



New and Changed Information

This chapter provides release-specific information about all features.

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New and Changed Information

This table summarizes the new and changed features, the supported platforms, and links to features.

Table 1: New and Changed Feature Information

Feature	Release & Platform
Provisioning	

Feature	Release & Platform
Zero-Touch Provisioning	

Feature	Release & Platform
	<p>Cisco IOS XE Everest 16.5.1a</p> <ul style="list-style-type: none"> • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9500 Series Switches <p>Cisco IOS XE Everest 16.5.1b</p> <ul style="list-style-type: none"> • Cisco 4000 Series Integrated Services Routers <p>Cisco IOS XE Everest 16.6.2</p> <ul style="list-style-type: none"> • Cisco Catalyst 9400 Series Switches <p>Cisco IOS XE Fuji 16.7.1</p> <ul style="list-style-type: none"> • Cisco ASR 1000 Aggregation Services Routers (ASR1001-X, ASR1001-HX, ASR1002-X, ASR1002-HX) <p>Cisco IOS XE Fuji 16.8.1a</p> <ul style="list-style-type: none"> • Cisco Catalyst 9500-High Performance Series Switches <p>Cisco IOS XE Fuji 16.8.2</p> <ul style="list-style-type: none"> • Cisco ASR 1000 Series Aggregation Services Routers (ASR1004, ASR1006, ASR1006-X, ASR1009-X, ASR1013) <p>Cisco IOS XE Gibraltar 16.12.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9200 Series Switches <p>Note This feature is not supported on C9200L SKUs.</p> <ul style="list-style-type: none"> • Cisco Catalyst 9300L SKUs • Cisco Catalyst 9600 Series Switches • Cisco Catalyst 9800-40 Wireless Controllers • Cisco Catalyst 9800-80 Wireless Controllers <p>Cisco IOS XE Amsterdam 17.2.1</p> <ul style="list-style-type: none"> • Cisco Cloud Services Router 1000V Series • Cisco C1100 Terminal Services Gateway (Supported only on C1100TGX-1N24P32A) <p>Cisco IOS XE Amsterdam 17.3.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 8200 Series Edge Platforms

Feature	Release & Platform
	<ul style="list-style-type: none"> • Cisco Catalyst 8300 Series Edge Platforms Cisco IOS XE Bengaluru 17.4.1 <ul style="list-style-type: none"> • Cisco Catalyst 8000V Edge Software Cisco IOS XE Cupertino 17.8.1 <ul style="list-style-type: none"> • Cisco Catalyst 9800-L Wireless Controllers C9800L
Zero Touch Provisioning: HTTP Download	Cisco IOS XE Fuji 16.8.1 <ul style="list-style-type: none"> • Cisco 4000 Series Integrated Services Routers • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9500 Series Switches Cisco IOS XE Fuji 16.8.1a <ul style="list-style-type: none"> • Cisco Catalyst 9500-High Performance Series Switches
DHCPv6 Support for Zero-Touch Provisioning	Cisco IOS XE Fuji 16.9.1 <ul style="list-style-type: none"> • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9500 Series Switches Cisco IOS XE Amsterdam 17.3.2a <ul style="list-style-type: none"> • Cisco Catalyst 9800-40 Series Wireless Controllers • Cisco Catalyst 9800-80 Series Wireless Controllers
Zero-Touch Provisioning Through YANG Models	Cisco IOS XE Cupertino 17.7.1 <ul style="list-style-type: none"> • This feature is supported on all platforms that support NETCONF-YANG.

Feature	Release & Platform
iPXE	<p>Cisco IOS XE Denali 16.3.2 and Cisco IOS XE Everest 16.5.1a</p> <ul style="list-style-type: none">• Cisco Catalyst 3650 Series Switches• Cisco Catalyst 3650 Series Switches <p>Cisco IOS XE Everest 16.6.1</p> <ul style="list-style-type: none">• Cisco Catalyst 9300 Series Switches• Cisco Catalyst 9500 Series Switches <p>Cisco IOS XE Everest 16.6.2</p> <ul style="list-style-type: none">• Cisco Catalyst 9400 Series Switches <p>Cisco IOS XE Fuji 16.8.1a</p> <ul style="list-style-type: none">• Cisco Catalyst 9500-High Performance Series Switches <p>Cisco IOS XE Fuji 16.9.2</p> <ul style="list-style-type: none">• Cisco Catalyst 9200 Series Switches <p>Cisco IOS XE Gibraltar 16.11.1</p> <ul style="list-style-type: none">• Cisco Catalyst 9600 Series Switches
Shells and Scripting	

