Release Notes for the Catalyst 4900M Series Switch and the Catalyst 4948E Ethernet Switch, Cisco IOS Release 15.0(2)SG

Current Release
15.0(2)SG8—December 9, 2013

Prior Release
15.0(2)SG7, 15.0(2)SG6, 15.0(2)SG5, 15.0(2)SG4, 15.0(2)SG3, 15.0(2)SG2, 15.0(2)SG1, 15.0(2)SG

These release notes describe the features, modifications, and caveats for Cisco IOS Release 15.0(2)SG on the Catalyst 4900M switch and the Catalyst 4948E Ethernet Switch.

Cisco Catalyst 4900M Series is a premium extension to the widely deployed Catalyst 4948 Series top of rack Ethernet switches for data center server racks. Optimized for ultimate deployment flexibility, the Catalyst 4900M Series can be deployed for 10/100/1000 server access with 1:1 uplink to downlink oversubscription, mix of 10/100/1000 and 10 Gigabit Ethernet servers or all 10 Gigabit Ethernet servers in the same rack. The Catalyst 4900M is a 320Gbps, 250Mpps, 2RU fixed configuration switch with 8 fixed wire speed X2 ports on the base unit and 2 optional half card slots for deployment flexibility and investment protection. Low latency, scalable buffer memory and high availability with 1+1 hot swappable AC or DC power supplies and field replaceable fans optimize the Catalyst 4900M for any size of data center.

With Cisco IOS Release 12.2(54)XO, we Cisco introduced the Catalyst® 4948E Ethernet Switch, which is the first Cisco Catalyst E-Series data center switch built from the start to deliver class-leading, full-featured server-access switching. The switch offers forty-eight 10/100/1000-Gbps RJ45 downlink ports and four 1/10 Gigabit Ethernet uplink ports and is designed to simplify data center architecture and operations by offering service provider-grade hardware and software in a one rack unit (1RU) form factor optimized for full-featured top-of-rack (ToR) data center deployments.

The Cisco Catalyst 4948E Ethernet Switch builds on the advanced technology of the Cisco Catalyst 4948 Switches, the most deployed ToR switch in the industry, with more than 10 million ports deployed worldwide. The Cisco Catalyst E-Series doubles the uplink bandwidth and offers true front-to-back airflow with no side or top venting. Stringent airflow management reduces data center operating costs by providing strict hot-aisle and cold-aisle isolation. Exceptional reliability and serviceability are delivered with optional internal AC and DC 1+1 hot-swappable power supplies and a hot-swappable fan tray with redundant fans.

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For more information on Catalyst 4900M and Catalyst 4948E Ethernet Switch, visit: http://www.cisco.com/en/US/products/ps6021/index.html.

Note Although this release note and those for Catalyst 4500 Series Switch, the Catalyst 4900 Series Switch, the Catalyst ME 4900 Switch, are unique, they each refer to the same *Software Configuration Guide*, *Command Reference Guide*, and *System Message Guide.*

Contents

This publication consists of these sections:

Cisco IOS Software Packaging for the Catalyst 4900M Series Switch and the Catalyst 4948E Ethernet Switch

The Enterprise Services image supports Cisco Catalyst 4948E Ethernet Switch and Cisco Catalyst 4900M Series software features based on Cisco IOS Software 15.0(2)SG, including enhanced routing. BGP capability is included in the Enterprises Services package.

The IP Base image supports Open Shortest Path First (OSPF) for Routed Access and Enhanced Interior Gateway Routing Protocol (EIGRP) "limited" Stub Routing. The IP Base image does not support enhanced routing features such as Nonstop Forwarding/Stateful Switchover (NSF/SSO), BGP, Intermediate System-to-Intermediate System (IS-IS), Internetwork Packet Exchange (IPX), AppleTalk, Virtual Routing Forwarding (VRF-lite), GLBP, and policy-based routing (PBR).

The LAN Base image complements the existing IP Base and Enterprise Services images. It is focused on customer access and Layer 2 requirements and therefore many of the IP Base features are not required. The IP upgrade image is available if at a later date you require some of those features.

Starting with Cisco IOS Release 15.0(2)SG, on Catalyst 4900M and Catalyst 4948E, support for NEAT feature has been extended from IP Base to LAN Base and support for HSRP v2 IPV6 has been extended from Enterprise Services to IP Base.

Note The default image for WS-C4948E is LAN Base.

Cisco IOS Release Strategy

Customers with Catalyst 4948E Ethernet Switch and Catalyst 4900M series switches who need the latest hardware support and software features should migrate to Cisco IOS Release 15.0(2)SG. Cisco IOS Release 15.0(2)SG is the latest maintenance train base.

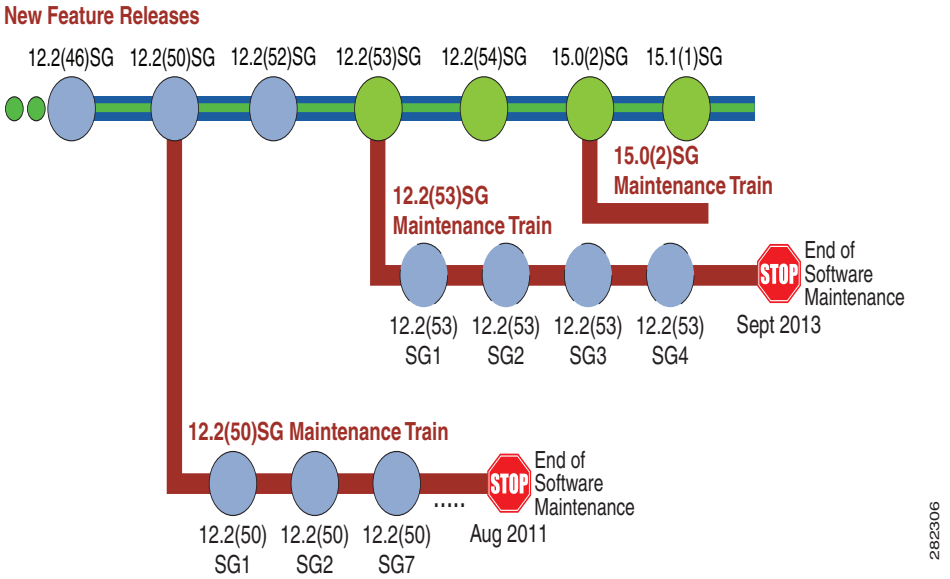
Cisco IOS Release 12.2(53)SG4 is the recommended release for customers who require a release with a maintenance train. The Cisco IOS Release 12.2(53)SG train includes support for OSPF for routed Access.

Cisco IOS Software Migration

Support for the Catalyst 4900M platform was introduced in 12.2(40)XO. Moving forward, the Cisco Catalyst 4900M platform has two maintenance trains.

Figure 1 displays the two active trains.

Figure 1 Software Release Strategy for the Catalyst 4900M Series Switch



Support

Support for Cisco IOS Software Release 15.0(2)SG follows the standard Cisco Systems® support policy, available at http://www.cisco.com/en/US/products/products_end-of-life_policy.html

System Requirements

This section describes the system requirements:

Supported Hardware on the Catalyst 4900M Switch and Catalyst 4948E Ethernet Switch

For Catalyst 4900, 4948E, and 4948E-F switch transceiver module compatibility information, see the url:

http://www.cisco.com/en/US/products/hw/modules/ps5455/products_device_support_tables_list.html

The following table lists the hardware supported on the Catalyst 4900M series switch.

Table 1 Supported Hardware for Catalyst 4900M Switch

Product Number (append with "=" for spares)	**Product Description**
WS-C4900M	Catalyst 4900M 8-port base system
WS-X4908-10G-RJ45	8-Port Wire-Speed 10 Gigabit Ethernet (RJ-45) **Note** This linecard is not supported on the Catalyst 4948E Ethernet Switch.
WS-X4920-GB-RJ45 (=)	Catalyst 4900M 20-port 10/100/1000 RJ-45 half card
WS-X4904-10GE (=)	Catalyst 4900M 4 port 10GbE half card with X2 interfaces
WS-X4908-10GE (=)	Catalyst 4900M 8 port 10GbE half card with X2 interfaces
WS-X4908-10G-RJ45	8 port 10 Gigabit linecard with 2 to 1 oversubscription
WS-X4994	Blank PS Cover
WS-X4994=	Blank PS Cover Spare
WS-X4993=	Spare Fantray
PWR-C49M-1000AC(=)	Catalyst 4900M AC Power Supply
PWR-C49M-1000AC/2	Catalyst 4900M AC Power Supply Redundant
PWR-C49M-1000DC(=)	Catalyst 4900M DC Power Supply
PWR-C49M-1000DC/2	Catalyst 4900M DC Power Supply Redundant
WS-X4992=	Catalyst 4900M Spare Fan Tray
WS-X4994	Blank PS Cover
WS-X4994=	Blank PS Cover Spare
WS-X4993=	Spare Fantray
CVR-X2-SFP=	TwinGig module

The following table lists the hardware supported on the Catalyst 4948E Ethernet Switch.

Table 2 Supported Hardware for Catalyst 4948E Ethernet Switch

Product Number (append with "=" for spares)	**Product Description**
WS-C4948E	48x 10/100/1000(RJ45)+4x 10GbE(SFP+), no p/s
WS-C4948E-S	48x 10/100/1000(RJ45)+4x10GbE(SFP+), IP Base IOS, AC p/s
WS-C4948E-E	48x 10/100/1000(RJ45)+4x10GbE(SFP+), Ent Ser IOS, AC p/s
WS-C4948E-BDL	Green Bundle 10x WS-C4948E
PWR-C49E-300AC-R=	Catalyst 4948E 300WAC power supply (spare)
PWR-C49E-300AC-R/2	Catalyst 4948E 300WAC redundant power supply
PWR-C49-300DC=	Catalyst 4948E 300WDC power supply (spare)
PWR-C49-300DC/2	Catalyst 4948E 300WDC redundant power supply (spare)
WS-X4993-F(=)	Cisco Catalyst 4948E spare fan tray rear exhaust

The following table lists the hardware supported on the Catalyst 4948E-F Ethernet Switch.

Table 3 Supported Hardware for Catalyst 4948E-F Ethernet Switch

Product Number (append with "=" for spares)	**Product Description**
WS-C4948E-F	48x 10/100/1000(RJ45)+4x 10GbE(SFP+), no p/s
WS-C4948E-F-S	48x 10/100/1000(RJ45)+4x10GbE(SFP+), IP Base IOS, AC p/s
WS-C4948E-F-E	48x 10/100/1000(RJ45)+4x10GbE(SFP+), Ent Ser IOS, AC p/s
WS-C4948E-F- BDL	Green Bundle 10x WS-C4948E
PWR-C49E-300AC-F=	Catalyst 4948E 300WAC power supply (spare)
PWR-C49E-300AC-F/2	Catalyst 4948E 300WAC redundant power supply
WS-X4993-F(=)	Cisco Catalyst 4948E spare fan tray rear exhaust

Supported Features

Note The default image for the Catalyst 4900M series switch is Cisco IOS Release 12.2(53)SG2.

Table 4 lists the Cisco IOS software features for the Catalyst 4948E Ethernet Switch and Catalyst 4900M series switches. For the full list of supported features, check the Feature Navigator application:

http://tools.cisco.com/ITDIT/CFN/

For information on MiBs support, please refer to this URL:

http://ftp.cisco.com/pub/mibs/supportlists/cat4000/cat4000-supportlist.html

Table 4 Cisco IOS Software Feature Set for the Catalyst 4948E Ethernet Switch and Catalyst 4900M Series Switches

Layer 2 Switching Features
Storm control
Storm Control: Per-Port Multicast Suppression
Multicast storm control
IP Source Guard
IP Source Guard for Static Hosts
PVRST+
Layer 2 transparent bridging[1]
Layer 2 MAC[2] learning, aging, and switching by software
Unicast MAC address filtering
VMPS[3] Client
Layer 2 hardware forwarding up to 102 Mpps
Layer 2 Control Policing (Not supported on Supervisor Engine 6-E)
Layer 2 switch ports and VLAN trunks
Spanning-Tree Protocol (IEEE 802.1D) per VLAN
802.1s and 802.1w
Layer 2 traceroute
Unidirectional Ethernet port
Per-VLAN spanning tree (PVST) and PVST+
Spanning-tree root guard
Spanning-tree Loop guard and PortFast BPDU Filtering
NEAT Enhancement: Re-Enabling BPDU Guard Based on User Configuration
Enable NEAT or LAN Base
Support for 9216 byte frames
Port security
Port security on Voice VLAN
Port security MAC Aging
Trunk Port Security
Unicast MAC Filtering
802.1X Multiple Domain Authentication and Multiple Authorization
802.1X with ACL Assignment and Redirect URLs
802.1X with per-user ACL and Filter-ID ACL
RADIUS-Provided Session Timeouts
RADIUS CoA
Multi-authentication and VLAN Assignment
MAC Move and Replace

Table 4 Cisco IOS Software Feature Set for the Catalyst 4948E Ethernet Switch and Catalyst 4900M Series Switches

802.1X with Guest VLANs
802.1X with MAC Authentication Bypass
802.1X with Web-Based Authentication
802.1X with Inaccessible Authentication Bypass
802.1X with User Distribution
802.1X with Unidirectional Controlled Port
802.1X with VLAN User Distribution
802.1X with Authentication Failed VLAN Assignment
802.1X with Voice VLAN Ports
802.1X with VLAN Assignment
802.1X with Fallback Authentication
802.1X with Periodic Reauthentication
802.1X with Multiple Hosts
802.1X Supplicant and Authenticator Switches with Network Edge Access Topology
802.1X with Port Security
Cisco TrustSec SGT Exchange Protocol (SXP) IPv4
Private VLANs
Private VLAN DHCP snooping
Private VLAN trunks
2-way Community Private VLANs
PVLAN over EtherChannel
IEEE 802.1Q-based VLAN encapsulation
Multiple VLAN access port
VLAN Trunking Protocol (VTP) and VTP domains
VTP v3
No. of VLAN support per switch: 2048 (for LAN Base) and 4096 (for IP Base)
Unidirectional link detection (UDLD) and aggressive UDLD
Sub-second UDLD (Fast UDLD)
SNMP V3 support for Bridge-MIB with VLAN indexing
IEEE 802.1ag - D8.1 standard Compliant CFM, Y.1731 multicast LBM / AIS / RDI / LCK, IP SLA for Ethernet
Ethernet OAM Protocol
Supported Protocols
DTP[4]
RIPv1[5] and RIPv2, Static Routing
EIGRP[6]
EIGRP Stub Routing

Table 4 Cisco IOS Software Feature Set for the Catalyst 4948E Ethernet Switch and Catalyst 4900M Series Switches

EIGRP Service Advertisement Framework[7]
OSPF[8]
BGP4[9]
BGP route-map Continue
BGP Neighbor Policy
MBGP[10]
MSDP[11]
ICMP[12] Router Discovery Protocol
Static routes
Classless interdomain routing (CIDR)
DVMRP[13]
NTP[14]
NTP master command
STP - Portfast BPDU Guard
STP- BPDU Filtering
STP - Root Guard
SCP[15]
WCCP Version 2
EtherChannel Features
Cisco EtherChannel technology - 10/100/1000 Mbps, 10 Gbps
Load balancing for routed traffic, based on source and destination IP addresses
Load sharing for bridged traffic based on MAC addresses
IEEE 802.1Q on all EtherChannels
Bundling of up to eight Ethernet ports
Trunk Port Security over EtherChannel
Link State Tracking
Additional Protocols and Features
Secure Copy Protocol (SCP)
Link Layer Discovery Protocol (LLDP)
Link Layer Discovery Protocol Media Endpoint Discovery (LLDP-MED)
PoEP via LLDP
DSCP/CoS via LLDP
Routed Jumbo Frame support
SPAN CPU port mirroring
SPAN packet-type filtering
SPAN destination in-packets option
SPAN ACL filtering

Table 4 Cisco IOS Software Feature Set for the Catalyst 4948E Ethernet Switch and Catalyst 4900M Series Switches

Enhanced VLAN statistics
Secondary addressing
Bootstrap protocol (BOOTP)
Authentication, authorization, and accounting using TACACS+ and RADIUS protocol
Critical Authorization for Voice and Data
Cisco Discovery Protocol (CDP)
CDP 2nd Port Status TLV
Propagation of Location Info over CDP
MAC Address-Table Move Update
Flex Link Bi-directional Fast Convergence
Flex Link VLAN Load-Balancing
Flex Links
Flex Links Interface Preemption
Network Mobility Services Protocol
Sticky port security
Voice VLAN Sticky Port Security
Cisco Group Management Protocol (CGMP) server support
HSRP[16] over Ethernet, EtherChannels - 10/100/1000Mbps, 10 Gbps
GLBP
Resilient Ethernet Protocol-no-edge-neighbor-enhancement
VRRP
IGMP[17] snooping version1, version 2, and version 3 (Full Support)
IGMP filtering
IGMP Querier
Multicast VRF-lite
VRF-aware IP services
VRF-aware TACACS+
Configurable IGMP Leave Timer
Multicast Source Discovery Protocol (MSDP)
SmartPort macros
Auto SmartPort macros
Port Aggregation Protocol (PagP)
802.3ad Link Aggregation (LACP)
802.3ad Link Aggregation (LACP) Port-Channel Standalone Disable
SSH version 1 and version 2[18]
show interface capabilities command
IfIndex persistence

Table 4 Cisco IOS Software Feature Set for the Catalyst 4948E Ethernet Switch and Catalyst 4900M Series Switches

