack option)	✓	✓	✓
Cisco Catalyst 3560-X Series Switches	✓	✓	✓
Cisco Catalyst 3560CG Series Switches	✓	✓	✓
Cisco Catalyst 3560-CX Series Switches	✓	✓	✓
Cisco Catalyst 3650 Series Switches	✓	✓	✓

Platform	Standard ACLs	Extended ACLs	IP Name ACLs
Cisco Catalyst 3750-X Series Switches	✓	✓	✓
Cisco Catalyst 3750-X Series Switches (stack)	✓	✓	✓
Cisco Catalyst 3850 Series Switches	✓	✓	✓
Cisco Catalyst 3850 Series Switches(stack)	✓	✓	✓
Cisco Catalyst 4500 Sup7E Series	✓	✓	✓
Cisco Catalyst 4500 Sup8E Series	✓	✓	✓
Cisco Catalyst 4500-X Series	✓	✓	✓
Cisco Catalyst 6500 (Sup720- 3C/B) Series Switches	✓	✓	✓
Cisco Catalyst 6500 (Sup-2T) Series Switches	✓	✓	✓
Cisco Catalyst 6800 Series Switches	✓	✓	✓
Cisco 2504 Series Wireless LAN Controller	—	—	✓
Cisco 5500 Series Wireless LAN Controller	—	—	✓
Cisco 5760 Series Wireless LAN Controller	—	—	✓
Cisco 8500 Series Wireless LAN Controller	—	—	✓
Cisco ASR 1000 Series Aggregation Services Routers	✓	✓	✓

Platform	Standard ACLs	Extended ACLs	IP Name ACLs
Cisco ASR 9000 Series Aggregation Services Routers	—	—	✓
Cisco ISR-G2 Series Routers	✓	✓	✓
Cisco ISR-4451 -X Series Routers	✓	✓	✓
Cisco Nexus 5000 Series Switches	✓	✓	✓
Cisco Nexus 7000 Series Switches	✓	✓	✓

Wireless AP Support by Platform

The following table describes wireless application point (AP) support by platform for Cisco Path Trace.

Table 8: Wireless AP Support by Platform

Platform	AP Manager	
	Link Aggregation Group (LAG)	Physical
Cisco 2504 Series Wireless LAN Controller	✓	✓
Cisco 5500 Series Wireless LAN Controller	✓	✓
Cisco 5540 Series Wireless LAN Controller	✓	✓
Cisco 5760 Series Wireless LAN Controller	✓	✓
Cisco 8500 Series Wireless LAN Controller	✓	✓
Cisco 8540 Series Wireless LAN Controller	✓	✓

Wireless Mode Support by Platform

The following table describes wireless mode support (deployment and mobility) by platform for Cisco Path Trace.

Platform[10]	Wireless Deployment Mode			Wireless Mobility Mode		
	Centralized[11]	Flex	Converged	Centralized	Converged	Hybrid[12]
Cisco 2504 Series Wireless LAN Controller	✓	—	—	✓	—	—
Cisco 5500 Series Wireless LAN Controller	✓	—	—	✓	—	—
Cisco 5760 Series Wireless LAN Controller	✓	—	—	✓	—	—
Cisco 8500 Series Wireless LAN Controller	✓	—	—	✓	—	—

[10] WLC redundancy and high availability is not supported.

[11] Catalyst 3850 switch and stack do not support converged wireless deployment mode for a path trace.

[12] Catalyst 3850 switch and stack do not support hybrid wireless mobility mode for a path trace.

Cisco Path Trace Supported Scenarios

The following table describes the supported scenarios for Cisco Path Trace.