Feature	Release & Platform
Guest Shell	<p>Cisco IOS XE Everest 16.5.1a</p> <ul style="list-style-type: none"> • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9500 Series Switches <p>Cisco IOS XE Everest 16.5.1b</p> <ul style="list-style-type: none"> • Cisco 4000 Series Integrated Services Routers <p>Cisco IOS XE Everest 16.6.2</p> <ul style="list-style-type: none"> • Cisco Catalyst 9400 Series Switches <p>Cisco IOS XE Fuji 16.7.1</p> <ul style="list-style-type: none"> • Cisco ASR 1000 Aggregation Services Routers (ASR1001-X, ASR1001-HX, ASR1002-X, ASR1002-HX) • Cisco Cloud Services Router 1000V Series <p>Cisco IOS XE Fuji 16.8.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9500-High Performance Series Switches <p>Cisco IOS XE Fuji 16.9.1</p> <ul style="list-style-type: none"> • Cisco 1000 Series Integrated Services Routers <p>Cisco IOS XE Gibraltar 16.11.1b</p> <ul style="list-style-type: none"> • Cisco Catalyst 9800-40 Wireless Controllers • Cisco Catalyst 9800-80 Wireless Controllers <p>Cisco IOS XE Gibraltar 16.12.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9200 Series Switches <p>Note This feature is not supported on C9200L SKUs.</p> <ul style="list-style-type: none"> • Cisco Catalyst 9300L SKUs • Cisco Catalyst 9600 Series Switches <p>Cisco IOS XE Amsterdam 17.3.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 8200 Series Edge Platforms • Cisco Catalyst 8300 Series Edge Platforms

Feature	Release & Platform
Python 3 Support in Guest Shell	Cisco IOS XE Amsterdam 17.1.1 <ul style="list-style-type: none">• Cisco 1000 Series Integrated Services Routers• Cisco ASR 1000 Aggregation Services Routers (ASR1000-RP1, ASR1000-RP2, ASR1000-RP3, ASR1001-X, ASR1001-HX, ASR1002-X, ASR1002-HX)• Cisco Catalyst 9300 Series Switches• Cisco Catalyst 9400 Series Switches• Cisco Catalyst 9500 Series Switches• Cisco Catalyst 9600 Series Switches• Cisco ISR 4000 Series Integrated Services Routers
NETCONF Access from Guest Shell	Cisco IOS XE Bengaluru 17.6.1 <ul style="list-style-type: none">• Cisco Catalyst 9200 Series Switches• Cisco Catalyst 9300 and 9300L Series Switches• Cisco Catalyst 9400 Series Switches• Cisco Catalyst 9500 and 9500-High Performance Series Switches• Cisco Catalyst 9600 Series Switches

Feature	Release & Platform
Python APIs	<p data-bbox="776 289 1101 321">Cisco IOS XE Everest 16.5.1a</p> <ul data-bbox="813 338 1219 527" style="list-style-type: none"> <li data-bbox="813 338 1219 369">• Cisco Catalyst 3650 Series Switches <li data-bbox="813 390 1219 422">• Cisco Catalyst 3850 Series Switches <li data-bbox="813 443 1219 474">• Cisco Catalyst 9300 Series Switches <li data-bbox="813 495 1219 527">• Cisco Catalyst 9500 Series Switches <p data-bbox="776 558 1101 590">Cisco IOS XE Everest 16.5.1b</p> <ul data-bbox="813 606 1325 638" style="list-style-type: none"> <li data-bbox="813 606 1325 638">• Cisco 4000 Series Integrated Services Routers <p data-bbox="776 669 1089 701">Cisco IOS XE Everest 16.6.2</p> <ul data-bbox="813 718 1219 749" style="list-style-type: none"> <li data-bbox="813 718 1219 749">• Cisco Catalyst 9400 Series Switches <p data-bbox="776 781 1052 812">Cisco IOS XE Fuji 16.7.1</p> <ul data-bbox="813 829 1482 942" style="list-style-type: none"> <li data-bbox="813 829 1482 892">• Cisco ASR 1000 Aggregation Services Routers (ASR1001-X, ASR1001-HX, ASR1002-X, ASR1002-HX) <li data-bbox="813 913 1289 942">• Cisco Cloud Services Router 1000V Series <p data-bbox="776 974 1065 1005">Cisco IOS XE Fuji 16.8.1a</p> <ul data-bbox="813 1022 1425 1054" style="list-style-type: none"> <li data-bbox="813 1022 1425 1054">• Cisco Catalyst 9500-High Performance Series Switches

Feature	Release & Platform
Python CLI Module	<p>Cisco IOS XE Everest 16.5.1a</p> <ul style="list-style-type: none"> • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9500 Series Switches <p>Cisco IOS XE Everest 16.5.1b</p> <ul style="list-style-type: none"> • Cisco 4000 Series Integrated Services Routers <p>Cisco IOS XE Everest 16.6.2</p> <ul style="list-style-type: none"> • Cisco Catalyst 9400 Series Switches <p>Cisco IOS XE Fuji 16.7.1</p> <ul style="list-style-type: none"> • Cisco ASR 1000 Aggregation Services Routers (ASR1001-X, ASR1001-HX, ASR1002-X, ASR1002-HX) • Cisco Cloud Services Router 1000V Series <p>Cisco IOS XE Fuji 16.8.1</p> <ul style="list-style-type: none"> • Cisco 4000 Series Integrated Services Router models with a minimum of 4 GB RAM. • Cisco ASR 1000 Series Aggregation Services Routers (ASR1004, ASR1006, ASR1006-X, ASR1009-X, ASR1013) <p>Cisco IOS XE Fuji 16.8.1a</p> <ul style="list-style-type: none"> • Cisco Catalyst 9500-High Performance Series Switches