Enhanced SNMP MIB support
SNMP[19] version 1, version 2, and version 3
SNMP version 3 (with encryption)
DHCP server and relay-agent
DHCP Snooping Statistics and SYSLOG
DHCP client autoconfiguration
DHCP Option 82 data Insertion
DHCP Option 82 Pass Through
DHCP Relay Agent for IPv6
DHCP Option 82 - Configurable Remote ID and Circuit ID
Port flood blocking
Router standard and extended ACLs [20]on all ports with no performance penalty
Downloadable ACL
VLAN ACL
PACL[21]
VACL
RACL
Unicast RPF
Local Proxy ARP
Dynamic ARP Inspection on PVLANs
Dynamic ARP Inspection
Per-VLAN CTI
ARP QoS
MQC
Ingress/Egress Policing
Ingress Rate Limiting
Egress Bandwidth Limiting/port shaping
Per VLAN Policy & Per Port Policer
802.1p Priority
Strict Priority Scheduling
Ingress/Egress Strict Priority Queuing (Expedite)
Shaped Round Robin (SRR)
Egress Shaped Queues
Ingress/egress Shared Queues
DSCP Mapping
DSCP Filtering
AutoQoS - VoIP

Table 4 Cisco IOS Software Feature Set for the Catalyst 4948E Ethernet Switch and Catalyst 4900M Series Switches

PBR[22]
Auto QoS 1.5
Trust Boundary Configuration
Dynamic Buffer Limiting (DBL)
Per-VLAN Control Traffic Intercept
Table Map Based Classification
Interface Index Persistence
UDI - Unique Device Identifier
Per-port QoS[23] rate-limiting and shaping
QoS for IPv6
Per-port Per-VLAN QoS
Energy Wise
Two-Rate Three-Color Policing
Dynamic Multi-Protocol Ternary Content Addressable Memory
SmartPort macros
802.1s standards compliance
Flexible Authentication Sequencing
Multi-Authentication
Open Authentication
Web Authentication
Local Web Authentication (EPM syslog and Common session ID)
PPPoE Intermediate Agent
Identity ACL Policy Enforcement[24]
Identity 4.1 Network Edge Access Topology
IPv6 routing - unicast routing "RIPng"
IPv6 Neighbor Discovery Throttling
IPv6 MLDv1 & v2 SNooping
IPv6 Host support (- IPv6 support: Addressing; IPv6: Option processing, Fragmentation, ICMPv6,
TCP/UDP over IPv6; Applications: Ping/Traceroute/VTY/SSH/TFTP, SNMP for IPv6 objects)
IPv6 ACLs
IPv6 Management Services (CDP over IPv6, SSHv2 over IPv6)
IPv6: MLDv1/v2
IPv6:CEFv6
IPv6:MLD Snooping
IPv6 PACL
IPv6 RA Guard
IPv6 Interface Statistics

Table 4 Cisco IOS Software Feature Set for the Catalyst 4948E Ethernet Switch and Catalyst 4900M Series Switches

Non-stop Forwarding Awareness
Non-stop Forwarding Awareness for EIGRP-stub in IP base for all supervisor engines
BGP MIB
OSPF Fast Convergence[25]
AutoRP
Service-Aware Resource Allocation
TwinGig Converter Module
FAT File System
EEM 3.2[26]
VSS client with PagP+
Ethernet Management Port
Enhanced Object Tracking subfeatures: • HSRP with EOT • VRRP with EOT • GLBP with EOT • IP SLA with EOT • Reliable Backup Static Routing with EOT
ANCP Client
CPU Optimization for Layer 3 Multicast Control Packets
Bidiectional PIM
OSPF and EIGRP Fast Convergence
Inactivity Timer
boot config command
Crashdump enhancement
Unicast MAC filtering
Energy Wise
DHCPv6 Ethernet Remote ID option
DHCPv6 Relay - Persistent Interface ID option
DHCPv6 Relay Agent notification for Prefix Delegation
PIM SSM Mapping
VRF lite NSF support with routing protocols OSPF/EIGRP/BG
Layer 2 Tunneling Protocol
Online Diagnostics
PIM Accept Register - Rogue Multicast Server Protection[27]
Configuration Rollback
IP Multicast Load Splitting (Equal Cost Multipath (ECMP) using S, G and Next-hop)
OSPF for Routed Access

Table 4 Cisco IOS Software Feature Set for the Catalyst 4948E Ethernet Switch and Catalyst 4900M Series Switches

Archiving crashfiles
Cisco Network Assistant (CNA)
Per-VLAN Learning
XML Programmatic Interface
VLAN Mapping (VLAN Translation)[28]
GOLD Online Diagnostics (Sup 6-E and 6L-E only)
IPSG for Static Hosts
Layer Control Packet
Duplication Location Reporting Issue
Netflow-lite (on Catalyst 4948E and Catalyst 4948E-F in IP Base or higher)

1. Hardware-based transparent bridging within a VLAN
2. MAC = Media Access Control
3. VMPS = VLAN Management Policy Server
4. DTP = Dynamic Trunking Protocol
5. RIP = Routing Information Protocol
6. EIGRP = Enhanced Interior Gateway Routing Protocol
7. Refer to the URL:http://www.cisco.com/en/US/docs/ios/saf/configuration/guide/saf_cg.html
8. OSPF = Open Shortest Path First
9. BGP4 = Border Gateway Protocol 4
10. MBGP = Multicast Border Gateway Protocol
11. MSDP = Multicast Source Discovery Protocol
12. ICMP = Internet Control Message Protocol
13. DVMRP = Distance Vector Multicast Routing Protocol
14. NTP = Network Time Protocol
15. SCP = Secure Copy Protocol
16. HSRP = Hot Standby Router Protocol
17. IGMP = Internet Group Management Protocol
18. SSH = Secure Shell Protocol
19. SNMP = Simple Network Management Protocol
20. ACLs = Access Control Lists
21. PACL = Port Access Control List
22. Policy-based Routing
23. QoS = Quality of Service
24. filter-ID and per-user ACL
25. The Catalyst 4500 series switch supports Fast Hellos, ISPF, and LSA Throttling.
26. EEM = Embedded Event Manager: Refer to the URL: http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm_eem_3.2.html
27. The route-map keyword is not supported.
28. WS-C4948-10GE does not support VLAN mapping.

Unsupported Features

These features are not supported in Cisco IOS Release 15.0(2)SG for the Cisco Catalyst 4948E Ethernet Switch and the Catalyst 4900M series switch:

- The following ACL types:
  - Standard Xerox Network System (XNS) access list
  - Extended XNS access list
  - DECnet access list
  - Protocol type-code access list
- ADSL and Dial access for IPv6
- AppleTalk EIGRP (use native AppleTalk routing instead)
- Auto RP
- AutoQoS - VoIP
- Bridge groups
- CEF Accounting
- CER for E-911 Support
- CFM CoS
- Cisco-Port-QoS-MIB
- Cisco IOS software IPX ACLs:
  - <1200-1299> IPX summary address access list
- Cisco IOS software-based transparent bridging (also called “fallback bridging”)
- Connectionless (CLNS) routing; including IS-IS routing for CLNS. IS-IS is supported for IP routing only.
- DLSw (data-link switching)
- Global QoS (enable QoS)
- HTTP Software Upgrade
- IGRP (use EIGRP instead)
- **isis network point-to-point** command
- ISSU
- Kerberos support for access control
- LLDP HA
- Lock and key
- MAC Address Notification
- MAC notification MIB support
- NAC L2 IP - Inaccessible authentication bypass
- NAT-PT for IPv6
- NSF with SSO
- Packet Based Storm Control

- PIM Stub in IP Base
- Real Time DiagNosis (GOLD-Lite)
- Reflexive ACLs
- Routing IPv6 over an MPLS network
- RPR
- Time Domain Reflectometry
- Two-way community VLANs in private VLANs
- UniDirectional Link Routing (UDLR)

Orderable Product Numbers

- S49EES-15002SG(=)—Cisco Catalyst 4900 IOS Enterprise Services w/o CRYPTO
- S49MES-15002SG(=)—Cisco Catalyst 4900M IOS Enterprise Services w/o CRYPTO
- S49EESK9-15002SG(=)—Cisco Catalyst 4900 IOS Enterprise Services SSH
- S49MESK9-15002SG(=)—Cisco Catalyst 4900M IOS Enterprise Services SSH
- S49EIPB-15002SG(=)—Cisco Catalyst 4900 IOS IP Base w/o CRYPTO
- S49MIPB-15002SG(=)—Cisco Catalyst 4900M IOS IP Base w/o CRYPTO
- S49EIPBK9-15002SG(=)—Cisco Catalyst 4900 IOS IP Base SSH
- S49MIPBK9-15002SG(=)—Cisco Catalyst 4900M IOS IP Base SSH
- S49ELB-15002SG(=)—Cisco Catalyst 4900 IOS LAN Base w/o CRYPTO
- S49ELBK9-15002SG(=)—Cisco Catalyst 4900 IOS LAN Base SSH

New and Changed Information

These sections describe the new and changed information for the Catalyst 4948E Ethernet Switch and the Catalyst 4900M series switch running Cisco IOS software:

New Hardware Features in Release 15.0(2)SG1

Release 15.0(2)SG1 provides no new hardware on the Catalyst 4500 series switch.

New Software Features in Release 15.0(2)SG1

Release 15.0(2)SG1 provides the following new software feature on the Catalyst 4500 series switch.

- A new option for Layer 2 control plane QoS, **eapol**, enabling customers to police EAPLOL packets based on ethertype.
- IEEE 802.3ad Link Aggregation (LACP) Port-Channel Standalone Disable

New Hardware Features in Release 15.0(2)SG

Release 15.0(2)SG provides the following new hardware for Catalyst 4900M, Catalyst 4948E Ethernet Switch, and Catalyst 4948E-F Ethernet Switch:

- SFP-10G-ER—10GBASE-ER SFP+ transceiver module for SMF, 1550-nm, LC duplex connector
- SFP-10G-ZR—10GBASE-ZR SFP+ transceiver module for SMF, 1550-nm, LC duplex connector

Release 15.0(2)SG provides the following new hardware for Catalyst 4948E Ethernet Switch, and Catalyst 4948E-F Ethernet Switch:

- DWDM SFP Transceivers (8 additional wavelengths) (dual LC/PC connector):
  - DWDM-SFP-6141= (Cisco 1000BASE-DWDM SFP 1561.42 nm)
  - DWDM-SFP-5736= (Cisco 1000BASE-DWDM SFP 1557.36 nm)
  - DWDM-SFP-5332= (Cisco 1000BASE-DWDM SFP 1553.33 nm)
  - DWDM-SFP-4931= (Cisco 1000BASE-DWDM SFP 1549.32 nm)
  - DWDM-SFP-4532= (Cisco 1000BASE-DWDM SFP 1545.32 nm)
  - DWDM-SFP-4134= (Cisco 1000BASE-DWDM SFP 1541.35 nm)
  - DWDM-SFP-3739= (Cisco 1000BASE-DWDM SFP 1537.40 nm)
  - DWDM-SFP-3346= (Cisco 1000BASE-DWDM SFP 1533.47 nm)

New Software Features in Release 15.0(2)SG

Release 15.0(2)SG provides the following Cisco IOS software features for Catalyst 4900M and Catalyst 4948E Ethernet Switch:

- 2-way Community Private VLANs ("Configuring Private VLANs" chapter)
- Call Home message using dedicated interface (“Configuring Call Home” chapter)
- CPU Optimization for Layer 3 Multicast Control Packets (“Configuring Network Security with ACLs” chapter)
- Critical Authorization for Voice and Data (“Configuring 802.1X Port-Based Authentication 802.1X” chapter)
- Duplication Location Reporting Issue

  For information on the reporting issue, refer to the following URL:

  http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm_cdp_discover.html
- Enable NEAT for LAN Base (“Configuring 802.1X Port-Based Authentication” chapter)

- IEEE 802.1ag - D8.1 standard Compliant CFM, Y.1731 multicast LBM / AIS / RDI / LCK, IP SLA for Ethernet (“Configuring Ethernet OAM and CFM” chapter)
- Multi-authentication and VLAN Assignment (“Configuring 802.1X Port-Based Authentication 802.1X” chapter)
- NEAT Enhancement: Re-Enabling BPDU Guard Based on User Configuration (“Configuring 802.1X Port-Based Authentication” chapter)
- Netflow-lite (“Configuring Netflow-lite” chapter; supported only on Catalyst 4948E and Catalyst 4948E-F in IP Base or higher)
- Propagation of Location Info over CDP

  For information on configuring CDP Location TLV, refer to the following URL:

  http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm_cdp_discover.html
- PVLAN over EtherChannel ("Configuring Private VLANs" chapter)
- Resilient Ethernet Protocol-no-edge-neighbor-enhancement (“Configuring Resilient Ethernet Protocol” chapter)
- WCCP Version 2 (“Configuring WCCP Version 2 Services” chapter)

Minimum and Recommended ROMMON Release

Table 5 lists the minimum and recommended ROMMON releases for Catalyst 4900M switch and Catalyst 4948E Ethernet Switch.

Table 5 Minimum and Recommended ROMMON Release for Catalyst 4900M and Catalyst 4948E

	Minimum ROMMON Release
Catalyst 4900M Switch	12.2(40r)XO
Catalyst 4948E Ethernet Switch	12.2(44r)SG8

Note ROMMON Release 12.2(44r)SG5 is the minimum required to run Cisco IOS Release 15.0(2)SG and is recommended for other releases.

Limitations and Restrictions

Following limitations and restrictions apply to the Cisco Catalyst 4948E Ethernet Switch and the Catalyst 4900M series switch:

- The WS-X4920-GB-RJ45 card performs at wire speed until it operates at 99.6% utilization. Beyond this rate, the card will lose some packets.
- Compact Flash is not supported on a Cisco Catalyst 4900M switch running Cisco IOS Release 12.2(40)XO. Attempting to use Compact Flash may corrupt your data.

- IP classful routing is not supported; do not use the **no ip classless** command; it will have no effect, as only classless routing is supported. The command **ip classless** is not supported as classless routing is enabled by default.
- A Layer 2 LACP channel cannot be configured with the spanning tree PortFast feature.
- Netbooting using a boot loader image is not supported. See the "Troubleshooting" section on page 93 for details on alternatives.
- An unsupported default CLI for mobile IP is displayed in the HSRP configuration. Although this CLI will not harm your system, you might want to remove it to avoid confusion.

  Workaround: Display the configuration with the **show standby** command, then remove the CLI. Here is sample output of the **show standby GigabitEthernet1/1** command:

  ```
  switch(config)# interface g1/1
  switch(config)# no standby 0 name (0 is hsrp group number)
  ```

- For HSRP "preempt delay" to function consistently, you must use the **standby delay minimum** command. Be sure to set the delay to more than 1 hello interval, thereby ensuring that a hello is received before HSRP leaves the initiate state.

  Use the **standby delay reload** option if the router is rebooting after reloading the image.
- You can run only .1q-in-.1q packet pass-through with the Catalyst 4948E Ethernet Switch and Catalyst 4900M series switch.
- For PVST, on Catalyst 4948E Ethernet Switch and Catalyst 4948E series switch VLANs, Cisco IOS Release 12.2(t54)SG supports a maximum of 3000 spanning tree port instances. If you want to use more than this number of instances, you should use MST rather than PVST.
- Because the Catalyst 4948E Ethernet Switch and the Catalyst 4900M series switch supports the FAT filesystem, the following restrictions apply:
  - The **verify** and **squeeze** commands are not supported.
  - The **rename** command is supported in FAT file system.

    For the Catalyst 4948E Ethernet Switch and the Catalyst 4900M series switch, the **rename** command has been added for bootflash and slot0. For all other supervisor engines, the **rename** command is supported for nvram devices only.
  - the **fsck** command is supported for slot0 device. It is not supported in the file systems on supervisor engines other than 6-E.
  - In the FAT file system, the IOS **format bootflash:** command erases user files only. It does not erase system configuration.
  - The FAT file system supports a maximum of 63 characters for file/directory name. The maximum for path length is 127 characters.
  - The FAT file system does not support the following characters in file/directory names:{}#%^ and space characters.
  - The FAT file system honors the Microsoft Windows file attribute of "read-only" and "read-write", but it does not support the Windows file "hidden" attribute.
  - Supervisor Engine 6-E uses the FAT file system for compact flash (slot0). If a compact flash is not formatted in FAT file system (such as compact flash on a supervisor engine other than 6-E), the switch does not recognize it.
- The Fast Ethernet port (10/100) on the supervisor module is active in ROMMON mode only.
- If an original packet is dropped due to transmit queue shaping and/or sharing configurations, a SPAN packet copy can still be transmitted on the SPAN port.

- All software releases support a maximum of 32,768 IGMP snooping group entries.
- Use the **no ip unreachables** command on all interfaces with ACLs configured for performance reasons.
- The threshold for the Dynamic Arp Inspection err-disable function is set to 15 ARP packets per second per interface. You should adjust this threshold depending on the network configuration. The CPU should not receive DHCP packets at a sustained rate greater than 1000 pps.
- If you first configure an IP address or IPv6 address on a Layer 3 port, then change the Layer 3 port to a Layer 2 port with the **switchport** command, and finally change it back to a Layer 3 port, the original IP/IPv6 address will be lost.
- If a Catalyst 4948E Ethernet Switch or a Catalyst 4900M series switch requests information from the Cisco Secure Access Control Server (ACS) and the message exchange times out because the server does not respond, a message similar to this appears:

  ```
  00:02:57: %RADIUS-4-RADIUS_DEAD: RADIUS server 172.20.246.206:1645,1646 is not
  responding.
  ```

  If this message appears, check that there is network connectivity between the switch and the ACS. You should also check that the switch has been properly configured as an AAA client on the ACS.
- For IP Port Security (IPSG) for static hosts, the following apply:
  - As IPSG learns the static hosts on each interface, the switch CPU may hit 100 per cent if there are a large number of hosts to learn. The CPU usage will drop once the hosts are learned.
  - IPSG violations for static hosts are printed as they occur. If multiple violations occur simultaneously on different interfaces, the CLI displays the last violation. For example, if IPSG is configured for 10 ports and violations exist on ports 3,6 and 9, the violation messages are printed only for port 9.
  - Inactive host bindings will appear in the device tracking table when either a VLAN is associated with another port or a port is removed from a VLAN. So, as hosts are moved across subnets, the hosts are displayed in the device tracking table as INACTIVE.
  - Autostate SVI does not work on EtherChannel.
- When ipv6 is enabled on an interface via any CLI, it is possible to see the following message:

  ```
  % Hardware MTU table exhausted
  ```

  In such a scenario, the ipv6 MTU value programmed in hardware will be different from the ipv6 interface MTU value. This will happen if there is no room in the hw MTU table to store additional values.