Scenario	Protocol	Feature List	Configuration	Supported
Gateway Load Balancing	HSRP	Interface and Media Support	Physical Interface	✓
			SVI	✓
			BVI	—
			Sub Interface	—
		Load sharing on same link	Same interface part of more than one HSRP group	—
		Load sharing across links	—	✓

Scenario	Protocol	Feature List	Configuration	Supported
Wireless Deployment Modes	Centralized	Interface support	Management Interface	✓
			AP Mgr Interface	✓
			Dynamic Interface	—
		AP Load Balancing	AP load balance across single port channel	✓
			Single AP Manager Interface Configuration	✓
			Multiple AP Manager Interface Configuration and load balance it on different physical interface	✓
			Interface Group	✓
		WLAN	Dynamic Interfaces per WLAN mapped to physical interface	✓
			Dynamic Interfaces per WLAN Over LAG	✓
		Management Interface configuration	Untagged	—
			Tagged with a VLAN	✓
Wireless Mobility Modes	Centralized	Auto-Anchor Mobility	—	✓
		Symmetric Mobility Tunneling	—	✓
		Asymmetric Mobility Tunneling	—	—
		Layer 2 and Layer 3 Roaming	Roaming across L2 and L3 networks	✓

Scenario	Protocol	Feature List	Configuration	Supported
Layer 2 Load Balancing	STP	PVST	—	✓
	EtherChannel	Port channel	Spanning Tree on PO	✓
			Display Member Link derived after load balancing	—
		Static port channels	Mode On	✓
		Dynamic port channels	LACP	✓
		Multi Chassis redundancy	M-LACP	—
Layer 3 Load Balancing	ECMP	Only Layer 3 data forwarding interfaces.	—	✓
		ECMP over Physical interface	—	✓
		ECMP over SVI	Load balance within SVIs or SVI + port channel	—
		OSPF / BGP / EIGRP / ISIS / Static Route	—	✓
	EtherChannel	Port channel	IPV4 address	—
			Display Member Link derived after load balancing	—
		Static port channels	Mode on	—
		Dynamic port channels	LACP / PAGP	—
		Multi Chassis redundancy	M-LACP	—

Service and Support

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 at:

http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html

Subscribe to *What's New in Cisco Product Documentation*, which lists all new and revised Cisco technical documentation as an RSS feed and delivers content directly to your desktop using a reader application. The RSS feeds are a free service.

Related Documentation

The following publications are available for the Cisco APIC-EM:

Cisco APIC-EM Controller Documentation

For this type of information...	See this document...
Release information, including new features, system requirements, and open and resolved caveats.	*Cisco Application Policy Infrastructure Controller Enterprise Module Release Notes*
Installation and configuration of the controller, including post-installation tasks.	*Cisco Application Policy Infrastructure Controller Enterprise Module Installation Guide*
Introduction to the Cisco APIC-EM GUI and its applications.	*Cisco Application Policy Infrastructure Controller Enterprise Module Quick Start Guide* [13]
Configuration of user accounts, RBAC scope, security certificates, authentication and password policies, and global discovery settings. Monitoring and managing Cisco APIC-EM services. Backup and restore. Cisco APIC-EM APIs.	*Cisco Application Policy Infrastructure Controller Enterprise Module Administrator Guide*
Troubleshooting the controller, including the installation, services, and passwords. Developer console. How to contact the Cisco Technical Assistance Center (TAC).	*Cisco Application Infrastructure Controller Enterprise Module Troubleshooting Guide*

For this type of information...	See this document...
Tasks to perform before updating the controller to the latest version. Software update instructions. Tasks to perform after an update.	*Cisco Application Infrastructure Controller Enterprise Module Upgrade Guide*

[13] Available from the APIC-EM controller **System Info** window.

Cisco Active Advisor Application Documentation

For this type of information...	See this document...
Release information, including open and resolved caveats for the Cisco Active Advisor application.	*Cisco Active Advisor for APIC-EM Release Notes*

Cisco EasyQoS Application Documentation

For this type of information...	See this document...
Release information, including open and resolved caveats for the Cisco EasyQoS application.	*Cisco EasyQoS Application for APIC-EM Release Notes*
Supported platforms and software releases.	*Cisco EasyQoS Application for APIC-EM Supported Platforms*
Installation of the application. (This application is installed as part of the Cisco APIC-EM controller software.)	*Cisco Application Policy Infrastructure Controller Enterprise Module Installation Guide*
Configuration of quality of service policies on the network devices in your network.	*Cisco EasyQoS Application for APIC-EM User Guide*