Feature	Release & Platform
EEM Python Module	<p>Cisco IOS XE Everest 16.5.1a</p> <ul style="list-style-type: none"> • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9500 Series Switches <p>Cisco IOS XE Everest 16.5.1b</p> <ul style="list-style-type: none"> • Cisco 4000 Series Integrated Services Routers <p>Cisco IOS XE Everest 16.6.2.</p> <ul style="list-style-type: none"> • Cisco Catalyst 9400 Series Switches <p>Cisco IOS XE Fuji 16.7.1</p> <ul style="list-style-type: none"> • Cisco ASR 1000 Aggregation Services Routers (ASR1001-X, ASR1001-HX, ASR1002-X, ASR1002-HX) • Cisco Cloud Services Router 1000V Series <p>Cisco IOS XE Fuji 16.8.1a</p> <ul style="list-style-type: none"> • Cisco Catalyst 9500-High Performance Series Switches
Model-Driven Programmability	

Feature	Release & Platform
NETCONF Protocol	<p>Cisco IOS XE Denali 16.3.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches • Cisco 4000 Series Integrated Services Routers <p>Cisco IOS XE Everest 16.5.1a</p> <ul style="list-style-type: none"> • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9500 Series Switches <p>Cisco IOS XE Everest 16.6.2</p> <ul style="list-style-type: none"> • Cisco Catalyst 9400 Series Switches <p>Cisco IOS XE Fuji 16.7.1</p> <ul style="list-style-type: none"> • Cisco ASR 900 Series Aggregation Services Routers • Cisco Network Convergence System 4200 Series <p>Cisco IOS XE Fuji 16.9.2</p> <ul style="list-style-type: none"> • Cisco Catalyst 9200 Series Switches <p>Cisco IOS XE Gibraltar 16.10.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9800 Series Wireless Controllers • Cisco Network Convergence System 520 Series • Cisco IR1101 Integrated Services Router Rugged <p>Cisco IOS XE Gibraltar 16.11.1</p> <ul style="list-style-type: none"> • Cisco Catalyst IE 3200, 3300, 3400 Rugged Series • Cisco Embedded Service 3300 Series Switches

Feature	Release & Platform
NETCONF and RESTCONF IPv6 Support	<p data-bbox="776 289 1065 321">Cisco IOS XE Fuji 16.8.1a</p> <ul data-bbox="813 338 1406 831" style="list-style-type: none"> • Cisco 4000 Series Integrated Services Routers • Cisco ASR 1000 Series Aggregation Services Routers • Cisco ASR 900 Series Aggregation Services Routers • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 Series Switches • Cisco cBR-8 Converged Broadband Router • Cisco Cloud Services Router 1000V Series <p data-bbox="776 867 1117 898">Cisco IOS XE Gibraltar 16.11.1</p> <ul data-bbox="813 915 1422 947" style="list-style-type: none"> • Cisco Catalyst 9500-High Performance Series Switches
NETCONF Global Lock and Kill Session	<p data-bbox="776 987 1065 1018">Cisco IOS XE Fuji 16.8.1a</p> <ul data-bbox="813 1035 1406 1581" style="list-style-type: none"> • Cisco 1100 Series Integrated Services Routers • Cisco 4000 Series Integrated Services Routers • Cisco ASR 1000 Series Aggregation Services Routers • Cisco ASR 900 Series Aggregation Services Routers • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 Series Switches • Cisco cBR-8 Converged Broadband Router • Cisco Cloud Services Router 1000v Series

Feature	Release & Platform
NETCONF-YANG SSH Server Support	<p data-bbox="816 291 1156 321">Cisco IOS XE Gibraltar 16.12.1</p> <ul data-bbox="850 338 1433 1192" style="list-style-type: none"><li data-bbox="850 338 1360 367">• Cisco 1000 Series Integrated Services Routers<li data-bbox="850 390 1360 420">• Cisco 4000 Series Integrated Services Routers<li data-bbox="850 443 1433 472">• Cisco ASR 900 Series Aggregation Services Routers<li data-bbox="850 495 1433 525">• Cisco ASR 920 Series Aggregation Services Routers<li data-bbox="850 548 1373 577">• Cisco ASR 1000 Aggregation Services Routers<li data-bbox="850 600 1256 630">• Cisco Catalyst 3650 Series Switches<li data-bbox="850 653 1256 682">• Cisco Catalyst 3850 Series Switches<li data-bbox="850 705 1256 735">• Cisco Catalyst 9200 Series Switches<li data-bbox="850 758 1256 787">• Cisco Catalyst 9300 Series Switches<li data-bbox="850 810 1256 840">• Cisco Catalyst 9400 Series Switches<li data-bbox="850 863 1256 892">• Cisco Catalyst 9500 Series Switches<li data-bbox="850 915 1256 945">• Cisco Catalyst 9600 Series Switches<li data-bbox="850 968 1382 997">• Cisco Catalyst 9800 Series Wireless Controllers<li data-bbox="850 1020 1333 1050">• Cisco cBR-8 Converged Broadband Router<li data-bbox="850 1073 1328 1102">• Cisco Cloud Services Router 1000V Series<li data-bbox="850 1125 1377 1155">• Cisco Network Convergence System 520 Series<li data-bbox="850 1178 1393 1207">• Cisco Network Convergence System 4200 Series