  You must free up some space in the table by unconfiguring some unused MTU values and subsequently disable/re-enable ipv6 on the interface or reapply the MTU configuration.
- To stop IPSG with Static Hosts on an interface, use the following commands in interface configuration submode:

  ```
  Switch(config-if)# no ip verify source
  Switch(config-if)# no ip device tracking max"
  ```

  To enable IPSG with Static Hosts on a port, issue the following commands:

  ```
  Switch(config)# ip device tracking ****enable IP device tracking globally
  Switch(config)# ip device tracking max <n> ***set an IP device tracking maximum on int
  Switch(config-if)# ip verify source tracking [port-security] ****activate IPSG on port
  ```

Caution If you only configure the **ip verify source tracking [port-security]** interface configuration command on a port without enabling IP device tracking globally or setting an IP device tracking maximum on that interface, IPSG with Static Hosts will reject all the IP traffic from that interface.

Note The issue above also applies to IPSG with Static Hosts on a PVLAN Host port.

- Class-map match statements using **match ip prec | dscp** match only IPv4 packets whereas matches performed with **match prec | dscp** match both IPv4 and IPv6 packets.
- IPv6 QoS hardware switching is disabled if the policy-map contains IPv6 ACL and match cos in the same class-map with the ipv6 access-list has any mask range between /81 and /127. It results in forwarding packets to software which efficiently disable the QoS.
- Management port does not support *non-VRF* aware features.
- When you enter the **permit any any ?** command you will observe the **octal** option, which is unsupported in Cisco IOS Release 12.2(52)SG.

  CSCsy31324
- A Span destination of fa1 is not supported.
- The "keepalive" CLI is not supported in interface mode on the switch, although it will appear in the running configuration. This behavior has no impact on functionality.
- TDR is only supported on interfaces Gi1/1 through Gi1/48, at 1000BaseT under open or shorted cable conditions. TDR length resolution is +/- 10 m. If the cable is less than 10 m or if the cable is properly terminated, the TDR result displays "0" m. If the interface speed is not 1000BaseT, an "unsupported" result status displays. TDR results will be unreliable for cables extended with the use of jack panels or patch panels.
- Upstream ports on the Catalyst 4900M and Catalyst 4948E Ethernet Switch support flow control auto negotiation in 1G mode only, and flow control is forced in 10G mode. If the interface is configured to auto-negotiate the flow control, and the interface is operating in 10G mode, the system forces flow control to ON and does not auto-negotiate.
- The following guidelines apply to Fast UDLD:
  - Fast UDLD is disabled by default.
  - Configure fast UDLD only on point-to-point links between network devices that support fast UDLD.
  - You can configure fast UDLD in either normal or aggressive mode.
  - Do not enter the link debounce command on fast UDLD ports.
  - Configure fast UDLD on at least two links between each connected network device. This reduces the likelihood of fast UDLD incorrectly error disabling a link due to false positives.
  - Fast UDLD does not report a unidirectional link if the same error occurs simultaneously on more than one link to the same neighbor device.
  - The Catalyst 4948E Ethernet Switch and the Catalyst 4900 Ethernet switch support fast UDLD on a maximum of 32 ports.
- A XML-PI specification file entry does not return the desired CLI output.

The outputs of certain commands, such as **show ip route** and **show access-lists**, contain non-deterministic text. While the output is easily understood, the output text does not contain strings that are consistently output. A general purpose specification file entry is unable to parse all possible output.

Workaround (1):

While a general purpose specification file entry may not be possible, a specification file entry might be created that returns the desired text by searching for text that is guaranteed to be in the output. If a string is guaranteed to be in the output, it can be used for parsing.

For example, the output of the show ip access-lists SecWiz_Gi3_17_out_ip command is this:

```
Extended IP access list SecWiz_Gi3_17_out_ip
    10 deny ip 76.0.0.0 0.255.255.255 host 65.65.66.67
    20 deny ip 76.0.0.0 0.255.255.255 host 44.45.46.47
    30 permit ip 76.0.0.0 0.255.255.255 host 55.56.57.57
```

The first line is easily parsed because access list is guaranteed to be in the output:

```
<Property name="access list" alias="Name" distance="1.0" length="-1" type="String"
/>
```

The remaining lines all contain the term host. As a result, the specification file may report the desired values by specifying that string. For example, this line

```
<Property name="host" alias="rule" distance="s.1" length="1" type="String" />
```

will produce the following for the first and second rules

```
<rule>
    deny
</rule>
```

and the following for the third statement

```
<rule>
    permit
<rule>
```

Workaround (2):

Request the output of the **show running-config** command using NETCONF and parse that output for the desired strings. This is useful when the desired lines contain nothing in common. For example, the rules in this access list do not contain a common string and the order (three permits, then a deny, then another permit), prevent the spec file entry from using permit as a search string, as in the following example:

```
Extended MAC access list MACCOY
    permit 0000.0000.ffef ffff.ffff.0000 0000.00af.bcef ffff.ff00.0000 appletalk
    permit any host 65de.edfe.fefe xns-idp
    permit any any protocol-family rarp-non-ipv4
    deny   host 005e.1e5d.9f7d host 3399.e3e1.ff2c dec-spanning
    permit any any
```

The XML output of **show running-config** command includes the following, which can then be parsed programmatically, as desired:

```
<mac><access-list><extended><ACLName>MACCOY</ACLName></extended></access-list></mac>
    <X-Interface> permit 0000.0000.ffef ffff.ffff.0000 0000.00af.bcef ffff.ff00.0000
appletalk</X-Interface>
    <X-Interface> permit any host 65de.edfe.fefe xns-idp</X-Interface>
    <X-Interface> permit any any protocol-family rarp-non-ipv4</X-Interface>
```

```
    <X-Interface> deny   host 005e.1e5d.9f7d host 3399.e3e1.ff2c
dec-spanning</X-Interface>
    <X-Interface> permit any any</X-Interface>
```

- Although the Catalyst 4900M series switch still supports legacy 802.1X commands used in Cisco IOS Release 12.2(46)SG and earlier releases (that is, they are accepted on the CLI), they do not display in the CLI help menu.
- Current IOS software cannot support filenames exceeding 64 characters.
- Although you can configure subsecond PIM query intervals on Catalyst 4500 platforms, such an action represents a compromise between convergence (reaction time) and a number of other factors (number of mroutes, base line of CPU utilization, CPU speed, processing overhead per 1 m-route, etc.). You must account for those factors when configuring subsecond PIM timers. We recommend that you set the PIM query interval to a minimum of 2 seconds. By adjusting the available parameters, you can achieve flawless operation; that is, a top number of multicast routes per given convergence time on a specific setup.
- With Cisco IOS Release XE 3.2.1SG, **memory** configuration is enabled:

```
Switch(config)# memory ?
  chunk    chunk related configuration
  free     free memory low water mark
  record   configure memory event/traceback recording options
  reserve  reserve memory
  sanity   Enable memory sanity
```

  This configuration had been removed erroneously in a prior release.
- With Cisco IOS Release 12.2(53)SG3 (and 12.2(54)SG), we changed the default behavior such that your single supervisor, RPR, or fixed configuration switch does not reload automatically. To configure automatic reload, you must enter the **diagnostic fpga soft-error recover aggressive** command. (CSCth16953)
- For any configuration where the source-interface keyword is used, if you provide an SVI that is associated with a secondary private VLAN, configuration involving the secondary VLAN may be lost when the switch is reloaded. In such scenarios, always use the primary private VLAN.

Caveats

Caveats describe unexpected behavior in Cisco IOS releases. Caveats listed as open in a prior release are carried forward to the next release as either open or resolved.

Note For the latest information on PSIRTS, refer to the Security Advisories on CCO at the following URL:

http://tools.cisco.com/security/center/publicationListing

Open Caveats in Cisco IOS Release 15.0(2)SG8

This section lists the open caveats in Cisco IOS Release 15.0(2)SG8:

- On rare occasions, if you use an X2 SR transceiver on a WS-X4706-10GE running Cisco IOS Release 12.2(40)SG, you will observe CRC errors after a reload or power cycle when you insert the card or the X2.

Workaround: Reinsert the X2. CSCsk43618

- If a class-map is configured with **exceed-action drop**, re-configuring the same class-map with **exceed-action transmit** causes class-map configurations to conflict for the same class-map.

  Workaround: If you plan to change a class-map action, such as **exceed-action**, you meed to remove the class-map with the **no class c1** command under policy-map submode. Then, apply the new class-map with the updated changes. CSCsk70826)

- If *burst* is not explicitly configured for a single rate policer, the **show policy-map command** displays an incorrect burst value.

  Workaround: Enter the **show policy-map interface** command. CSCsi71036

- When you enter the **show policy-map vlan** *vlan* command, unconditional marking actions that are configured on the VLAN are not shown.

  Workaround: None. However, if you enter the **show policy-map** *name*, the unconditional marking actions are displayed. CSCsi94144

- IGMP snooping entries are active even after disabling IGMP snooping globally and per VLAN.

  Workarounds: Disable IGMP snooping on all the relevant VLANs before disabling it globally.

- IPv6 entries are active in the CAM; the CPU receives IPv6 packets.

  Workaround: Unconfigure any generic QOS policies from the system. The QoS policies with the **match any** attribute cause IPv6 entries to become active. If the switch is a pure Layer 2 device, remove the generic protocol family attributes and narrow it to the protocol family.

  CSCsq84796

- In Cisco IOS Release 12.2(54)SG, if an etherchannel is a member of a flexlink pair, then static MAC addresses configured on the EtherChannel are not moved to the alternate port when the EtherChannel fails (flexlink failure)

  Workaround: None. CSCsq99468

- When a CFM Inward Facing MEP(IFM) is configured on a VLAN that is not allocated on a switch port that is DOWN, the **show ethernet cfm maintenance-points local** command displays the IFM CC Status as **Inactive**. Then, you allocate the VLAN, the CC-status remains **Inactive**.

  You only see this symptom if you did not allocate a VLAN before you configure the IFM, then at a later time allocate the same VLAN.

  Workaround: Unconfigure, then reconfigure the IFM on the port.

- An IP unnumbered configuration is lost after a reload.

  Workarounds: Do one of the following:

  – After a reload, copy the startup-config to the running-config.

  – Use a loopback interface as the target of the **ip unnumbered** command

  – Change the CLI configuration such that during bootup, the router port is created first.

  CSCsq63051

- In SSO mode on the Catalyst 4900M switch, when a port-channel is created, deleted, and re-created on an active supervisor engine with the same channel-number, the standby port-channel state goes out of sync. After a switch over, the following message displays:

  ```
  %PM-4-PORT_INCONSISTENT: STANDBY:Port is inconsistent:
  ```

  Workaround: When the port channel starts to flap, enter **shut** and **no shut** on the port channel. After the first switchover and after deleting the portchannel, create a new channel. CSCsr00333

- Duplicate serial number error messages are reported on switching One X Convertor with SFP+, SFP+, X2 to another port, the inserted port enters a faulty status.

  This problem impacts X2, OneX converters, and SFP+ on the Supervisor Engine 6-E, and linecards.

  Workaround: Remove and reinsert the One X Convertor with SFP+, SFP+ alone, or X2 after some perceivable delay. CSCsu43461

- VTP databases do not propagate through promiscuous trunk ports. If only promiscuous trunks are configured, users will not see the VLAN updates on the other switches in the VTP domain.

  Workaround: For VTP database propagation, configure ISL/dot1q trunk port. CSCsu43445

- After posture validation succeeds, the following benign traceback messages may appear after you unconfigure the global RADIUS and IP device tracking commands:

```
%SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
eou_auth 4.1.0.101   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
106617F8
%SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
eou_auth 4.1.0.102   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
106617F8
```

  This applies to classic or E-series Catalyst 4500 supervisor engines running Cisco IOS Release 12.2(50)SG

  Workaround: None. CSCsw14005

- On a Catalyst 4900M switch, the host's MAC address is not synchronized to the standby supervisor engine after you unconfigure 802.1X on the port and reconnect the host to a IP phone (with CDP port status TLV support) that is connected to the switch.

  If the switch were to run a supervisor switchover while in this state, the host's MAC address would not be present in the new active supervisor engine's MAC address table, causing possible connectivity interruption on the host.

  Workaround: Enter the **shutdown** command, followed by the **no shutdown** command on the interface. This triggers relearning and synchronizing of the host's MAC to the standby supervisor engine. CSCsw91661

- When multiple streams of CRC errors are encountered on WS-C4900M configured with OAM Configuration of monitoring the frame errored seconds, OAM does not always report the value of errored frame seconds correctly.

  To observe this issue, the following CLIs are configured with window size as the period for monitoring the errors and a low threshold equal to the number of CRC errored seconds seen/expected.

```
ethernet oam link-monitor frame-seconds window
ethernet oam link-monitor frame-seconds threshold low
```

  Workaround: Configure a lower value of low threshold such that the frame errors are seen divided into the expected number of frame errored seconds. CSCsy37181

- If you simultaneously apply a service-policy to a port in the output direction and a service-policy to a vlan-range under that port in the output direction, the class-map hit counters in the output of the **show policy-map interface** command are wrong.

  Workaround: None.

  The queue transmit counters as well as the policing statistics (if any) are correct. CSCsz20149

- On wireless control system (WCS), some device information is incorrectly displayed for PCs sitting behind an lldp-med capable phone. Specifically, WCS displays the phone's serial number, model number, and software version in the PC's device information. All other information about the PC is correctly displayed on WCS.

  This only happens when the switch is running network mobility service protocol (nmsp). It does not happen if the phone is CDP enabled.

  Workaround: Use VLAN ID or name to differentiate the IP phone and the PC sitting behind the phone on the WCS. Specifically, the IP phone is detected on the voice VLAN, and the displayed information of serial number, model number, and software version is correct. However, a PC sitting behind the phone is detected on a data VLAN, and the displayed device information is wrong and should be ignored. CSCsz34522

- When you configure **switchport block multicast** on a switch running Cisco IOS Release 12.2(53)SG1 and later or 12.2(50)SG6 and later, Layer 2 multicast is not blocked.

  Prior to Cisco IOS Release 12.2(53)SG1, 12.2(50)SG6, the **switchport block multicast** command would block IP Multicast, Layer 2 multicast, and broadcast traffic (CSCta61825).

  Workaround: None. CSCtb30327

- If *time* is not specified in the **link debounce** command, the default value depends on the supervisor engine. The default is 10 mS for 4948E, C4900M, Supervisor Engine 6-E, and Supervisor Engine 6L-E. The default is 100 mS for all other supervisor engines.

  Workaround: None. CSCte51948

- Fast UDLD in aggressive mode may incorrectly errdisable a link in the following scenarios:
  - Fast UDLD peer switch performs SSO.
  - Fast UDLD peer switch is reloaded.
  - One or more interfaces on a fast UDLD peer switch are shut down (or the port mode changes from switchport to routed, and vice versa).

Note To reduce the likelihood of this event, connect at least two physical interfaces between fast UDLD peer switches. You must configure the interfaces with the same neighbor fast hello interval.

  Workarounds:
  - Reset the error disabled links with the **udld reset** command.
  - Configure error disable recovery with the commands **errdisable recovery cause udld** and **errdisable recovery interval** *value (*between 30 and 86400 sec).
  - Manually clear errdisable on the local interface with a **shutdown** then a **no shutdown**.

  CSCtc99007

- On a peer interface on a Catalyst 4948E Ethernet Switch, if errdisabled mode flap detection is set to a very small number (such as 2 flaps in 10 sec), a 10GE link flap may cause the peer interface to enter the errdisabled state.

  Workarounds: The Cisco switch default link-flap detection value is 5 flaps in 10 seconds. Use the default value or larger numbers. CSCtg07677

- Before large PACLs are fully loaded in hardware, you might observe a false completion messages like the following:

```
Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-HWPROGSUCCESS: Input Security: pacl - now
fully loaded in hardware *Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-ALLACLINHW: All
configured ACLs now fully loaded in hardware - hardware switching / QoS restored.
```

This issue does not impact functionality.

Workaround: None.

You must wait for the ACLs to be programmed before performing other TCAM related changes. CSCtd57063

- When you have enabled EPM logging and the client is authenticated via MAB or Webauth, the value of AUTHTYPE is DOT1X in EPM syslog messages irrespective of the authentication method.

  Similarly, the show epm sessions command always displays the authentication method as DOT1X.

  Workaround: To view the authentication method used for a client, enter the **show authentication sessions** command. CSCsx42157

- With CFM enabled globally as well as on an ingress interface, CFM packets received on the interface are not policed with hardware control plane policing.

  Workaround: None. CSCso93282

- With a NEAT configuration on an ASW (Catalyst 4500 series switch) connected to an SSW (Catalyst 3750 series switch) serving as a root bridge and with redundant links between ASW and SSW, the following occur:

  – STP does not stabilize.

  – The SVI (network) is unreachable. If an SVI exists on the ASW, because of the STP flap in the setup as well as the CISP operations, the SVI MAC configuration on the ASW is incorrect.

  Workaround: Configure the ASW or any other switch upstream as the root-bridge for all the VLANs. CSCtg71030

- When a packet sampling monitor is applied on a Layer 3 port, which is also configured for Layer 3 RACL, you might observe multiple merged ACL path signatures stemming from merging the sampling and security ACL features. This behavior results in multiple (twice) copies of flattened ACE programmed in the TCAM, wasting ACL TCAM space.