Cisco Integrity Verification Application Documentation

For this type of information...	See this document...
Release information, including open and resolved caveats for the Cisco Integrity Verification application.	*Cisco Integrity Verification Application (Beta) on APIC-EM Release Notes*
Using the Cisco Integrity Verification application.	*Cisco Integrity Verification Application (Beta) on APIC-EM User Guide*

Cisco IWAN Application Documentation

For this type of information...	See this document...
Release information, including open and resolved caveats for the Cisco IWAN application.	*Cisco IWAN Application on APIC-EM Release Notes*
Using the Cisco IWAN application.	*Cisco IWAN Application on APIC-EM User Guide*

Cisco Network Plug and Play Application Documentation

For this type of information...	See this document...
Release information, including open and resolved caveats for the Cisco Plug and Play application. Supported Cisco devices for Cisco Network Plug and Play.	*Release Notes for Cisco Network Plug and Play*
Configuration of devices using Cisco Network Plug and Play.	*Configuration Guide for Cisco Network Plug and Play on Cisco APIC-EM* *Cisco Network Plug and Play Agent Configuration Guide* or *Cisco Open Plug-n-Play Agent Configuration Guide* (depending on the Cisco IOS XE release)
Cisco Network Plug and Play solution overview. Main workflows used with the Cisco Network Plug and Play solution. Deployment of the Cisco Network Plug and Play solution. Tasks for using proxies with the Cisco Network Plug and Play solution. Configuration of a DHCP server for APIC-EM controller auto-discovery. Troubleshooting procedures for the Cisco Network Plug and Play solution.	*Solution Guide for Cisco Network Plug and Play*
Information about using the Cisco Plug and Play Mobile App.	*Mobile Application User Guide for Cisco Network Plug and Play* (also accessible in the app through Help)

Cisco Network Visibility Application Documentation

For this type of information...	See this document...
Release information, including open and resolved caveats for the Cisco Network Visibility application.	*Cisco Network Visibility Application for APIC-EM Release Notes*
Supported platforms and software releases.	*Cisco Network Visibility Application for APIC-EM Supported Platforms*
Installation of the application. (This application is installed as part of the Cisco APIC-EM controller software.)	*Cisco Application Policy Infrastructure Controller Enterprise Module Installation Guide*
Network discovery, device and host management, topology maps.	*Cisco Network Visibility Application for APIC-EM User Guide*

Cisco Path Trace Application Documentation

For this type of information...	See this document...
Release information, including open and resolved caveats for the Path Trace application.	*Cisco Path Trace Application for APIC-EM Release Notes*
Supported platforms and software releases.	*Cisco Path Trace Application for APIC-EM Supported Platforms*
Installation of the application. (This application is installed as part of the Cisco APIC-EM controller software.)	*Cisco Application Policy Infrastructure Controller Enterprise Module Installation Guide*
Procedures for performing path traces and information about how to understand the path trace results.	*Cisco Path Trace Application for APIC-EM User Guide*

Cisco Remote Troubleshooter Application Documentation

For this type of information...	See this document...
Release information, including open and resolved caveats for the Cisco Remote Troubleshooter application.	*Cisco Remote Troubleshooter Application on APIC-EM Release Notes*
Using the Cisco Remote Troubleshooter application.	*Cisco Remote Troubleshooter Application on APIC-EM User Guide*

Cisco Wide Area Bonjour Application Documentation

For this type of information...	See this document...
Release information, including open and resolved caveats for the Cisco Wide Area Bonjour application.	*Cisco Wide Area Bonjour Application for APIC-EM Release Notes*
Installation, configuration, troubleshooting, and usage of the application.	*Cisco Wide Area Bonjour Application for APIC-EM User Guide*

Cisco APIC-EM Developer Documentation

The Cisco APIC-EM developer website is located on the Cisco DevNet website

For this type of information...	See this document...
API functions, parameters, and responses.	APIC-EM API Reference Guide
Tutorial introduction to controller GUI, DevNet sandboxes and APIC-EM NB REST API.	Getting Started with Cisco Application Policy Infrastructure Controller Enterprise Module (APIC-EM)
Hands-on coding experience calling APIC-EM NB REST API from Python.	APIC-EM Learning Labs