Feature	Release & Platform
Named Method List	Cisco IOS XE Cupertino 17.9.1 <ul style="list-style-type: none"> • Cisco 1000 Series Integrated Services Routers • Cisco 4000 Series Integrated Services Routers • Cisco ASR 900 Series Aggregation Services Routers • Cisco ASR 920 Series Aggregation Services Routers • Cisco ASR 1000 Aggregation Services Routers • Cisco Catalyst 8200 Series Edge Platforms • Cisco Catalyst 8300 Series Edge Platforms • Cisco Catalyst 8500 Series and 8500L Series Edge Platforms • Cisco Catalyst 9200 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 Series Switches • Cisco Catalyst 9600 Series Switches • Cisco Catalyst 9800 Series Wireless Controllers • Cisco Cloud Services Router 1000V Series • Cisco Network Convergence System 520 Series • Cisco Network Convergence System 4200 Series
Side-Effect Synchronization of the Configuration Database	Cisco IOS XE Bengaluru 17.4.1 <ul style="list-style-type: none"> • Cisco ASR 1000 Series Aggregated Services Routers • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 Series Switches • Cisco Catalyst 9600 Series Switches

Feature	Release & Platform
YANG Model Version 1.1	Cisco IOS XE Cupertino 17.7.1 <ul style="list-style-type: none"> • Cisco 1000 Series Integrated Services Routers • Cisco 4000 Series Integrated Services Routers • Cisco ASR 900 Aggregation Services Routers • Cisco ASR 920 Aggregation Services Routers • Cisco ASR 1000 Aggregation Services Routers • Cisco Catalyst 9200 and 9200L Series Switches • Cisco Catalyst 9300 and 9300L Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 and 9500-High Performance Series Switches • Cisco Catalyst 9600 Series Switches • Cisco Catalyst 9800-40 Wireless Controllers • Cisco Catalyst 9800-80 Wireless Controllers • Cisco cBR-8 Converged Broadband Router • Cisco Cloud Services Router 1000V Series • Cisco Network Convergence System 520 Series • Cisco Network Convergence System 4200 Series
Converting IOS Commands to XML	Cisco IOS XE Cupertino 17.7.1 <ul style="list-style-type: none"> • This feature is supported on all platforms that support NETCONF-YANG.

Feature	Release & Platform
RESTCONF Protocol	

Feature	Release & Platform
	<p>Cisco IOS XE Everest 16.6.1</p> <ul style="list-style-type: none"> • Cisco 4000 Series Integrated Services Router • Cisco ASR 1000 Aggregation Services Routers • Cisco Cloud Services Router 1000V Series <p>Cisco IOS XE Fuji 16.8.1a</p> <ul style="list-style-type: none"> • Cisco 1000 Series Integrated Services Routers • Cisco ASR 900 Series Aggregation Services Routers • Cisco ASR 920 Series Aggregation Services Router • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 and 9500-High Performance Series Switches • Cisco cBR-8 Converged Broadband Router • Cisco Network Convergence System 4200 Series <p>Cisco IOS XE Fuji 16.9.2</p> <ul style="list-style-type: none"> • Cisco Catalyst 9200 Series Switches <p>Cisco IOS XE Gibraltar 16.11.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9600 Series Switches • Cisco Catalyst 9800-CL Wireless Controllers • Cisco Catalyst 9800-40 Wireless Controllers • Cisco Catalyst 9800-80 Wireless Controllers • Cisco Network Convergence System 520 Series <p>Cisco IOS XE Gibraltar 16.12.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9800-L Wireless Controllers <p>Cisco IOS XE Amsterdam 17.3.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 8200 Series Edge Platforms • Cisco Catalyst 8300 Series Edge Platforms <p>Cisco IOS XE Bengaluru 17.4.1</p>

Feature	Release & Platform
	<ul style="list-style-type: none"> • Cisco Catalyst 8000V Edge Software
RESTCONF YANG-Patch Support	<p>Cisco IOS XE Amsterdam 17.1.1</p> <ul style="list-style-type: none"> • Cisco 1000 Series Integrated Services Routers • Cisco 4000 Series Integrated Services Routers • Cisco ASR 900 Series Aggregation Services Routers • Cisco ASR 1000 Aggregation Services Routers (ASR1000-RP2, ASR1000-RP3, ASR1001-HX, ASR1001-X, ASR1002-HX, ASR1002-X) • Cisco Catalyst 9200 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 Series Switches • Cisco cBR-8 Converged Broadband Router • Cisco Cloud Services Router 1000V Series • Cisco Catalyst IE3200 Rugged Series • Cisco Catalyst IE3300 Rugged Series • Cisco Catalyst IE3400 Rugged Series • Cisco IR1101 Integrated Services Router Rugged • Cisco Network Convergence System 520 Series • Cisco Network Convergence System 4200 Series