  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches. It does not impact functionality.

  Workarounds: Do one of the following:

  – Change the interface to a Layer 2 switch port

  – Do not configure an ACL access-list on the same Layer 3 interface where sampling monitor is enabled. CSCtn79032

- When either the RADIUS-server test feature or RADIUS-erver dead-criteria is configured and either RADIUS-server deadtime is not configured or is set to 0, the RADIUS-server status is not properly relayed to AAA.

  Workaround: Configure both dead-criteria and deadtime.

  ```
  radius-server dead-criteria
  radius-server deadtime
  ```

  CSCtl06706

- When two distinct Layer 3 CE-facing interfaces exist, each connected to a CE to split WCCP between the two CEs, and you move a particular WCCP service (like 60 (ftp-native)) from one Layer 3 interface to the other, the target interface fails to completely transfer the service to the new CE from the old CE.

Workaround: Shutdown the CE-facing interface. Once all the mask-value entries point to the target CE, unshut the CE-facing interface. CSCtl09941

- When spanning tree is changed from PVST to Rapid PVST and you enter the **show spanning-tree vlan** command, the ports configured as promiscuous trunks are not listed as part of the spanning tree.

  Workaround: Enter **shut**, then **no shut** on the ports. CSCtn88228

- If a large number of VLAN mappings are configured, a member port might fail to join a port channel and no warming is issued.

  Workaround: Reduce the number of VLAN mappings. CSCtn56208

- WCCP service is not reacquired when a service group with a multicast group-address is unconfigured, and then reconfigured.

  Workaround: Configure ip multicast-routing globally and establish ip pim sparse-dense-mode on the CE-facing interface. CSCtl97692

- If an interface whose IP address is being used as the Router ID is deleted or shuts down and you configure a service group with a multicast group-address, packet redirection to CE stops and packets are forwarded directly to the destination.

  Workaround: Unconfigure and reconfigure the service group. CSCtn88087

- When a sampling monitor is configured on a routed port or on a VLAN (an SVI with just one port as a member) and **bidir multicast** is enabled, a packet sample may be exported even though the original multicast packet was not forwarded by the switch.

  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches.

  Workaround: None. CSCtk97612

- If you reboot a switch, the configured value of interface MTU size on the members of port-channel interface does not function for IPv6 traffic.

  Workaround: After the switch reloads, enter **shut**, then **no shut** on the port-channel interface.

  CSCto27085

- Global WCCP service configuration fails to enable (WCCP global config is accepted but nvgen fails) on a newly deployed switch if the switch is not enabled for SVI or a Layer 3 interface.

  Workaround: Enable a Layer 3 interface in the running config. CSCsc88636.

- If you enter the **clear ip mroute ?** command, only the **vrf** option is displayed. The **Hostname** and ' ***** ' options are not displayed, although they are accepted by the system, and the **clear ip mroute** command functions as expected.

  Workaround: None. CSCto59368

- Dynamic ACLs do not function correctly if they include advanced operators, including dscp/ipp/tos, log/log-input, fragments and/or tcp flag operators.

  Workaround: Remove these operators from any dynamic ACLs. CSCts05302

- Configuring an interface as uni-directional with the **unidirectional** *send-only* | *receive-only* command still allows the interface to send (configured as “Send-only Unidirection Ethernet mode”) or receive (configured as "Receive-only Unidirection Ethernet mode") packets in a bi-directional mode.

  Workaround: None. CSCtx95359

Resolved Caveats in Cisco IOS Release 15.0(2)SG8

This section lists the resolved caveats in Release 15.0(2)SG8:

- If you configure Open Authentication and perform SSO, the spanning tree state and MAC address are not synchronized to the new standby supervisor engine. The issue interrupts traffic only after the second switchover, because after the initial switchover the new standby supervisor engine possesses the wrong state, and the second switchover will start the port in the blocking state.

  Workaround: Enter **shut**, and then **no shut** on the port to synchronize the STP state. CSCtf52437

- If REP is configured on a dot1q trunk and the native VLAN is administratively set to a non-default value, REP packets are not sent on the native VLAN.

  Workaround: Retain the trunk native V LAN as 1. CSCud05521

- If a dACL name is too long (about 24 characters, depending on the interface where it is applied), the ACL is incorrectly shared over multiple ports.

  Workaround: Shorten the dACL name. CSCug78653

- redirect-url and redirect-acl are not cleared after a successful CoA, causing the final step of Central Web Authentication to fail.

  Workaround: Return a dACL in the authorization profile with successful guest authentication.

  CSCue62019

- If URL redirect is installed as part of authorization and either of the following occurs, memory will leak:

  - A fast stream of traffic matches the URL redirect ACL as IPDT clears an address.
  - A traffic stream matches the URL redirect ACL and no URL redirect policy is installed for that IP address.

  If memory leak occurs repeatedly, IPDT and other control packet processing ultimately ceases.

  Workaround: If this behavior completely fills the CPU buffer, the switch must be reloaded. However, the frequency of encountering a stuck queue can be reduced to nearly zero by modifying the URL redirect ACL to permit only 80/443 traffic. CSCug56646

- If a device is authenticating while the RADIUS server goes down, the port connected to the device may enter the err-disabled state.

  Workaround: Configure RADIUS test and dead criteria.

  Example:

  ```
  radius-server dead-criteria time 10 tries 2
  radius-server host <ip> test username test key <key>
  radius-server deadtime 10
  ```

  CSCtn92693

- If 10Gbps BaseT ports (on WS-X4908-10G-RJ45) are connected to a peer device using a Broadcom BCM84833 chipset, the connection either never boots or takes a very long time (up to an hour).

  This issue applies to Cisco IOS Release 15.0(2)SG through 15.0(2)SG7, and 15.1(2)SG through 15.1(2)SG3.

  Workaround: Downgrade to Cisco IOS Release 12.2(54)SG. CSCug68370

- In the output of the **show interface** command, output counters for an EtherChannel member remain zero provided the ports are flapped from a peer and the switch is either Catalyst 4900M, Catalyst 4948E, or 4948E-F, or the supervisor engine is either 6E or 6L-E.

Workaround: Enter the **show platform software interface Gix/xx statistic** command.

CSCuf60629

Open Caveats in Cisco IOS Release 15.0(2)SG7

This section lists the open caveats in Cisco IOS Release 15.0(2)SG7:

- On rare occasions, if you use an X2 SR transceiver on a WS-X4706-10GE running Cisco IOS Release 12.2(40)SG, you will observe CRC errors after a reload or power cycle when you insert the card or the X2.

  Workaround: Reinsert the X2. CSCsk43618

- If a class-map is configured with **exceed-action drop**, re-configuring the same class-map with **exceed-action transmit** causes class-map configurations to conflict for the same class-map.

  Workaround: If you plan to change a class-map action, such as **exceed-action**, you meed to remove the class-map with the **no class c1** command under policy-map submode. Then, apply the new class-map with the updated changes. CSCsk70826)

- If *burst* is not explicitly configured for a single rate policer, the **show policy-map command** displays an incorrect burst value.

  Workaround: Enter the **show policy-map interface** command. CSCsi71036

- When you enter the **show policy-map vlan** *vlan* command, unconditional marking actions that are configured on the VLAN are not shown.

  Workaround: None. However, if you enter the **show policy-map** *name*, the unconditional marking actions are displayed. CSCsi94144

- IGMP snooping entries are active even after disabling IGMP snooping globally and per VLAN.

  Workarounds: Disable IGMP snooping on all the relevant VLANs before disabling it globally.

- IPv6 entries are active in the CAM; the CPU receives IPv6 packets.

  Workaround: Unconfigure any generic QOS policies from the system. The QoS policies with the **match any** attribute cause IPv6 entries to become active. If the switch is a pure Layer 2 device, remove the generic protocol family attributes and narrow it to the protocol family.

  CSCsq84796

- In Cisco IOS Release 12.2(54)SG, if an etherchannel is a member of a flexlink pair, then static MAC addresses configured on the EtherChannel are not moved to the alternate port when the EtherChannel fails (flexlink failure)

  Workaround: None. CSCsq99468

- When a CFM Inward Facing MEP(IFM) is configured on a VLAN that is not allocated on a switch port that is DOWN, the **show ethernet cfm maintenance-points local** command displays the IFM CC Status as **Inactive**. Then, you allocate the VLAN, the CC-status remains **Inactive**.

  You only see this symptom if you did not allocate a VLAN before you configure the IFM, then at a later time allocate the same VLAN.

  Workaround: Unconfigure, then reconfigure the IFM on the port.

- An IP unnumbered configuration is lost after a reload.

  Workarounds: Do one of the following:

  – After a reload, copy the startup-config to the running-config.

  - Use a loopback interface as the target of the **ip unnumbered** command
  - Change the CLI configuration such that during bootup, the router port is created first.

  CSCsq63051

- In SSO mode on the Catalyst 4900M switch, when a port-channel is created, deleted, and re-created on an active supervisor engine with the same channel-number, the standby port-channel state goes out of sync. After a switch over, the following message displays:

  ```
  %PM-4-PORT_INCONSISTENT: STANDBY:Port is inconsistent:
  ```

  Workaround: When the port channel starts to flap, enter **shut** and **no shut** on the port channel. After the first switchover and after deleting the portchannel, create a new channel. CSCsr00333

- Duplicate serial number error messages are reported on switching One X Convertor with SFP+, SFP+, X2 to another port, the inserted port enters a faulty status.

  This problem impacts X2, OneX converters, and SFP+ on the Supervisor Engine 6-E, and linecards.

  Workaround: Remove and reinsert the One X Convertor with SFP+, SFP+ alone, or X2 after some perceivable delay. CSCsu43461

- VTP databases do not propagate through promiscuous trunk ports. If only promiscuous trunks are configured, users will not see the VLAN updates on the other switches in the VTP domain.

  Workaround: For VTP database propagation, configure ISL/dot1q trunk port. CSCsu43445

- After posture validation succeeds, the following benign traceback messages may appear after you unconfigure the global RADIUS and IP device tracking commands:

  ```
  %SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
  eou_auth 4.1.0.101   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
  106617F8
  %SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
  eou_auth 4.1.0.102   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
  106617F8
  ```

  This applies to classic or E-series Catalyst 4500 supervisor engines running Cisco IOS Release 12.2(50)SG

  Workaround: None. CSCsw14005

- On a Catalyst 4900M switch, the host's MAC address is not synchronized to the standby supervisor engine after you unconfigure 802.1X on the port and reconnect the host to a IP phone (with CDP port status TLV support) that is connected to the switch.

  If the switch were to run a supervisor switchover while in this state, the host's MAC address would not be present in the new active supervisor engine's MAC address table, causing possible connectivity interruption on the host.

  Workaround: Enter the **shutdown** command, followed by the **no shutdown** command on the interface. This triggers relearning and synchronizing of the host's MAC to the standby supervisor engine. CSCsw91661

- When multiple streams of CRC errors are encountered on WS-C4900M configured with OAM Configuration of monitoring the frame errored seconds, OAM does not always report the value of errored frame seconds correctly.

  To observe this issue, the following CLIs are configured with window size as the period for monitoring the errors and a low threshold equal to the number of CRC errored seconds seen/expected.

  ```
  ethernet oam link-monitor frame-seconds window
  ethernet oam link-monitor frame-seconds threshold low
  ```

Workaround: Configure a lower value of low threshold such that the frame errors are seen divided into the expected number of frame errored seconds. CSCsy37181

- If you simultaneously apply a service-policy to a port in the output direction and a service-policy to a vlan-range under that port in the output direction, the class-map hit counters in the output of the **show policy-map interface** command are wrong.

  Workaround: None.

  The queue transmit counters as well as the policing statistics (if any) are correct. CSCsz20149

- On wireless control system (WCS), some device information is incorrectly displayed for PCs sitting behind an lldp-med capable phone. Specifically, WCS displays the phone's serial number, model number, and software version in the PC's device information. All other information about the PC is correctly displayed on WCS.

  This only happens when the switch is running network mobility service protocol (nmsp). It does not happen if the phone is CDP enabled.

  Workaround: Use VLAN ID or name to differentiate the IP phone and the PC sitting behind the phone on the WCS. Specifically, the IP phone is detected on the voice VLAN, and the displayed information of serial number, model number, and software version is correct. However, a PC sitting behind the phone is detected on a data VLAN, and the displayed device information is wrong and should be ignored. CSCsz34522

- When you configure **switchport block multicast** on a switch running Cisco IOS Release 12.2(53)SG1 and later or 12.2(50)SG6 and later, Layer 2 multicast is not blocked.

  Prior to Cisco IOS Release 12.2(53)SG1, 12.2(50)SG6, the **switchport block multicast** command would block IP Multicast, Layer 2 multicast, and broadcast traffic (CSCta61825).

  Workaround: None. CSCtb30327

- If *time* is not specified in the **link debounce** command, the default value depends on the supervisor engine. The default is 10 mS for 4948E, C4900M, Supervisor Engine 6-E, and Supervisor Engine 6L-E. The default is 100 mS for all other supervisor engines.

  Workaround: None. CSCte51948

- Fast UDLD in aggressive mode may incorrectly errdisable a link in the following scenarios:
  - Fast UDLD peer switch performs SSO.
  - Fast UDLD peer switch is reloaded.
  - One or more interfaces on a fast UDLD peer switch are shut down (or the port mode changes from switchport to routed, and vice versa).

Note To reduce the likelihood of this event, connect at least two physical interfaces between fast UDLD peer switches. You must configure the interfaces with the same neighbor fast hello interval.

Workarounds:

- Reset the error disabled links with the **udld reset** command.
- Configure error disable recovery with the commands **errdisable recovery cause udld** and **errdisable recovery interval** *value (*between 30 and 86400 sec).
- Manually clear errdisable on the local interface with a **shutdown** then a **no shutdown**.

CSCtc99007

- On a peer interface on a Catalyst 4948E Ethernet Switch, if errdisabled mode flap detection is set to a very small number (such as 2 flaps in 10 sec), a 10GE link flap may cause the peer interface to enter the errdisabled state.

  Workarounds: The Cisco switch default link-flap detection value is 5 flaps in 10 seconds. Use the default value or larger numbers. CSCtg07677

- Before large PACLs are fully loaded in hardware, you might observe a false completion messages like the following:

```
Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-HWPROGSUCCESS: Input Security: pacl - now
fully loaded in hardware *Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-ALLACLINHW: All
configured ACLs now fully loaded in hardware - hardware switching / QoS restored.
```

  This issue does not impact functionality.

  Workaround: None.

  You must wait for the ACLs to be programmed before performing other TCAM related changes. CSCtd57063

- When you have enabled EPM logging and the client is authenticated via MAB or Webauth, the value of AUTHTYPE is DOT1X in EPM syslog messages irrespective of the authentication method.

  Similarly, the show epm sessions command always displays the authentication method as DOT1X.

  Workaround: To view the authentication method used for a client, enter the **show authentication sessions** command. CSCsx42157

- With CFM enabled globally as well as on an ingress interface, CFM packets received on the interface are not policed with hardware control plane policing.

  Workaround: None. CSCso93282

- With a NEAT configuration on an ASW (Catalyst 4500 series switch) connected to an SSW (Catalyst 3750 series switch) serving as a root bridge and with redundant links between ASW and SSW, the following occur:
  - STP does not stabilize.
  - The SVI (network) is unreachable. If an SVI exists on the ASW, because of the STP flap in the setup as well as the CISP operations, the SVI MAC configuration on the ASW is incorrect.

  Workaround: Configure the ASW or any other switch upstream as the root-bridge for all the VLANs. CSCtg71030

- When a packet sampling monitor is applied on a Layer 3 port, which is also configured for Layer 3 RACL, you might observe multiple merged ACL path signatures stemming from merging the sampling and security ACL features. This behavior results in multiple (twice) copies of flattened ACE programmed in the TCAM, wasting ACL TCAM space.

  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches. It does not impact functionality.

  Workarounds: Do one of the following:

  - Change the interface to a Layer 2 switch port
  - Do not configure an ACL access-list on the same Layer 3 interface where sampling monitor is enabled. CSCtn79032

- When either the RADIUS-server test feature or RADIUS-erver dead-criteria is configured and either RADIUS-server deadtime is not configured or is set to 0, the RADIUS-server status is not properly relayed to AAA.

  Workaround: Configure both dead-criteria and deadtime.

  ```
  radius-server dead-criteria
  radius-server deadtime
  ```

  CSCtl06706

- When two distinct Layer 3 CE-facing interfaces exist, each connected to a CE to split WCCP between the two CEs, and you move a particular WCCP service (like 60 (ftp-native)) from one Layer 3 interface to the other, the target interface fails to completely transfer the service to the new CE from the old CE.

  Workaround: Shutdown the CE-facing interface. Once all the mask-value entries point to the target CE, unshut the CE-facing interface. CSCtl09941

- When spanning tree is changed from PVST to Rapid PVST and you enter the **show spanning-tree vlan** command, the ports configured as promiscuous trunks are not listed as part of the spanning tree.

  Workaround: Enter **shut**, then **no shut** on the ports. CSCtn88228

- If a large number of VLAN mappings are configured, a member port might fail to join a port channel and no warming is issued.

  Workaround: Reduce the number of VLAN mappings. CSCtn56208

- WCCP service is not reacquired when a service group with a multicast group-address is unconfigured, and then reconfigured.

  Workaround: Configure ip multicast-routing globally and establish ip pim sparse-dense-mode on the CE-facing interface. CSCtl97692

- If an interface whose IP address is being used as the Router ID is deleted or shuts down and you configure a service group with a multicast group-address, packet redirection to CE stops and packets are forwarded directly to the destination.

  Workaround: Unconfigure and reconfigure the service group. CSCtn88087

- When a sampling monitor is configured on a routed port or on a VLAN (an SVI with just one port as a member) and **bidir multicast** is enabled, a packet sample may be exported even though the original multicast packet was not forwarded by the switch.