Feature	Release & Platform
NETCONF and RESTCONF Service-Level ACLs	Cisco IOS XE Gibraltar 16.11.1 <ul style="list-style-type: none">• Cisco ASR 900 Series Aggregation Services Routers• Cisco ASR 920 Series Aggregated Services Routers• Cisco Catalyst 3650 Series Switches• Cisco Catalyst 3850 Series Switches• Cisco Catalyst 9200 Series Switches• Cisco Catalyst 9300 Series Switches• Cisco Catalyst 9400 Series Switches• Cisco Catalyst 9500 Series Switches• Cisco Catalyst IE3200 Rugged Series• Cisco Catalyst IE3300 Rugged Series• Cisco Catalyst IE3400 Rugged Series• Cisco Embedded Services 3300 Series Switches• Cisco IR1101 Integrated Services Router Rugged• Cisco Network Convergence System 4200 Series• Cisco Network Convergence System 520 Series

Feature	Release & Platform
gNMI Protocol	<p>Cisco IOS XE Fuji 16.8.1a</p> <ul style="list-style-type: none"> • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 Series Switches <p>Cisco IOS XE Gibraltar 16.10.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9500-High Performance Series Switches <p>Cisco IOS XE Gibraltar 16.11.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9600 Series Switches <p>Cisco IOS XE Gibraltar 16.12.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9200 and 9200L Series Switches • Cisco Catalyst 9300L SKUs • Cisco cBR-8 Converged Broadband Router <p>Cisco IOS XE Amsterdam 17.1.1</p> <ul style="list-style-type: none"> • Cisco ASR 900 Series Aggregation Services Routers • Cisco ASR 920 Series Aggregation Services Router • Cisco Network Convergence System 520 Series • Cisco Network Convergence System 4200 Series <p>Cisco IOS XE Amsterdam 17.2.1r</p> <ul style="list-style-type: none"> • Cisco ASR 1000 Series Aggregation Services Routers <p>Cisco IOS XE Cupertino 17.8.1</p> <ul style="list-style-type: none"> • Cisco 1000 Series Integrated Services Routers • Cisco 4000 Series Integrated Services Routers • Cisco Catalyst 8000V Edge Software • Cisco Catalyst 8200 Series Edge Platforms • Cisco Catalyst 8300 Series Edge Platforms • Cisco Catalyst 9800-CL Wireless Controllers • Cisco Catalyst 9800-40 Wireless Controllers • Cisco Catalyst 9800-80 Wireless Controllers

Feature	Release & Platform
gNMI Username and Password Authentication	Cisco IOS XE Gibraltar 16.12.1 <ul style="list-style-type: none"> • Cisco Catalyst 9200 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 Series Switches • Cisco Catalyst 9600 Series Switches • Cisco Catalyst IE3200 Rugged Series • Cisco Catalyst IE3200 Rugged Series • Cisco Catalyst IE3300 Rugged Series • Cisco Catalyst IE3400 Rugged Series • Cisco Embedded Service 3300 Series Switches
gRPC Network Operations Interface: gNOI Certificate Management & gNOI Bootstrapping with Certificate Service	Cisco IOS XE Amsterdam 17.3.1 <ul style="list-style-type: none"> • Cisco Catalyst 9200 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 Series Switches • Cisco Catalyst 9600 Series Switches
gNOI OS Installation Service	Cisco IOS XE Bengaluru 17.5.1 <ul style="list-style-type: none"> • Cisco Catalyst 9200 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 Series Switches • Cisco Catalyst 9600 Series Switches
gNOI Factory Reset Service	Cisco IOS XE Cupertino 17.7.1 <ul style="list-style-type: none"> • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 and 9500-High Performance Series Switches • Cisco Catalyst 9800-40 Wireless Controllers • Cisco Catalyst 9800-80 Wireless Controllers