  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches.

  Workaround: None. CSCtk97612

- If you reboot a switch, the configured value of interface MTU size on the members of port-channel interface does not function for IPv6 traffic.

  Workaround: After the switch reloads, enter **shut**, then **no shut** on the port-channel interface.

  CSCto27085

- Global WCCP service configuration fails to enable (WCCP global config is accepted but nvgen fails) on a newly deployed switch if the switch is not enabled for SVI or a Layer 3 interface.

  Workaround: Enable a Layer 3 interface in the running config. CSCsc88636.

- If you enter the **clear ip mroute ?** command, only the **vrf** option is displayed. The **Hostname** and ' * ' options are not displayed, although they are accepted by the system, and the **clear ip mroute** command functions as expected.

  Workaround: None. CSCto59368

- Dynamic ACLs do not function correctly if they include advanced operators, including dscp/ipp/tos, log/log-input, fragments and/or tcp flag operators.

  Workaround: Remove these operators from any dynamic ACLs. CSCts05302

- Configuring an interface as uni-directional with the **unidirectional** *send-only* | *receive-only* command still allows the interface to send (configured as “Send-only Unidirection Ethernet mode”) or receive (configured as "Receive-only Unidirection Ethernet mode") packets in a bi-directional mode.

  Workaround: None. CSCtx95359

- If you configure Open Authentication and perform SSO, the spanning tree state and MAC address are not synchronized to the new standby supervisor engine. The issue interrupts traffic only after the second switchover, because after the initial switchover the new standby supervisor engine possesses the wrong state, and the second switchover will start the port in the blocking state.

  Workaround: Enter **shut**, and then **no shut** on the port to synchronize the STP state. CSCtf52437

- If REP is configured on a dot1q trunk and the native VLAN is administratively set to a non-default value, REP packets are not sent on the native VLAN.

  Workaround: Retain the trunk native V LAN as 1. CSCud05521

- If a dACL name is too long (about 24 characters, depending on the interface where it is applied), the ACL is incorrectly shared over multiple ports.

  Workaround: Shorten the dACL name. CSCug78653

- redirect-url and redirect-acl are not cleared after a successful CoA, causing the final step of Central Web Authentication to fail.

  Workaround: Return a dACL in the authorization profile with successful guest authentication.

  CSCue62019

- If URL redirect is installed as part of authorization and either of the following occurs, memory will leak:
  - A fast stream of traffic matches the URL redirect ACL as IPDT clears an address.
  - A traffic stream matches the URL redirect ACL and no URL redirect policy is installed for that IP address.

  If memory leak occurs repeatedly, IPDT and other control packet processing ultimately ceases.

  Workaround: If this behavior completely fills the CPU buffer, the switch must be reloaded. However, the frequency of encountering a stuck queue can be reduced to nearly zero by modifying the URL redirect ACL to permit only 80/443 traffic. CSCug56646

- If a device is authenticating while the RADIUS server goes down, the port connected to the device may enter the err-disabled state.

  Workaround: Configure RADIUS test and dead criteria.

  Example:

```
radius-server dead-criteria time 10 tries 2
radius-server host <ip> test username test key <key>
radius-server deadtime 10
```

CSCtn92693

- If 10Gbps BaseT ports (on WS-X4908-10G-RJ45) are connected to a peer device using a Broadcom BCM84833 chipset, the connection either never boots or takes a very long time (up to an hour).

  This issue applies to Cisco IOS Release 15.0(2)SG through 15.0(2)SG7, and 15.1(2)SG through 15.1(2)SG3.

  Workaround: Downgrade to Cisco IOS Release 12.2(54)SG. CSCug68370

- In the output of the **show interface** command, output counters for an EtherChannel member remain zero provided the ports are flapped from a peer and the switch is either Catalyst 4900M, Catalyst 4948E, or 4948E-F, or the supervisor engine is either 6E or 6L-E.

  Workaround: Enter the **show platform software interface Gix/xx statistic** command.

  CSCuf60629

Resolved Caveats in Cisco IOS Release 15.0(2)SG7

This section lists the resolved caveats in Release 15.2(2)SG7:

- When a trunk port is configured with a native VLAN other than VLAN 1, REP packets are not sent on that VLAN.

  Workaround: Retain the default setting (VLAN 1) for the native VLAN on trunks ports. CSCud05521

Open Caveats in Cisco IOS Release 15.0(2)SG6

This section lists the open caveats in Cisco IOS Release 15.0(2)SG6:

- On rare occasions, if you use an X2 SR transceiver on a WS-X4706-10GE running Cisco IOS Release 12.2(40)SG, you will observe CRC errors after a reload or power cycle when you insert the card or the X2.

  Workaround: Reinsert the X2. CSCsk43618

- If a class-map is configured with **exceed-action drop**, re-configuring the same class-map with **exceed-action transmit** causes class-map configurations to conflict for the same class-map.

  Workaround: If you plan to change a class-map action, such as **exceed-action**, you meed to remove the class-map with the **no class c1** command under policy-map submode. Then, apply the new class-map with the updated changes. CSCsk70826)

- If *burst* is not explicitly configured for a single rate policer, the **show policy-map command** displays an incorrect burst value.

  Workaround: Enter the **show policy-map interface** command. CSCsi71036

- When you enter the **show policy-map vlan** *vlan* command, unconditional marking actions that are configured on the VLAN are not shown.

  Workaround: None. However, if you enter the **show policy-map** *name*, the unconditional marking actions are displayed. CSCsi94144

- IGMP snooping entries are active even after disabling IGMP snooping globally and per VLAN.

  Workarounds: Disable IGMP snooping on all the relevant VLANs before disabling it globally.

- IPv6 entries are active in the CAM; the CPU receives IPv6 packets.

Workaround: Unconfigure any generic QOS policies from the system. The QoS policies with the **match any** attribute cause IPv6 entries to become active. If the switch is a pure Layer 2 device, remove the generic protocol family attributes and narrow it to the protocol family.

CSCsq84796

- In Cisco IOS Release 12.2(54)SG, if an etherchannel is a member of a flexlink pair, then static MAC addresses configured on the EtherChannel are not moved to the alternate port when the EtherChannel fails (flexlink failure)

  Workaround: None. CSCsq99468

- When a CFM Inward Facing MEP(IFM) is configured on a VLAN that is not allocated on a switch port that is DOWN, the **show ethernet cfm maintenance-points local** command displays the IFM CC Status as **Inactive**. Then, you allocate the VLAN, the CC-status remains **Inactive**.

  You only see this symptom if you did not allocate a VLAN before you configure the IFM, then at a later time allocate the same VLAN.

  Workaround: Unconfigure, then reconfigure the IFM on the port.

- An IP unnumbered configuration is lost after a reload.

  Workarounds: Do one of the following:

  - After a reload, copy the startup-config to the running-config.
  - Use a loopback interface as the target of the **ip unnumbered** command
  - Change the CLI configuration such that during bootup, the router port is created first.

  CSCsq63051

- In SSO mode on the Catalyst 4900M switch, when a port-channel is created, deleted, and re-created on an active supervisor engine with the same channel-number, the standby port-channel state goes out of sync. After a switch over, the following message displays:

  ```
  %PM-4-PORT_INCONSISTENT: STANDBY:Port is inconsistent:
  ```

  Workaround: When the port channel starts to flap, enter **shut** and **no shut** on the port channel. After the first switchover and after deleting the portchannel, create a new channel. CSCsr00333

- Duplicate serial number error messages are reported on switching One X Convertor with SFP+, SFP+, X2 to another port, the inserted port enters a faulty status.

  This problem impacts X2, OneX converters, and SFP+ on the Supervisor Engine 6-E, and linecards.

  Workaround: Remove and reinsert the One X Convertor with SFP+, SFP+ alone, or X2 after some perceivable delay. CSCsu43461

- VTP databases do not propagate through promiscuous trunk ports. If only promiscuous trunks are configured, users will not see the VLAN updates on the other switches in the VTP domain.

  Workaround: For VTP database propagation, configure ISL/dot1q trunk port. CSCsu43445

- After posture validation succeeds, the following benign traceback messages may appear after you unconfigure the global RADIUS and IP device tracking commands:

  ```
  %SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
  eou_auth 4.1.0.101   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
  106617F8
  %SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
  eou_auth 4.1.0.102   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
  106617F8
  ```

  This applies to classic or E-series Catalyst 4500 supervisor engines running Cisco IOS Release 12.2(50)SG

Workaround: None. CSCsw14005

- On a Catalyst 4900M switch, the host's MAC address is not synchronized to the standby supervisor engine after you unconfigure 802.1X on the port and reconnect the host to a IP phone (with CDP port status TLV support) that is connected to the switch.

  If the switch were to run a supervisor switchover while in this state, the host's MAC address would not be present in the new active supervisor engine's MAC address table, causing possible connectivity interruption on the host.

  Workaround: Enter the **shutdown** command, followed by the **no shutdown** command on the interface. This triggers relearning and synchronizing of the host's MAC to the standby supervisor engine. CSCsw91661

- When multiple streams of CRC errors are encountered on WS-C4900M configured with OAM Configuration of monitoring the frame errored seconds, OAM does not always report the value of errored frame seconds correctly.

  To observe this issue, the following CLIs are configured with window size as the period for monitoring the errors and a low threshold equal to the number of CRC errored seconds seen/expected.

  ```
  ethernet oam link-monitor frame-seconds window
  ethernet oam link-monitor frame-seconds threshold low
  ```

  Workaround: Configure a lower value of low threshold such that the frame errors are seen divided into the expected number of frame errored seconds. CSCsy37181

- If you simultaneously apply a service-policy to a port in the output direction and a service-policy to a vlan-range under that port in the output direction, the class-map hit counters in the output of the **show policy-map interface** command are wrong.

  Workaround: None.

  The queue transmit counters as well as the policing statistics (if any) are correct. CSCsz20149

- On wireless control system (WCS), some device information is incorrectly displayed for PCs sitting behind an lldp-med capable phone. Specifically, WCS displays the phone's serial number, model number, and software version in the PC's device information. All other information about the PC is correctly displayed on WCS.

  This only happens when the switch is running network mobility service protocol (nmsp). It does not happen if the phone is CDP enabled.

  Workaround: Use VLAN ID or name to differentiate the IP phone and the PC sitting behind the phone on the WCS. Specifically, the IP phone is detected on the voice VLAN, and the displayed information of serial number, model number, and software version is correct. However, a PC sitting behind the phone is detected on a data VLAN, and the displayed device information is wrong and should be ignored. CSCsz34522

- When you configure **switchport block multicast** on a switch running Cisco IOS Release 12.2(53)SG1 and later or 12.2(50)SG6 and later, Layer 2 multicast is not blocked.

  Prior to Cisco IOS Release 12.2(53)SG1, 12.2(50)SG6, the **switchport block multicast** command would block IP Multicast, Layer 2 multicast, and broadcast traffic (CSCta61825).

  Workaround: None. CSCtb30327

- If *time* is not specified in the **link debounce** command, the default value depends on the supervisor engine. The default is 10 mS for 4948E, C4900M, Supervisor Engine 6-E, and Supervisor Engine 6L-E. The default is 100 mS for all other supervisor engines.

Workaround: None. CSCte51948

- Fast UDLD in aggressive mode may incorrectly errdisable a link in the following scenarios:
  - Fast UDLD peer switch performs SSO.
  - Fast UDLD peer switch is reloaded.
  - One or more interfaces on a fast UDLD peer switch are shut down (or the port mode changes from switchport to routed, and vice versa).

Note To reduce the likelihood of this event, connect at least two physical interfaces between fast UDLD peer switches. You must configure the interfaces with the same neighbor fast hello interval.

Workarounds:

- Reset the error disabled links with the **udld reset** command.
- Configure error disable recovery with the commands **errdisable recovery cause udld** and **errdisable recovery interval** *value (*between 30 and 86400 sec).
- Manually clear errdisable on the local interface with a **shutdown** then a **no shutdown**.

CSCtc99007

- On a peer interface on a Catalyst 4948E Ethernet Switch, if errdisabled mode flap detection is set to a very small number (such as 2 flaps in 10 sec), a 10GE link flap may cause the peer interface to enter the errdisabled state.

  Workarounds: The Cisco switch default link-flap detection value is 5 flaps in 10 seconds. Use the default value or larger numbers. CSCtg07677

- Before large PACLs are fully loaded in hardware, you might observe a false completion messages like the following:

```
Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-HWPROGSUCCESS: Input Security: pacl - now
fully loaded in hardware *Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-ALLACLINHW: All
configured ACLs now fully loaded in hardware - hardware switching / QoS restored.
```

  This issue does not impact functionality.

  Workaround: None.

  You must wait for the ACLs to be programmed before performing other TCAM related changes. CSCtd57063

- When you have enabled EPM logging and the client is authenticated via MAB or Webauth, the value of AUTHTYPE is DOT1X in EPM syslog messages irrespective of the authentication method.

  Similarly, the show epm sessions command always displays the authentication method as DOT1X.

  Workaround: To view the authentication method used for a client, enter the **show authentication sessions** command. CSCsx42157

- With CFM enabled globally as well as on an ingress interface, CFM packets received on the interface are not policed with hardware control plane policing.

  Workaround: None. CSCso93282

- With a NEAT configuration on an ASW (Catalyst 4500 series switch) connected to an SSW (Catalyst 3750 series switch) serving as a root bridge and with redundant links between ASW and SSW, the following occur:
  - STP does not stabilize.

  - The SVI (network) is unreachable. If an SVI exists on the ASW, because of the STP flap in the setup as well as the CISP operations, the SVI MAC configuration on the ASW is incorrect.

  Workaround: Configure the ASW or any other switch upstream as the root-bridge for all the VLANs. CSCtg71030

- When a packet sampling monitor is applied on a Layer 3 port, which is also configured for Layer 3 RACL, you might observe multiple merged ACL path signatures stemming from merging the sampling and security ACL features. This behavior results in multiple (twice) copies of flattened ACE programmed in the TCAM, wasting ACL TCAM space.

  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches. It does not impact functionality.

  Workarounds: Do one of the following:

  - Change the interface to a Layer 2 switch port
  - Do not configure an ACL access-list on the same Layer 3 interface where sampling monitor is enabled. CSCtn79032

- When either the RADIUS-server test feature or RADIUS-erver dead-criteria is configured and either RADIUS-server deadtime is not configured or is set to 0, the RADIUS-server status is not properly relayed to AAA.

  Workaround: Configure both dead-criteria and deadtime.

  ```
  radius-server dead-criteria
  radius-server deadtime
  ```

  CSCtl06706

- When two distinct Layer 3 CE-facing interfaces exist, each connected to a CE to split WCCP between the two CEs, and you move a particular WCCP service (like 60 (ftp-native)) from one Layer 3 interface to the other, the target interface fails to completely transfer the service to the new CE from the old CE.

  Workaround: Shutdown the CE-facing interface. Once all the mask-value entries point to the target CE, unshut the CE-facing interface. CSCtl09941

- When spanning tree is changed from PVST to Rapid PVST and you enter the **show spanning-tree vlan** command, the ports configured as promiscuous trunks are not listed as part of the spanning tree.

  Workaround: Enter **shut**, then **no shut** on the ports. CSCtn88228

- If a large number of VLAN mappings are configured, a member port might fail to join a port channel and no warming is issued.

  Workaround: Reduce the number of VLAN mappings. CSCtn56208

- WCCP service is not reacquired when a service group with a multicast group-address is unconfigured, and then reconfigured.

  Workaround: Configure ip multicast-routing globally and establish ip pim sparse-dense-mode on the CE-facing interface. CSCtl97692

- If an interface whose IP address is being used as the Router ID is deleted or shuts down and you configure a service group with a multicast group-address, packet redirection to CE stops and packets are forwarded directly to the destination.

  Workaround: Unconfigure and reconfigure the service group. CSCtn88087

- When a sampling monitor is configured on a routed port or on a VLAN (an SVI with just one port as a member) and **bidir multicast** is enabled, a packet sample may be exported even though the original multicast packet was not forwarded by the switch.

This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches.

Workaround: None. CSCtk97612

- If you reboot a switch, the configured value of interface MTU size on the members of port-channel interface does not function for IPv6 traffic.

  Workaround: After the switch reloads, enter **shut**, then **no shut** on the port-channel interface.

  CSCto27085

- Global WCCP service configuration fails to enable (WCCP global config is accepted but nvgen fails) on a newly deployed switch if the switch is not enabled for SVI or a Layer 3 interface.

  Workaround: Enable a Layer 3 interface in the running config. CSCsc88636.

- If you enter the **clear ip mroute ?** command, only the **vrf** option is displayed. The **Hostname** and ' * ' options are not displayed, although they are accepted by the system, and the **clear ip mroute** command functions as expected.

  Workaround: None. CSCto59368

- Dynamic ACLs do not function correctly if they include advanced operators, including dscp/ipp/tos, log/log-input, fragments and/or tcp flag operators.

  Workaround: Remove these operators from any dynamic ACLs. CSCts05302

- Configuring an interface as uni-directional with the **unidirectional** *send-only* | *receive-only* command still allows the interface to send (configured as “Send-only Unidirection Ethernet mode”) or receive (configured as "Receive-only Unidirection Ethernet mode") packets in a bi-directional mode.

  Workaround: None. CSCtx95359

- When a trunk port is configured with a native VLAN other than VLAN 1, REP packets are not sent on that VLAN.

  Workaround: Retain the default setting (VLAN 1) for the native VLAN on trunks ports. CSCud05521

- If REP is configured on a dot1q trunk and the native VLAN is administratively set to a non-default value, REP packets are not sent on the native VLAN.

  Workaround: Retain the trunk native V LAN as 1. CSCud05521

- If a dACL name is too long (about 24 characters, depending on the interface where it is applied), the ACL is incorrectly shared over multiple ports.

  Workaround: Shorten the dACL name. CSCug78653

- redirect-url and redirect-acl are not cleared after a successful CoA, causing the final step of Central Web Authentication to fail.