Feature	Release & Platform
Model-Based AAA	<p data-bbox="776 289 1052 321">Cisco IOS XE Fuji 16.8.1</p> <ul data-bbox="813 338 1409 680" style="list-style-type: none"><li data-bbox="813 338 1325 369">• Cisco 1000 Series Integrated Services Routers<li data-bbox="813 390 1325 422">• Cisco 4000 Series Integrated Services Routers<li data-bbox="813 443 1409 474">• Cisco ASR 1000 Series Aggregation Services Routers<li data-bbox="813 495 1395 527">• Cisco ASR 900 Series Aggregation Services Routers<li data-bbox="813 548 1395 579">• Cisco ASR 920 Series Aggregation Services Routers<li data-bbox="813 600 1284 632">• Cisco Cloud Services Router 1000v Series<li data-bbox="813 653 1284 684">• Cisco Network Convergence System 4200 <p data-bbox="776 709 1065 741">Cisco IOS XE Fuji 16.8.1a</p> <ul data-bbox="813 758 1219 995" style="list-style-type: none"><li data-bbox="813 758 1219 789">• Cisco Catalyst 3650 Series Switches<li data-bbox="813 810 1219 842">• Cisco Catalyst 3850 Series Switches<li data-bbox="813 863 1219 894">• Cisco Catalyst 9300 Series Switches<li data-bbox="813 915 1219 947">• Cisco Catalyst 9400 Series Switches<li data-bbox="813 968 1219 999">• Cisco Catalyst 9500 Series Switches

Feature	Release & Platform
Model-Driven Telemetry NETCONF Dial-In	

Feature	Release & Platform
	<p>Cisco IOS XE Everest 16.6.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9500 Series Switches <p>Cisco IOS XE Everest 16.6.2</p> <ul style="list-style-type: none"> • Cisco Catalyst 9400 Series Switches <p>Cisco IOS XE Fuji 16.7.1</p> <ul style="list-style-type: none"> • Cisco 4000 Series Integrated Services Routers • Cisco ASR 1000 Aggregation Services Routers (ASR1001-HX, ASR1001-X, ASR1002-HX, ASR1002-X) <p>Cisco IOS XE Fuji 16.8.1</p> <ul style="list-style-type: none"> • Cisco 1000 Series Integrated Services Routers • Cisco ASR 1000 RP2 and RP3 Series Aggregation Services Routers <p>Cisco IOS XE Fuji 16.8.1a</p> <ul style="list-style-type: none"> • Cisco Catalyst 9500-High Performance Series Switches <p>Cisco IOS XE Fuji 16.9.1</p> <ul style="list-style-type: none"> • Cisco ASR 900 Series Aggregation Services Routers • Cisco ASR 920 Series Aggregation Services Router • Cisco cBR-8 Converged Broadband Router • Cisco Network Convergence System 4200 Series <p>Cisco IOS XE Fuji 16.9.2</p> <ul style="list-style-type: none"> • Cisco Catalyst 9200 and 9200L Series Switches • Cisco Catalyst 9300L SKUs <p>Cisco IOS XE Gibraltar 16.10.1</p> <ul style="list-style-type: none"> • Cisco Cloud Services Router 1000v • Cisco Network Convergence System 520 Series <p>Cisco IOS XE Gibraltar 16.11.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9600 Series Switches

Feature	Release & Platform
	<p>Cisco IOS XE Amsterdam 17.3.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 8200 Series Edge Platforms • Cisco Catalyst 8300 Series Edge Platforms <p>Cisco IOS XE Bengaluru 17.4.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 8000V Edge Software
<p>Model-Driven Telemetry gRPC Dial-out</p>	<p>Cisco IOS XE Gibraltar 16.10.1</p> <ul style="list-style-type: none"> • Cisco 1000 Series Integrated Services Routers • Cisco 4000 Series Integrated Services Routers • Cisco ASR 1000 Series Aggregation Services Routers • Cisco ASR 900 Series Aggregation Services Routers • Cisco ASR 920 Series Aggregated Services Router • Cisco Catalyst 9200 and 9200L Series Switches • Cisco Catalyst 9300 and 9300L Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 and 9500-High Performance Series Switches • Cisco cBR-8 Converged Broadband Router • Cisco Cloud Services Router 1000V Series • Cisco Network Convergence System 520 Series • Cisco Network Convergence System 4200 Series <p>Cisco IOS XE Gibraltar 16.11.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9600 Series Switches <p>Cisco IOS XE Amsterdam 17.3.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 8200 Series Edge Platforms • Cisco Catalyst 8300 Series Edge Platforms <p>Cisco IOS XE Bengaluru 17.4.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 8000V Edge Software

Feature	Release & Platform
Model-Driven Telemetry gNMI Dial-In	<p data-bbox="776 289 1117 321">Cisco IOS XE Gibraltar 16.12.1</p> <ul data-bbox="813 338 1425 657" style="list-style-type: none"> <li data-bbox="813 338 1338 369">• Cisco Catalyst 9200 and 9200L Series Switches <li data-bbox="813 388 1338 420">• Cisco Catalyst 9300 and 9300L Series Switches <li data-bbox="813 438 1219 470">• Cisco Catalyst 9400 Series Switches <li data-bbox="813 489 1425 552">• Cisco Catalyst 9500 and 9500-High Performance Series Switches <li data-bbox="813 571 1219 602">• Cisco Catalyst 9600 Series Switches <li data-bbox="813 621 1292 653">• Cisco cBR-8 Converged Broadband Router <p data-bbox="776 688 1130 720">Cisco IOS XE Amsterdam 17.1.1</p> <ul data-bbox="813 737 1393 926" style="list-style-type: none"> <li data-bbox="813 737 1393 768">• Cisco ASR 900 Series Aggregation Services Routers <li data-bbox="813 787 1373 819">• Cisco ASR 920 Series Aggregated Services Router <li data-bbox="813 837 1338 869">• Cisco Network Convergence System 520 Series <li data-bbox="813 888 1352 919">• Cisco Network Convergence System 4200 Series <p data-bbox="776 955 1130 987">Cisco IOS XE Amsterdam 17.2.1</p> <ul data-bbox="813 1003 1406 1035" style="list-style-type: none"> <li data-bbox="813 1003 1406 1035">• Cisco ASR 1000 Series Aggregation Services Routers <p data-bbox="776 1071 1130 1102">Cisco IOS XE Amsterdam 17.3.1</p> <ul data-bbox="813 1119 1406 1150" style="list-style-type: none"> <li data-bbox="813 1119 1406 1150">• Cisco ASR 1000 Series Aggregation Services Routers <p data-bbox="776 1186 1114 1218">Cisco IOS XE Cupertino 17.8.1</p> <ul data-bbox="813 1234 1321 1413" style="list-style-type: none"> <li data-bbox="813 1234 1321 1266">• Cisco 1000 Series Integrated Services Routers <li data-bbox="813 1285 1321 1316">• Cisco 4000 Series Integrated Services Routers <li data-bbox="813 1335 1287 1367">• Cisco Catalyst 8200 Series Edge Platforms <li data-bbox="813 1386 1287 1417">• Cisco Catalyst 8300 Series Edge Platforms

Feature	Release & Platform
TLS for gRPC Dial-Out	Cisco IOS XE Amsterdam 17.1.1 <ul style="list-style-type: none"> • Cisco 1000 Series Integrated Services Routers • Cisco 4000 Series Integrated Services Routers • Cisco ASR 900 Series Aggregation Services Routers • Cisco ASR 1000 Series Aggregation Services Routers ASR1000-RP1, ASR1000-RP2, ASR1000-RP3, ASR1001-HX, ASR1001-X, ASR1002-HX, ASR1002-X) • Cisco Catalyst 9200 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 and 9500-High Performance Series Switches • Cisco Catalyst 9600 Series Switches • Cisco cBR-8 Converged Broadband Router • Cisco Cloud Services Router 1000V Series • Cisco Catalyst IE3200 Rugged Series • Cisco Catalyst IE3300 Rugged Series • Cisco Catalyst IE3400 Rugged Series • Cisco IR1101 Integrated Services Router Rugged • Cisco Network Convergence System 520 Series • Cisco Network Convergence System 4200 Series
TLDP On-Change Notifications	Cisco IOS XE Amsterdam 17.2.1 <ul style="list-style-type: none"> • Cisco 4000 Series Integrated Services Routers • Cisco Catalyst 9200 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 Series Switches

Feature	Release & Platform
Kill Telemetry Subscription	<p>Cisco IOS XE Gibraltar 16.11.1</p> <ul style="list-style-type: none"> • Cisco ASR 900 Series Aggregation Services Routers • Cisco ASR 920 Series Aggregated Services Routers • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches • Cisco Catalyst 9200 Series Switches • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 Series Switches • Cisco IR1101 Integrated Services Router Rugged • Cisco Network Convergence System 4200 Series • Cisco Network Convergence System 520 Series <p>Cisco IOS XE Gibraltar 16.11.1a</p> <ul style="list-style-type: none"> • Cisco 1000 Series Integrated Services Routers • Cisco 4000 Series Integrated Services Routers • Cisco ASR 1000 Series Aggregation Services Routers • Cisco ASR 900 Series Aggregation Services Routers • Cisco ASR 920 Series Aggregation Services Routers • Cisco Cloud Services Router 1000V Series
FQDN Support for gRPC Subscriptions	<p>Cisco IOS XE Bengaluru 17.6.1</p> <ul style="list-style-type: none"> • Cisco ASR 900 Series Aggregation Services Routers (RSP2) • Cisco Catalyst 9200 Series Switches • Cisco Catalyst 9800-40 Wireless Controllers • Cisco Catalyst 9800-80 Wireless Controllers
Leaf-Level Filtering	<p>Cisco IOS XE Cupertino 17.7.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9300 and 9300L Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 and 9500-High Performance Series Switches • Cisco Catalyst 9600 Series Switches

Feature	Release & Platform
Mutual Authentication for gRPC Telemetry	Cisco IOS XE Cupertino 17.9.1 <ul style="list-style-type: none"> • Cisco Catalyst 9800-CL Series Wireless Controller • Cisco Catalyst 9800-40 Series Wireless Controller • Cisco Catalyst 9800-80 Series Wireless Controller
Pubd Restartability	Cisco IOS XE Cupertino 17.9.1 <ul style="list-style-type: none"> • Cisco 1000 Series Integrated Services Routers • Cisco 4000 Series Integrated Services Routers • Cisco ASR 1000 Series Aggregation Services Routers • Cisco ASR 900 Series Aggregation Services Routers • Cisco ASR 920 Series Aggregated Services Router • Cisco Catalyst 9200 and 9200L Series Switches • Cisco Catalyst 9300 and 9300L Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 and 9500-High Performance Series Switches • Cisco Catalyst 9600 Series Switches • Cisco Catalyst 9800-CL Series Wireless Controller • Cisco Catalyst 9800-40 Series Wireless Controller • Cisco Catalyst 9800-80 Series Wireless Controller • Cisco cBR-8 Converged Broadband Router • Cisco Cloud Services Router 1000V Series • Cisco Network Convergence System 520 Series • Cisco Network Convergence System 4200 Series

Feature	Release & Platform
In-Service Model Updates	<p>Cisco IOS XE Everest 16.5.1a</p> <ul style="list-style-type: none"> • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9500 Series Switches <p>Cisco IOS XE Everest 16.5.1b</p> <ul style="list-style-type: none"> • Cisco 4000 Series Integrated Services Routers <p>Cisco IOS XE Everest 16.6.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 3650 Series Switches • Cisco Catalyst 3850 Series Switches <p>Cisco IOS XE Everest 16.6.2</p> <ul style="list-style-type: none"> • Cisco Catalyst 9400 Series Switches <p>Cisco IOS XE Fuji 16.7.1</p> <ul style="list-style-type: none"> • Cisco ASR 1000 Aggregation Services Routers <p>Cisco IOS XE Fuji 16.8.1a</p> <ul style="list-style-type: none"> • Cisco Catalyst 9500-High Performance Series Switches.
Application Hosting	
Application Hosting	<p>Cisco IOS XE Gibraltar 16.12.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9300 Series Switches <p>Cisco IOS XE Amsterdam 17.1.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9400 Series Switches <p>Cisco IOS XE Amsterdam 17.2.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9500-High Performance Series Switches • Cisco Catalyst 9600 Series Switches <p>Cisco IOS XE Bengaluru 17.5.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9410 Series Switches <p>Cisco IOS XE Cupertino 17.7.1</p> <ul style="list-style-type: none"> • Cisco Catalyst 9500-X Series Switches

Feature	Release & Platform
Application Hosting: Front-Panel Network Port Access	Cisco IOS XE Gibraltar 16.12.1 <ul style="list-style-type: none"> • Cisco Catalyst 9300 Series Switches Cisco IOS XE Amsterdam 17.1.1 <ul style="list-style-type: none"> • Cisco Catalyst 9400 Series Switches Note Cisco Catalyst 9410R Switch does not support front-panel application-hosting.
Application Hosting: Front-Panel USB Port Access	Cisco IOS XE Gibraltar 16.12.1 <ul style="list-style-type: none"> • Cisco Catalyst 9300 Series Switches Cisco IOS XE Amsterdam 17.1.1 <ul style="list-style-type: none"> • Cisco Catalyst 9400 Series Switches Note Cisco Catalyst 9410R Switch does not support front-panel application-hosting.
Native Docker Container: Application Auto-Restart	Cisco IOS XE Amsterdam 17.2.1 <ul style="list-style-type: none"> • Cisco Catalyst 9300 Series Switches Cisco IOS XE Bengaluru 17.5.1 <ul style="list-style-type: none"> • Cisco Catalyst 9410 Series Switches
Application Hosting: ThousandEyes Integration	Cisco IOS XE Amsterdam 17.3.3 <ul style="list-style-type: none"> • Cisco Catalyst 9300 and 9300L Series Switches Cisco IOS XE Bengaluru 17.5.1 <ul style="list-style-type: none"> • Cisco Catalyst 9400 Series Switches Cisco IOS XE Bengaluru 17.6.1 <ul style="list-style-type: none"> • Cisco Catalyst 9300X Series Switches
ThousandEyes BrowserBot	Cisco IOS XE Bengaluru 17.6.1 <ul style="list-style-type: none"> • Cisco Catalyst 9300, 9300L, and 9300X Series Switches • Cisco Catalyst 9400 Series Switches
OpenFlow	

Feature	Release & Platform
OpenFlow	Cisco IOS XE Fuji 16.9.1 <ul style="list-style-type: none"> • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 Series Switches and Cisco Catalyst 9500-High Performance Series Switches
OpenFlow Power over Ethernet	Cisco IOS XE Gibraltar 16.12.1 <ul style="list-style-type: none"> • Catalyst 9300 Series Switches • Catalyst 9400 Series Switches
OpenFlow Rewrite Fields	Cisco IOS XE Bengaluru 17.4.1 <ul style="list-style-type: none"> • Cisco Catalyst 9300 Series Switches • Cisco Catalyst 9400 Series Switches • Cisco Catalyst 9500 Series Switches and Cisco Catalyst 9500-High Performance Series Switches
High Availability in OpenFlow Mode	Cisco IOS XE Bengaluru 17.5.1 <ul style="list-style-type: none"> • Cisco Catalyst 9400 Series Switches