  Workaround: Return a dACL in the authorization profile with successful guest authentication.

  CSCue62019

- If URL redirect is installed as part of authorization and either of the following occurs, memory will leak:

  – A fast stream of traffic matches the URL redirect ACL as IPDT clears an address.

  – A traffic stream matches the URL redirect ACL and no URL redirect policy is installed for that IP address.

  If memory leak occurs repeatedly, IPDT and other control packet processing ultimately ceases.

Workaround: If this behavior completely fills the CPU buffer, the switch must be reloaded. However, the frequency of encountering a stuck queue can be reduced to nearly zero by modifying the URL redirect ACL to permit only 80/443 traffic. CSCug56646

- If a device is authenticating while the RADIUS server goes down, the port connected to the device may enter the err-disabled state.

  Workaround: Configure RADIUS test and dead criteria.

  Example:

  ```
  radius-server dead-criteria time 10 tries 2
  radius-server host <ip> test username test key <key>
  radius-server deadtime 10
  ```

  CSCtn92693

- If 10Gbps BaseT ports (on WS-X4908-10G-RJ45) are connected to a peer device using a Broadcom BCM84833 chipset, the connection either never boots or takes a very long time (up to an hour).

  This issue applies to Cisco IOS Release 15.0(2)SG through 15.0(2)SG7, and 15.1(2)SG through 15.1(2)SG3.

  Workaround: Downgrade to Cisco IOS Release 12.2(54)SG. CSCug68370

- In the output of the **show interface** command, output counters for an EtherChannel member remain zero provided the ports are flapped from a peer and the switch is either Catalyst 4900M, Catalyst 4948E, or 4948E-F, or the supervisor engine is either 6E or 6L-E.

  Workaround: Enter the **show platform software interface Gix/xx statistic** command.

  CSCuf60629

- If you configure Open Authentication and perform SSO, the spanning tree state and MAC address are not synchronized to the new standby supervisor engine. The issue interrupts traffic only after the second switchover, because after the initial switchover the new standby supervisor engine possesses the wrong state, and the second switchover will start the port in the blocking state.

  Workaround: Enter **shut**, and then **no shut** on the port to synchronize the STP state. CSCtf52437

Resolved Caveats in Cisco IOS Release 15.0(2)SG6

This section lists the resolved caveats in Release 15.2(2)SG6:

- A %SYS-2-NOBLOCK or %SYS-2-BLOCKHUNG message may appear on the switch when an interface with a QoS policy changes speed at the same time information about that interface is being collected (most commonly through a CLI like the **show policy-map ...** command). Although the QoS policy programming might fail for that interface, no operational impact is observed.

  Workaround: None. CSCtk52874

- In a square Layer 2 topology (of at least four switches) where the root bridge is outside of the square (a fifth switch), one link in the square that transitions its role from alternate to root will not send topology change notifications. A stale MAC address may exist in the table until age-out.

  Workaround: Reduce MAC aging time or modify Layer 2 topology so that the root is within the square. CSCtx86107

- A switch crashes after displaying the message

  ```
  %AUTHMGR-7-RESULT: Authentication result 'success' from 'dot1x' for client (Unknown
  MAC) on Interface Gi5/39 AuditSessionID AC156241000000670001BC9
  ```

provided the following conditions apply:

- A switchport is configured with the following:

  authentication event server dead action authorize

  authenticaton event server alive action reinitalize

- The RADIUS server was down previously, and a port without traffic (for example, a hub with no devices attached) was authorized into the inaccessible authentication bypass (IAB) VLAN without an associated MAC address.

  The RADIUS server becomes available again, and the IAB-authorized port transitions to another state.

Workaround: None. CSCtx61557

Open Caveats in Cisco IOS Release 15.0(2)SG5

This section lists the open caveats in Cisco IOS Release 15.0(2)SG5:

- On rare occasions, if you use an X2 SR transceiver on a WS-X4706-10GE running Cisco IOS Release 12.2(40)SG, you will observe CRC errors after a reload or power cycle when you insert the card or the X2.

  Workaround: Reinsert the X2. CSCsk43618

- If a class-map is configured with **exceed-action drop**, re-configuring the same class-map with **exceed-action transmit** causes class-map configurations to conflict for the same class-map.

  Workaround: If you plan to change a class-map action, such as **exceed-action**, you meed to remove the class-map with the **no class c1** command under policy-map submode. Then, apply the new class-map with the updated changes. CSCsk70826)

- If *burst* is not explicitly configured for a single rate policer, the **show policy-map command** displays an incorrect burst value.

  Workaround: Enter the **show policy-map interface** command. CSCsi71036

- When you enter the **show policy-map vlan** *vlan* command, unconditional marking actions that are configured on the VLAN are not shown.

  Workaround: None. However, if you enter the **show policy-map** *name*, the unconditional marking actions are displayed. CSCsi94144

- IGMP snooping entries are active even after disabling IGMP snooping globally and per VLAN.

  Workarounds: Disable IGMP snooping on all the relevant VLANs before disabling it globally.

- IPv6 entries are active in the CAM; the CPU receives IPv6 packets.

  Workaround: Unconfigure any generic QOS policies from the system. The QoS policies with the **match any** attribute cause IPv6 entries to become active. If the switch is a pure Layer 2 device, remove the generic protocol family attributes and narrow it to the protocol family.

  CSCsq84796

- In Cisco IOS Release 12.2(54)SG, if an etherchannel is a member of a flexlink pair, then static MAC addresses configured on the EtherChannel are not moved to the alternate port when the EtherChannel fails (flexlink failure)

  Workaround: None. CSCsq99468

- When a CFM Inward Facing MEP(IFM) is configured on a VLAN that is not allocated on a switch port that is DOWN, the **show ethernet cfm maintenance-points local** command displays the IFM CC Status as **Inactive**. Then, you allocate the VLAN, the CC-status remains **Inactive**.

  You only see this symptom if you did not allocate a VLAN before you configure the IFM, then at a later time allocate the same VLAN.

  Workaround: Unconfigure, then reconfigure the IFM on the port.

- An IP unnumbered configuration is lost after a reload.

  Workarounds: Do one of the following:

  – After a reload, copy the startup-config to the running-config.

  – Use a loopback interface as the target of the **ip unnumbered** command

  – Change the CLI configuration such that during bootup, the router port is created first.

  CSCsq63051

- In SSO mode on the Catalyst 4900M switch, when a port-channel is created, deleted, and re-created on an active supervisor engine with the same channel-number, the standby port-channel state goes out of sync. After a switch over, the following message displays:

  ```
  %PM-4-PORT_INCONSISTENT: STANDBY:Port is inconsistent:
  ```

  Workaround: When the port channel starts to flap, enter **shut** and **no shut** on the port channel. After the first switchover and after deleting the portchannel, create a new channel. CSCsr00333

- Duplicate serial number error messages are reported on switching One X Convertor with SFP+, SFP+, X2 to another port, the inserted port enters a faulty status.

  This problem impacts X2, OneX converters, and SFP+ on the Supervisor Engine 6-E, and linecards.

  Workaround: Remove and reinsert the One X Convertor with SFP+, SFP+ alone, or X2 after some perceivable delay. CSCsu43461

- VTP databases do not propagate through promiscuous trunk ports. If only promiscuous trunks are configured, users will not see the VLAN updates on the other switches in the VTP domain.

  Workaround: For VTP database propagation, configure ISL/dot1q trunk port. CSCsu43445

- After posture validation succeeds, the following benign traceback messages may appear after you unconfigure the global RADIUS and IP device tracking commands:

  ```
  %SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
  eou_auth 4.1.0.101   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
  106617F8
  %SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
  eou_auth 4.1.0.102   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
  106617F8
  ```

  This applies to classic or E-series Catalyst 4500 supervisor engines running Cisco IOS Release 12.2(50)SG

  Workaround: None. CSCsw14005

- On a Catalyst 4900M switch, the host's MAC address is not synchronized to the standby supervisor engine after you unconfigure 802.1X on the port and reconnect the host to a IP phone (with CDP port status TLV support) that is connected to the switch.

  If the switch were to run a supervisor switchover while in this state, the host's MAC address would not be present in the new active supervisor engine's MAC address table, causing possible connectivity interruption on the host.

Workaround: Enter the **shutdown** command, followed by the **no shutdown** command on the interface. This triggers relearning and synchronizing of the host's MAC to the standby supervisor engine. CSCsw91661

- When multiple streams of CRC errors are encountered on WS-C4900M configured with OAM Configuration of monitoring the frame errored seconds, OAM does not always report the value of errored frame seconds correctly.

  To observe this issue, the following CLIs are configured with window size as the period for monitoring the errors and a low threshold equal to the number of CRC errored seconds seen/expected.

  ```
  ethernet oam link-monitor frame-seconds window
  ethernet oam link-monitor frame-seconds threshold low
  ```

  Workaround: Configure a lower value of low threshold such that the frame errors are seen divided into the expected number of frame errored seconds. CSCsy37181

- If you simultaneously apply a service-policy to a port in the output direction and a service-policy to a vlan-range under that port in the output direction, the class-map hit counters in the output of the **show policy-map interface** command are wrong.

  Workaround: None.

  The queue transmit counters as well as the policing statistics (if any) are correct. CSCsz20149

- On wireless control system (WCS), some device information is incorrectly displayed for PCs sitting behind an lldp-med capable phone. Specifically, WCS displays the phone's serial number, model number, and software version in the PC's device information. All other information about the PC is correctly displayed on WCS.

  This only happens when the switch is running network mobility service protocol (nmsp). It does not happen if the phone is CDP enabled.

  Workaround: Use VLAN ID or name to differentiate the IP phone and the PC sitting behind the phone on the WCS. Specifically, the IP phone is detected on the voice VLAN, and the displayed information of serial number, model number, and software version is correct. However, a PC sitting behind the phone is detected on a data VLAN, and the displayed device information is wrong and should be ignored. CSCsz34522

- When you configure **switchport block multicast** on a switch running Cisco IOS Release 12.2(53)SG1 and later or 12.2(50)SG6 and later, Layer 2 multicast is not blocked.

  Prior to Cisco IOS Release 12.2(53)SG1, 12.2(50)SG6, the **switchport block multicast** command would block IP Multicast, Layer 2 multicast, and broadcast traffic (CSCta61825).

  Workaround: None. CSCtb30327

- If *time* is not specified in the **link debounce** command, the default value depends on the supervisor engine. The default is 10 mS for 4948E, C4900M, Supervisor Engine 6-E, and Supervisor Engine 6L-E. The default is 100 mS for all other supervisor engines.

  Workaround: None. CSCte51948

- Fast UDLD in aggressive mode may incorrectly errdisable a link in the following scenarios:
  - Fast UDLD peer switch performs SSO.
  - Fast UDLD peer switch is reloaded.
  - One or more interfaces on a fast UDLD peer switch are shut down (or the port mode changes from switchport to routed, and vice versa).

Note To reduce the likelihood of this event, connect at least two physical interfaces between fast UDLD peer switches. You must configure the interfaces with the same neighbor fast hello interval.

Workarounds:

- Reset the error disabled links with the **udld reset** command.
- Configure error disable recovery with the commands **errdisable recovery cause udld** and **errdisable recovery interval** *value (*between 30 and 86400 sec).
- Manually clear errdisable on the local interface with a **shutdown** then a **no shutdown**.

CSCtc99007

- On a peer interface on a Catalyst 4948E Ethernet Switch, if errdisabled mode flap detection is set to a very small number (such as 2 flaps in 10 sec), a 10GE link flap may cause the peer interface to enter the errdisabled state.

  Workarounds: The Cisco switch default link-flap detection value is 5 flaps in 10 seconds. Use the default value or larger numbers. CSCtg07677

- Before large PACLs are fully loaded in hardware, you might observe a false completion messages like the following:

```
Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-HWPROGSUCCESS: Input Security: pacl - now
fully loaded in hardware *Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-ALLACLINHW: All
configured ACLs now fully loaded in hardware - hardware switching / QoS restored.
```

  This issue does not impact functionality.

  Workaround: None.

  You must wait for the ACLs to be programmed before performing other TCAM related changes. CSCtd57063

- When you have enabled EPM logging and the client is authenticated via MAB or Webauth, the value of AUTHTYPE is DOT1X in EPM syslog messages irrespective of the authentication method.

  Similarly, the show epm sessions command always displays the authentication method as DOT1X.

  Workaround: To view the authentication method used for a client, enter the **show authentication sessions** command. CSCsx42157

- With CFM enabled globally as well as on an ingress interface, CFM packets received on the interface are not policed with hardware control plane policing.

  Workaround: None. CSCso93282

- With a NEAT configuration on an ASW (Catalyst 4500 series switch) connected to an SSW (Catalyst 3750 series switch) serving as a root bridge and with redundant links between ASW and SSW, the following occur:
  - STP does not stabilize.
  - The SVI (network) is unreachable. If an SVI exists on the ASW, because of the STP flap in the setup as well as the CISP operations, the SVI MAC configuration on the ASW is incorrect.

  Workaround: Configure the ASW or any other switch upstream as the root-bridge for all the VLANs. CSCtg71030

- When a packet sampling monitor is applied on a Layer 3 port, which is also configured for Layer 3 RACL, you might observe multiple merged ACL path signatures stemming from merging the sampling and security ACL features. This behavior results in multiple (twice) copies of flattened ACE programmed in the TCAM, wasting ACL TCAM space.

  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches. It does not impact functionality.

  Workarounds: Do one of the following:

  - Change the interface to a Layer 2 switch port
  - Do not configure an ACL access-list on the same Layer 3 interface where sampling monitor is enabled. CSCtn79032

- When either the RADIUS-server test feature or RADIUS-erver dead-criteria is configured and either RADIUS-server deadtime is not configured or is set to 0, the RADIUS-server status is not properly relayed to AAA.

  Workaround: Configure both dead-criteria and deadtime.

  ```
  radius-server dead-criteria
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  CSCtl06706

- When two distinct Layer 3 CE-facing interfaces exist, each connected to a CE to split WCCP between the two CEs, and you move a particular WCCP service (like 60 (ftp-native)) from one Layer 3 interface to the other, the target interface fails to completely transfer the service to the new CE from the old CE.

  Workaround: Shutdown the CE-facing interface. Once all the mask-value entries point to the target CE, unshut the CE-facing interface. CSCtl09941

- When spanning tree is changed from PVST to Rapid PVST and you enter the **show spanning-tree vlan** command, the ports configured as promiscuous trunks are not listed as part of the spanning tree.

  Workaround: Enter **shut**, then **no shut** on the ports. CSCtn88228

- If a large number of VLAN mappings are configured, a member port might fail to join a port channel and no warming is issued.

  Workaround: Reduce the number of VLAN mappings. CSCtn56208

- WCCP service is not reacquired when a service group with a multicast group-address is unconfigured, and then reconfigured.

  Workaround: Configure ip multicast-routing globally and establish ip pim sparse-dense-mode on the CE-facing interface. CSCtl97692

- If an interface whose IP address is being used as the Router ID is deleted or shuts down and you configure a service group with a multicast group-address, packet redirection to CE stops and packets are forwarded directly to the destination.

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  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches.

  Workaround: None. CSCtk97612

- If you reboot a switch, the configured value of interface MTU size on the members of port-channel interface does not function for IPv6 traffic.

Workaround: After the switch reloads, enter **shut**, then **no shut** on the port-channel interface.

CSCto27085

- Global WCCP service configuration fails to enable (WCCP global config is accepted but nvgen fails) on a newly deployed switch if the switch is not enabled for SVI or a Layer 3 interface.

  Workaround: Enable a Layer 3 interface in the running config. CSCsc88636.

- If you enter the **clear ip mroute ?** command, only the **vrf** option is displayed. The **Hostname** and ' * ' options are not displayed, although they are accepted by the system, and the **clear ip mroute** command functions as expected.

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- Dynamic ACLs do not function correctly if they include advanced operators, including dscp/ipp/tos, log/log-input, fragments and/or tcp flag operators.

  Workaround: Remove these operators from any dynamic ACLs. CSCts05302

- Configuring an interface as uni-directional with the **unidirectional** *send-only* | *receive-only* command still allows the interface to send (configured as “Send-only Unidirection Ethernet mode”) or receive (configured as "Receive-only Unidirection Ethernet mode") packets in a bi-directional mode.

  Workaround: None. CSCtx95359

- When a trunk port is configured with a native VLAN other than VLAN 1, REP packets are not sent on that VLAN.

  Workaround: Retain the default setting (VLAN 1) for the native VLAN on trunks ports. CSCud05521

- If REP is configured on a dot1q trunk and the native VLAN is administratively set to a non-default value, REP packets are not sent on the native VLAN.

  Workaround: Retain the trunk native V LAN as 1. CSCud05521

- If a dACL name is too long (about 24 characters, depending on the interface where it is applied), the ACL is incorrectly shared over multiple ports.

  Workaround: Shorten the dACL name. CSCug78653

- redirect-url and redirect-acl are not cleared after a successful CoA, causing the final step of Central Web Authentication to fail.

  Workaround: Return a dACL in the authorization profile with successful guest authentication.

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- If URL redirect is installed as part of authorization and either of the following occurs, memory will leak:

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  Workaround: Configure RADIUS test and dead criteria.

Example:

```
radius-server dead-criteria time 10 tries 2
radius-server host <ip> test username test key <key>
radius-server deadtime 10
```

CSCtn92693

- If 10Gbps BaseT ports (on WS-X4908-10G-RJ45) are connected to a peer device using a Broadcom BCM84833 chipset, the connection either never boots or takes a very long time (up to an hour).

  This issue applies to Cisco IOS Release 15.0(2)SG through 15.0(2)SG7, and 15.1(2)SG through 15.1(2)SG3.

  Workaround: Downgrade to Cisco IOS Release 12.2(54)SG. CSCug68370

- In the output of the **show interface** command, output counters for an EtherChannel member remain zero provided the ports are flapped from a peer and the switch is either Catalyst 4900M, Catalyst 4948E, or 4948E-F, or the supervisor engine is either 6E or 6L-E.

  Workaround: Enter the **show platform software interface Gix/xx statistic** command.

  CSCuf60629

- If you configure Open Authentication and perform SSO, the spanning tree state and MAC address are not synchronized to the new standby supervisor engine. The issue interrupts traffic only after the second switchover, because after the initial switchover the new standby supervisor engine possesses the wrong state, and the second switchover will start the port in the blocking state.

  Workaround: Enter **shut**, and then **no shut** on the port to synchronize the STP state. CSCtf52437

Resolved Caveats in Cisco IOS Release 15.0(2)SG5

This section lists the resolved caveats in Release 15.2(2)SG5:

- On a switch running Cisco IOS Release 15.0(2)SG4 or 15.1(1)SG using 4648* or 4748* PoE linecards with connected devices that link flap frequently, a single port on a linecard fails to link up.

  Workaround: Enter **shut** then **no shut** the port to restore connectivity. CSCtz94862

- On a switch running Cisco IOS Release 15.0(2)SG4 or 15.1(1)SG using 4648* or 4748* linecards with PoE, a PoE device will not power up on a single port whereas it works on a different port on the same switch.

  Workarounds:

  - Connecting a non-PoE device
  - Enter **shut** then **no shut** on the port. CSCua63562

- If a switch is configured with the **aaa accounting send stop-record authentication failure** command, and MAB fails on the port and subsequent attempts are made to authorize the device after the restart timer expires, a high level of memory usage due to the "MAB Framework" process is observed.

  Workaround: Unconfigure the following from the switch: **aaa accounting send stop-record authentication failure**. CSCtj69212

Open Caveats in Cisco IOS Release 15.0(2)SG4

This section lists the open caveats in Cisco IOS Release 15.0(2)SG4:

- On rare occasions, if you use an X2 SR transceiver on a WS-X4706-10GE running Cisco IOS Release 12.2(40)SG, you will observe CRC errors after a reload or power cycle when you insert the card or the X2.

  Workaround: Reinsert the X2. CSCsk43618

- If a class-map is configured with **exceed-action drop**, re-configuring the same class-map with **exceed-action transmit** causes class-map configurations to conflict for the same class-map.

  Workaround: If you plan to change a class-map action, such as **exceed-action**, you meed to remove the class-map with the **no class c1** command under policy-map submode. Then, apply the new class-map with the updated changes. CSCsk70826)

- If *burst* is not explicitly configured for a single rate policer, the **show policy-map command** displays an incorrect burst value.

  Workaround: Enter the **show policy-map interface** command. CSCsi71036

- When you enter the **show policy-map vlan** *vlan* command, unconditional marking actions that are configured on the VLAN are not shown.

  Workaround: None. However, if you enter the **show policy-map** *name*, the unconditional marking actions are displayed. CSCsi94144

- IGMP snooping entries are active even after disabling IGMP snooping globally and per VLAN.

  Workarounds: Disable IGMP snooping on all the relevant VLANs before disabling it globally.

- IPv6 entries are active in the CAM; the CPU receives IPv6 packets.

  Workaround: Unconfigure any generic QOS policies from the system. The QoS policies with the **match any** attribute cause IPv6 entries to become active. If the switch is a pure Layer 2 device, remove the generic protocol family attributes and narrow it to the protocol family.

  CSCsq84796

- In Cisco IOS Release 12.2(54)SG, if an etherchannel is a member of a flexlink pair, then static MAC addresses configured on the EtherChannel are not moved to the alternate port when the EtherChannel fails (flexlink failure)

  Workaround: None. CSCsq99468

- When a CFM Inward Facing MEP(IFM) is configured on a VLAN that is not allocated on a switch port that is DOWN, the **show ethernet cfm maintenance-points local** command displays the IFM CC Status as **Inactive**. Then, you allocate the VLAN, the CC-status remains **Inactive**.

  You only see this symptom if you did not allocate a VLAN before you configure the IFM, then at a later time allocate the same VLAN.

  Workaround: Unconfigure, then reconfigure the IFM on the port.

- An IP unnumbered configuration is lost after a reload.

  Workarounds: Do one of the following:

  - After a reload, copy the startup-config to the running-config.
  - Use a loopback interface as the target of the **ip unnumbered** command
  - Change the CLI configuration such that during bootup, the router port is created first.

  CSCsq63051

- In SSO mode on the Catalyst 4900M switch, when a port-channel is created, deleted, and re-created on an active supervisor engine with the same channel-number, the standby port-channel state goes out of sync. After a switch over, the following message displays:

  ```
  %PM-4-PORT_INCONSISTENT: STANDBY:Port is inconsistent:
  ```

  Workaround: When the port channel starts to flap, enter **shut** and **no shut** on the port channel. After the first switchover and after deleting the portchannel, create a new channel. CSCsr00333

- Duplicate serial number error messages are reported on switching One X Convertor with SFP+, SFP+, X2 to another port, the inserted port enters a faulty status.

  This problem impacts X2, OneX converters, and SFP+ on the Supervisor Engine 6-E, and linecards.

  Workaround: Remove and reinsert the One X Convertor with SFP+, SFP+ alone, or X2 after some perceivable delay. CSCsu43461

- VTP databases do not propagate through promiscuous trunk ports. If only promiscuous trunks are configured, users will not see the VLAN updates on the other switches in the VTP domain.

  Workaround: For VTP database propagation, configure ISL/dot1q trunk port. CSCsu43445

- After posture validation succeeds, the following benign traceback messages may appear after you unconfigure the global RADIUS and IP device tracking commands:

  ```
  %SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
  eou_auth 4.1.0.101   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
  106617F8
  %SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
  eou_auth 4.1.0.102   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
  106617F8
  ```

  This applies to classic or E-series Catalyst 4500 supervisor engines running Cisco IOS Release 12.2(50)SG

  Workaround: None. CSCsw14005

- On a Catalyst 4900M switch, the host's MAC address is not synchronized to the standby supervisor engine after you unconfigure 802.1X on the port and reconnect the host to a IP phone (with CDP port status TLV support) that is connected to the switch.

  If the switch were to run a supervisor switchover while in this state, the host's MAC address would not be present in the new active supervisor engine's MAC address table, causing possible connectivity interruption on the host.

  Workaround: Enter the **shutdown** command, followed by the **no shutdown** command on the interface. This triggers relearning and synchronizing of the host's MAC to the standby supervisor engine. CSCsw91661

- When multiple streams of CRC errors are encountered on WS-C4900M configured with OAM Configuration of monitoring the frame errored seconds, OAM does not always report the value of errored frame seconds correctly.

  To observe this issue, the following CLIs are configured with window size as the period for monitoring the errors and a low threshold equal to the number of CRC errored seconds seen/expected.

  ```
  ethernet oam link-monitor frame-seconds window
  ethernet oam link-monitor frame-seconds threshold low
  ```

  Workaround: Configure a lower value of low threshold such that the frame errors are seen divided into the expected number of frame errored seconds. CSCsy37181

- If you simultaneously apply a service-policy to a port in the output direction and a service-policy to a vlan-range under that port in the output direction, the class-map hit counters in the output of the **show policy-map interface** command are wrong.

  Workaround: None.

  The queue transmit counters as well as the policing statistics (if any) are correct. CSCsz20149

- On wireless control system (WCS), some device information is incorrectly displayed for PCs sitting behind an lldp-med capable phone. Specifically, WCS displays the phone's serial number, model number, and software version in the PC's device information. All other information about the PC is correctly displayed on WCS.

  This only happens when the switch is running network mobility service protocol (nmsp). It does not happen if the phone is CDP enabled.

  Workaround: Use VLAN ID or name to differentiate the IP phone and the PC sitting behind the phone on the WCS. Specifically, the IP phone is detected on the voice VLAN, and the displayed information of serial number, model number, and software version is correct. However, a PC sitting behind the phone is detected on a data VLAN, and the displayed device information is wrong and should be ignored. CSCsz34522

- When you configure **switchport block multicast** on a switch running Cisco IOS Release 12.2(53)SG1 and later or 12.2(50)SG6 and later, Layer 2 multicast is not blocked.

  Prior to Cisco IOS Release 12.2(53)SG1, 12.2(50)SG6, the **switchport block multicast** command would block IP Multicast, Layer 2 multicast, and broadcast traffic (CSCta61825).

  Workaround: None. CSCtb30327

- If *time* is not specified in the **link debounce** command, the default value depends on the supervisor engine. The default is 10 mS for 4948E, C4900M, Supervisor Engine 6-E, and Supervisor Engine 6L-E. The default is 100 mS for all other supervisor engines.

  Workaround: None. CSCte51948

- Fast UDLD in aggressive mode may incorrectly errdisable a link in the following scenarios:
  - Fast UDLD peer switch performs SSO.
  - Fast UDLD peer switch is reloaded.
  - One or more interfaces on a fast UDLD peer switch are shut down (or the port mode changes from switchport to routed, and vice versa).

Note To reduce the likelihood of this event, connect at least two physical interfaces between fast UDLD peer switches. You must configure the interfaces with the same neighbor fast hello interval.

Workarounds:

- Reset the error disabled links with the **udld reset** command.
- Configure error disable recovery with the commands **errdisable recovery cause udld** and **errdisable recovery interval** *value (*between 30 and 86400 sec).
- Manually clear errdisable on the local interface with a **shutdown** then a **no shutdown**.

CSCtc99007

- On a peer interface on a Catalyst 4948E Ethernet Switch, if errdisabled mode flap detection is set to a very small number (such as 2 flaps in 10 sec), a 10GE link flap may cause the peer interface to enter the errdisabled state.

  Workarounds: The Cisco switch default link-flap detection value is 5 flaps in 10 seconds. Use the default value or larger numbers. CSCtg07677

- Before large PACLs are fully loaded in hardware, you might observe a false completion messages like the following:

  ```
  Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-HWPROGSUCCESS: Input Security: pacl - now
  fully loaded in hardware *Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-ALLACLINHW: All
  configured ACLs now fully loaded in hardware - hardware switching / QoS restored.
  ```

  This issue does not impact functionality.

  Workaround: None.

  You must wait for the ACLs to be programmed before performing other TCAM related changes. CSCtd57063

- When you have enabled EPM logging and the client is authenticated via MAB or Webauth, the value of AUTHTYPE is DOT1X in EPM syslog messages irrespective of the authentication method.

  Similarly, the show epm sessions command always displays the authentication method as DOT1X.

  Workaround: To view the authentication method used for a client, enter the **show authentication sessions** command. CSCsx42157

- With CFM enabled globally as well as on an ingress interface, CFM packets received on the interface are not policed with hardware control plane policing.

  Workaround: None. CSCso93282

- With a NEAT configuration on an ASW (Catalyst 4500 series switch) connected to an SSW (Catalyst 3750 series switch) serving as a root bridge and with redundant links between ASW and SSW, the following occur:

  – STP does not stabilize.

  – The SVI (network) is unreachable. If an SVI exists on the ASW, because of the STP flap in the setup as well as the CISP operations, the SVI MAC configuration on the ASW is incorrect.

  Workaround: Configure the ASW or any other switch upstream as the root-bridge for all the VLANs. CSCtg71030

- When a packet sampling monitor is applied on a Layer 3 port, which is also configured for Layer 3 RACL, you might observe multiple merged ACL path signatures stemming from merging the sampling and security ACL features. This behavior results in multiple (twice) copies of flattened ACE programmed in the TCAM, wasting ACL TCAM space.

  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches. It does not impact functionality.

  Workarounds: Do one of the following:

  – Change the interface to a Layer 2 switch port

  – Do not configure an ACL access-list on the same Layer 3 interface where sampling monitor is enabled. CSCtn79032

- When either the RADIUS-server test feature or RADIUS-erver dead-criteria is configured and either RADIUS-server deadtime is not configured or is set to 0, the RADIUS-server status is not properly relayed to AAA.

  Workaround: Configure both dead-criteria and deadtime.

```
radius-server dead-criteria
radius-server deadtime
```

CSCtl06706

- When two distinct Layer 3 CE-facing interfaces exist, each connected to a CE to split WCCP between the two CEs, and you move a particular WCCP service (like 60 (ftp-native)) from one Layer 3 interface to the other, the target interface fails to completely transfer the service to the new CE from the old CE.

  Workaround: Shutdown the CE-facing interface. Once all the mask-value entries point to the target CE, unshut the CE-facing interface. CSCtl09941

- When spanning tree is changed from PVST to Rapid PVST and you enter the **show spanning-tree vlan** command, the ports configured as promiscuous trunks are not listed as part of the spanning tree.

  Workaround: Enter **shut**, then **no shut** on the ports. CSCtn88228

- If a large number of VLAN mappings are configured, a member port might fail to join a port channel and no warming is issued.

  Workaround: Reduce the number of VLAN mappings. CSCtn56208

- WCCP service is not reacquired when a service group with a multicast group-address is unconfigured, and then reconfigured.

  Workaround: Configure ip multicast-routing globally and establish ip pim sparse-dense-mode on the CE-facing interface. CSCtl97692

- If an interface whose IP address is being used as the Router ID is deleted or shuts down and you configure a service group with a multicast group-address, packet redirection to CE stops and packets are forwarded directly to the destination.

  Workaround: Unconfigure and reconfigure the service group. CSCtn88087

- When a sampling monitor is configured on a routed port or on a VLAN (an SVI with just one port as a member) and **bidir multicast** is enabled, a packet sample may be exported even though the original multicast packet was not forwarded by the switch.

  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches.

  Workaround: None. CSCtk97612

- If you reboot a switch, the configured value of interface MTU size on the members of port-channel interface does not function for IPv6 traffic.

  Workaround: After the switch reloads, enter **shut**, then **no shut** on the port-channel interface.

  CSCto27085

- Global WCCP service configuration fails to enable (WCCP global config is accepted but nvgen fails) on a newly deployed switch if the switch is not enabled for SVI or a Layer 3 interface.

  Workaround: Enable a Layer 3 interface in the running config. CSCsc88636.

- If you enter the **clear ip mroute ?** command, only the **vrf** option is displayed. The **Hostname** and ' * ' options are not displayed, although they are accepted by the system, and the **clear ip mroute** command functions as expected.

  Workaround: None. CSCto59368

- Dynamic ACLs do not function correctly if they include advanced operators, including dscp/ipp/tos, log/log-input, fragments and/or tcp flag operators.

  Workaround: Remove these operators from any dynamic ACLs. CSCts05302

- Configuring an interface as uni-directional with the **unidirectional** *send-only* | *receive-only* command still allows the interface to send (configured as “Send-only Unidirection Ethernet mode”) or receive (configured as "Receive-only Unidirection Ethernet mode") packets in a bi-directional mode.

  Workaround: None. CSCtx95359

- On a switch running Cisco IOS Release 15.0(2)SG4 or 15.1(1)SG using 4648* or 4748* PoE linecards with connected devices that link flap frequently, a single port on a linecard fails to link up.

  Workaround: Enter **shut** then **no shut** the port to restore connectivity. CSCtz94862

- On a switch running Cisco IOS Release 15.0(2)SG4 or 15.1(1)SG using 4648* or 4748* linecards with PoE, a PoE device will not power up on a single port whereas it works on a different port on the same switch.

  Workarounds:

  - Connecting a non-PoE device
  - Enter **shut** then **no shut** on the port. CSCua63562

- If a switch is configured with the **aaa accounting send stop-record authentication failure** command, and MAB fails on the port and subsequent attempts are made to authorize the device after the restart timer expires, a high level of memory usage due to the "MAB Framework" process is observed.

  Workaround: Unconfigure the following from the switch: **aaa accounting send stop-record authentication failure**. CSCtj69212

- When a trunk port is configured with a native VLAN other than VLAN 1, REP packets are not sent on that VLAN.

  Workaround: Retain the default setting (VLAN 1) for the native VLAN on trunks ports. CSCud05521

- If REP is configured on a dot1q trunk and the native VLAN is administratively set to a non-default value, REP packets are not sent on the native VLAN.

  Workaround: Retain the trunk native V LAN as 1. CSCud05521

- If a dACL name is too long (about 24 characters, depending on the interface where it is applied), the ACL is incorrectly shared over multiple ports.

  Workaround: Shorten the dACL name. CSCug78653

- redirect-url and redirect-acl are not cleared after a successful CoA, causing the final step of Central Web Authentication to fail.

  Workaround: Return a dACL in the authorization profile with successful guest authentication.

  CSCue62019

- If URL redirect is installed as part of authorization and either of the following occurs, memory will leak:

  - A fast stream of traffic matches the URL redirect ACL as IPDT clears an address.
  - A traffic stream matches the URL redirect ACL and no URL redirect policy is installed for that IP address.

  If memory leak occurs repeatedly, IPDT and other control packet processing ultimately ceases.

  Workaround: If this behavior completely fills the CPU buffer, the switch must be reloaded. However, the frequency of encountering a stuck queue can be reduced to nearly zero by modifying the URL redirect ACL to permit only 80/443 traffic. CSCug56646

- If a device is authenticating while the RADIUS server goes down, the port connected to the device may enter the err-disabled state.

  Workaround: Configure RADIUS test and dead criteria.

  Example:

  ```
  radius-server dead-criteria time 10 tries 2
  radius-server host <ip> test username test key <key>
  radius-server deadtime 10
  ```

  CSCtn92693

- If 10Gbps BaseT ports (on WS-X4908-10G-RJ45) are connected to a peer device using a Broadcom BCM84833 chipset, the connection either never boots or takes a very long time (up to an hour).

  This issue applies to Cisco IOS Release 15.0(2)SG through 15.0(2)SG7, and 15.1(2)SG through 15.1(2)SG3.

  Workaround: Downgrade to Cisco IOS Release 12.2(54)SG. CSCug68370

- In the output of the **show interface** command, output counters for an EtherChannel member remain zero provided the ports are flapped from a peer and the switch is either Catalyst 4900M, Catalyst 4948E, or 4948E-F, or the supervisor engine is either 6E or 6L-E.

  Workaround: Enter the **show platform software interface Gix/xx statistic** command.

  CSCuf60629

- If you configure Open Authentication and perform SSO, the spanning tree state and MAC address are not synchronized to the new standby supervisor engine. The issue interrupts traffic only after the second switchover, because after the initial switchover the new standby supervisor engine possesses the wrong state, and the second switchover will start the port in the blocking state.

  Workaround: Enter **shut**, and then **no shut** on the port to synchronize the STP state. CSCtf52437

Resolved Caveats in Cisco IOS Release 15.0(2)SG4

This section lists the resolved caveats in Release 15.2(2)SG4:

- If two clients are authenticated by MAB on a multi-host port, when the first client moves to a different port using MAC Move, the second host is not authenticated; it remains in the running state.

  Workaround: Clear the MAC address. CSCtn24046

- After a switch reestablishes a lost connection with AAA servers configured for broadcast accounting, the switch crashes.

  Workaround: Do not use the **broadcast** keyword in the aaa accounting configuration. CSCts56125

- A switch configured with 802.1X might shows considerable CPU usage by the 802.1X switch process and displays the following message:

  ```
  SYS-2-MALLOCFAIL messages, and - on redundant systems - begins logging EM-4-SENDFAILED
  messages,
  ```

  The occurs under the following conditions:

  - Multi-auth (or multi-host) and MAB dot1x are configured on a port.
  - A voice VLAN is not configured on the port.
  - The device authenticates through 802.1X.

  - The connected device sends no traffic, falls over to MAB, and then successfully authenticates through 802.1X.
  - A dynamic VLAN is assigned to the port following 802.1X authorization.

  Workarounds:

  - Enter **shut** then **no shut** on the port to halt the high CPU and log messages.
  - Enter the **switchport voice vlan** command on the port. CSCtw73754

- If PoE linecards are present and you enter either the **show power inline module** *x* or **show power inline module** *x* **detail** command, very rarely the supervisor engine might crash.

  Workaround: None. CSCtx25697

- After a few hours of operation, during which DHCP is enabled and sessions receive DHCP information from a RADIUS server, a Cisco ASR router running as an LNS box crashes with DHCP related errors.

  Workaround: None. CSCtj48387

Open Caveats in Cisco IOS Release 15.0(2)SG3

This section lists the open caveats in Cisco IOS Release 15.0(2)SG3:

- On rare occasions, if you use an X2 SR transceiver on a WS-X4706-10GE running Cisco IOS Release 12.2(40)SG, you will observe CRC errors after a reload or power cycle when you insert the card or the X2.

  Workaround: Reinsert the X2. CSCsk43618

- If a class-map is configured with **exceed-action drop**, re-configuring the same class-map with **exceed-action transmit** causes class-map configurations to conflict for the same class-map.

  Workaround: If you plan to change a class-map action, such as **exceed-action**, you meed to remove the class-map with the **no class c1** command under policy-map submode. Then, apply the new class-map with the updated changes. CSCsk70826)

- If *burst* is not explicitly configured for a single rate policer, the **show policy-map command** displays an incorrect burst value.

  Workaround: Enter the **show policy-map interface** command. CSCsi71036

- When you enter the **show policy-map vlan** *vlan* command, unconditional marking actions that are configured on the VLAN are not shown.

  Workaround: None. However, if you enter the **show policy-map** *name*, the unconditional marking actions are displayed. CSCsi94144

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  Workarounds: Disable IGMP snooping on all the relevant VLANs before disabling it globally.

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  Workaround: Unconfigure any generic QOS policies from the system. The QoS policies with the **match any** attribute cause IPv6 entries to become active. If the switch is a pure Layer 2 device, remove the generic protocol family attributes and narrow it to the protocol family.

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- In Cisco IOS Release 12.2(54)SG, if an etherchannel is a member of a flexlink pair, then static MAC addresses configured on the EtherChannel are not moved to the alternate port when the EtherChannel fails (flexlink failure)

Workaround: None. CSCsq99468

- When a CFM Inward Facing MEP(IFM) is configured on a VLAN that is not allocated on a switch port that is DOWN, the **show ethernet cfm maintenance-points local** command displays the IFM CC Status as **Inactive**. Then, you allocate the VLAN, the CC-status remains **Inactive**.

  You only see this symptom if you did not allocate a VLAN before you configure the IFM, then at a later time allocate the same VLAN.

  Workaround: Unconfigure, then reconfigure the IFM on the port.

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  - After a reload, copy the startup-config to the running-config.
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  %PM-4-PORT_INCONSISTENT: STANDBY:Port is inconsistent:
  ```

  Workaround: When the port channel starts to flap, enter **shut** and **no shut** on the port channel. After the first switchover and after deleting the portchannel, create a new channel. CSCsr00333

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  This applies to classic or E-series Catalyst 4500 supervisor engines running Cisco IOS Release 12.2(50)SG

  Workaround: None. CSCsw14005

- On a Catalyst 4900M switch, the host's MAC address is not synchronized to the standby supervisor engine after you unconfigure 802.1X on the port and reconnect the host to a IP phone (with CDP port status TLV support) that is connected to the switch.

  If the switch were to run a supervisor switchover while in this state, the host's MAC address would not be present in the new active supervisor engine's MAC address table, causing possible connectivity interruption on the host.

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  ethernet oam link-monitor frame-seconds window
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  Prior to Cisco IOS Release 12.2(53)SG1, 12.2(50)SG6, the **switchport block multicast** command would block IP Multicast, Layer 2 multicast, and broadcast traffic (CSCta61825).

  Workaround: None. CSCtb30327

- If *time* is not specified in the **link debounce** command, the default value depends on the supervisor engine. The default is 10 mS for 4948E, C4900M, Supervisor Engine 6-E, and Supervisor Engine 6L-E. The default is 100 mS for all other supervisor engines.

  Workaround: None. CSCte51948

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- On a peer interface on a Catalyst 4948E Ethernet Switch, if errdisabled mode flap detection is set to a very small number (such as 2 flaps in 10 sec), a 10GE link flap may cause the peer interface to enter the errdisabled state.

  Workarounds: The Cisco switch default link-flap detection value is 5 flaps in 10 seconds. Use the default value or larger numbers. CSCtg07677

- Before large PACLs are fully loaded in hardware, you might observe a false completion messages like the following:

```
Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-HWPROGSUCCESS: Input Security: pacl - now
fully loaded in hardware *Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-ALLACLINHW: All
configured ACLs now fully loaded in hardware - hardware switching / QoS restored.
```

  This issue does not impact functionality.

  Workaround: None.

  You must wait for the ACLs to be programmed before performing other TCAM related changes. CSCtd57063

- When you have enabled EPM logging and the client is authenticated via MAB or Webauth, the value of AUTHTYPE is DOT1X in EPM syslog messages irrespective of the authentication method.

  Similarly, the show epm sessions command always displays the authentication method as DOT1X.

  Workaround: To view the authentication method used for a client, enter the **show authentication sessions** command. CSCsx42157

- With CFM enabled globally as well as on an ingress interface, CFM packets received on the interface are not policed with hardware control plane policing.

  Workaround: None. CSCso93282

- With a NEAT configuration on an ASW (Catalyst 4500 series switch) connected to an SSW (Catalyst 3750 series switch) serving as a root bridge and with redundant links between ASW and SSW, the following occur:
  - STP does not stabilize.
  - The SVI (network) is unreachable. If an SVI exists on the ASW, because of the STP flap in the setup as well as the CISP operations, the SVI MAC configuration on the ASW is incorrect.

  Workaround: Configure the ASW or any other switch upstream as the root-bridge for all the VLANs. CSCtg71030

- When a packet sampling monitor is applied on a Layer 3 port, which is also configured for Layer 3 RACL, you might observe multiple merged ACL path signatures stemming from merging the sampling and security ACL features. This behavior results in multiple (twice) copies of flattened ACE programmed in the TCAM, wasting ACL TCAM space.

  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches. It does not impact functionality.

  Workarounds: Do one of the following:

  - Change the interface to a Layer 2 switch port
  - Do not configure an ACL access-list on the same Layer 3 interface where sampling monitor is enabled. CSCtn79032

- When either the RADIUS-server test feature or RADIUS-erver dead-criteria is configured and either RADIUS-server deadtime is not configured or is set to 0, the RADIUS-server status is not properly relayed to AAA.

  Workaround: Configure both dead-criteria and deadtime.

  ```
  radius-server dead-criteria
  radius-server deadtime
  ```

  CSCtl06706

- When two distinct Layer 3 CE-facing interfaces exist, each connected to a CE to split WCCP between the two CEs, and you move a particular WCCP service (like 60 (ftp-native)) from one Layer 3 interface to the other, the target interface fails to completely transfer the service to the new CE from the old CE.

  Workaround: Shutdown the CE-facing interface. Once all the mask-value entries point to the target CE, unshut the CE-facing interface. CSCtl09941

- When spanning tree is changed from PVST to Rapid PVST and you enter the **show spanning-tree vlan** command, the ports configured as promiscuous trunks are not listed as part of the spanning tree.

  Workaround: Enter **shut**, then **no shut** on the ports. CSCtn88228

- If two clients are authenticated by MAB on a multi-host port, when the first client moves to a different port using MAC Move, the second host is not authenticated; it remains in the running state.

  Workaround: Clear the MAC address. CSCtn24046

- If a large number of VLAN mappings are configured, a member port might fail to join a port channel and no warming is issued.

  Workaround: Reduce the number of VLAN mappings. CSCtn56208

- WCCP service is not reacquired when a service group with a multicast group-address is unconfigured, and then reconfigured.

  Workaround: Configure ip multicast-routing globally and establish ip pim sparse-dense-mode on the CE-facing interface. CSCtl97692

- If an interface whose IP address is being used as the Router ID is deleted or shuts down and you configure a service group with a multicast group-address, packet redirection to CE stops and packets are forwarded directly to the destination.

  Workaround: Unconfigure and reconfigure the service group. CSCtn88087

- When a sampling monitor is configured on a routed port or on a VLAN (an SVI with just one port as a member) and **bidir multicast** is enabled, a packet sample may be exported even though the original multicast packet was not forwarded by the switch.

  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches.

Workaround: None. CSCtk97612

- If you reboot a switch, the configured value of interface MTU size on the members of port-channel interface does not function for IPv6 traffic.

  Workaround: After the switch reloads, enter **shut**, then **no shut** on the port-channel interface.

  CSCto27085

- Global WCCP service configuration fails to enable (WCCP global config is accepted but nvgen fails) on a newly deployed switch if the switch is not enabled for SVI or a Layer 3 interface.

  Workaround: Enable a Layer 3 interface in the running config. CSCsc88636.

- If you enter the **clear ip mroute ?** command, only the **vrf** option is displayed. The **Hostname** and ' ***** ' options are not displayed, although they are accepted by the system, and the **clear ip mroute** command functions as expected.

  Workaround: None. CSCto59368

- Dynamic ACLs do not function correctly if they include advanced operators, including dscp/ipp/tos, log/log-input, fragments and/or tcp flag operators.

  Workaround: Remove these operators from any dynamic ACLs. CSCts05302

- After a switch reestablishes a lost connection with AAA servers configured for broadcast accounting, the switch crashes.

  Workaround: Do not use the **broadcast** keyword in the aaa accounting configuration. CSCts56125

- A switch configured with 802.1X might shows considerable CPU usage by the 802.1X switch process and displays the following message:

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  SYS-2-MALLOCFAIL messages, and - on redundant systems - begins logging EM-4-SENDFAILED
  messages,
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  The occurs under the following conditions:

  - Multi-auth (or multi-host) and MAB dot1x are configured on a port.
  - A voice VLAN is not configured on the port.
  - The device authenticates through 802.1X.
  - The connected device sends no traffic, falls over to MAB, and then successfully authenticates through 802.1X.
  - A dynamic VLAN is assigned to the port following 802.1X authorization.

  Workarounds:

  - Enter **shut** then **no shut** on the port to halt the high CPU and log messages.
  - Enter the **switchport voice vlan** command on the port. CSCtw73754

- If PoE linecards are present and you enter either the **show power inline module** *x* or **show power inline module** *x* **detail** command, very rarely the supervisor engine might crash.

  Workaround: None. CSCtx25697

- After a few hours of operation, during which DHCP is enabled and sessions receive DHCP information from a RADIUS server, a Cisco ASR router running as an LNS box crashes with DHCP related errors.

  Workaround: None. CSCtj48387

- Configuring an interface as uni-directional with the **unidirectional** *send-only* | *receive-only* command still allows the interface to send (configured as “Send-only Unidirection Ethernet mode”) or receive (configured as "Receive-only Unidirection Ethernet mode") packets in a bi-directional mode.

  Workaround: None. CSCtx95359

- If a switch is configured with the **aaa accounting send stop-record authentication failure** command, and MAB fails on the port and subsequent attempts are made to authorize the device after the restart timer expires, a high level of memory usage due to the "MAB Framework" process is observed.

  Workaround: Unconfigure the following from the switch: **aaa accounting send stop-record authentication failure**. CSCtj69212

- When a trunk port is configured with a native VLAN other than VLAN 1, REP packets are not sent on that VLAN.

  Workaround: Retain the default setting (VLAN 1) for the native VLAN on trunks ports. CSCud05521

- If REP is configured on a dot1q trunk and the native VLAN is administratively set to a non-default value, REP packets are not sent on the native VLAN.

  Workaround: Retain the trunk native V LAN as 1. CSCud05521

- If a dACL name is too long (about 24 characters, depending on the interface where it is applied), the ACL is incorrectly shared over multiple ports.

  Workaround: Shorten the dACL name. CSCug78653

- redirect-url and redirect-acl are not cleared after a successful CoA, causing the final step of Central Web Authentication to fail.

  Workaround: Return a dACL in the authorization profile with successful guest authentication.

  CSCue62019

- If URL redirect is installed as part of authorization and either of the following occurs, memory will leak:
  - A fast stream of traffic matches the URL redirect ACL as IPDT clears an address.
  - A traffic stream matches the URL redirect ACL and no URL redirect policy is installed for that IP address.

  If memory leak occurs repeatedly, IPDT and other control packet processing ultimately ceases.

  Workaround: If this behavior completely fills the CPU buffer, the switch must be reloaded. However, the frequency of encountering a stuck queue can be reduced to nearly zero by modifying the URL redirect ACL to permit only 80/443 traffic. CSCug56646

- If a device is authenticating while the RADIUS server goes down, the port connected to the device may enter the err-disabled state.

  Workaround: Configure RADIUS test and dead criteria.

  Example:

  ```
  radius-server dead-criteria time 10 tries 2
  radius-server host <ip> test username test key <key>
  radius-server deadtime 10
  ```

  CSCtn92693

- If 10Gbps BaseT ports (on WS-X4908-10G-RJ45) are connected to a peer device using a Broadcom BCM84833 chipset, the connection either never boots or takes a very long time (up to an hour).

  This issue applies to Cisco IOS Release 15.0(2)SG through 15.0(2)SG7, and 15.1(2)SG through 15.1(2)SG3.

  Workaround: Downgrade to Cisco IOS Release 12.2(54)SG. CSCug68370

- In the output of the **show interface** command, output counters for an EtherChannel member remain zero provided the ports are flapped from a peer and the switch is either Catalyst 4900M, Catalyst 4948E, or 4948E-F, or the supervisor engine is either 6E or 6L-E.

  Workaround: Enter the **show platform software interface Gix/xx statistic** command.

  CSCuf60629

- If you configure Open Authentication and perform SSO, the spanning tree state and MAC address are not synchronized to the new standby supervisor engine. The issue interrupts traffic only after the second switchover, because after the initial switchover the new standby supervisor engine possesses the wrong state, and the second switchover will start the port in the blocking state.

  Workaround: Enter **shut**, and then **no shut** on the port to synchronize the STP state. CSCtf52437

Resolved Caveats in Cisco IOS Release 15.0(2)SG3

This section lists the resolved caveats in Release 15.2(2)SG3:

- When only an RX fiber is broken on a 10-Gigabit Ethernet link in a REP ring, REP segment convergence might require more than 500 ms.

  Only WS-C4900M uplink ports (Te1/1-8), WS-X45-SUP6L-E uplink ports, and WS-X4904-10GE are affected.

  Workaround: Use a non-affected module for REP ports such as WS-X4908-10GE. CSCtr76579

- A vulnerability in the Multicast Source Discovery Protocol (MSDP) implementation of Cisco IOS Software and Cisco IOS XE Software could allow a remote, unauthenticated attacker to cause a reload of an affected device. Repeated attempts to exploit this vulnerability could result in a sustained denial of service (DoS) condition.

  Cisco has released free software updates that address this vulnerability. Workarounds that mitigate this vulnerability are available. This advisory is available at the following link:

  http://tools.cisco.com/security/center/content/CiscoSecurityAdvisory/cisco-sa-20120328-msdp

Note The March 28, 2012, Cisco IOS Software Security Advisory bundled publication includes nine Cisco Security Advisories. Each advisory lists the Cisco IOS Software releases that correct the vulnerability or vulnerabilities detailed in the advisory as well as the Cisco IOS Software releases that correct all vulnerabilities in the March 2012 bundled publication.

Individual publication links are in "Cisco Event Response: Semiannual Cisco IOS Software Security Advisory Bundled Publication" at the following link:

http://www.cisco.com/web/about/security/intelligence/Cisco_ERP_mar12.html

CSCtr28857

- A vulnerability exists in the Cisco IOS Software that may allow a remote application or device to exceed its authorization level when authentication, authorization, and accounting (AAA) authorization is used. This vulnerability requires that the HTTP or HTTPS server is enabled on the Cisco IOS device.

  Products that are not running Cisco IOS Software are not vulnerable.

  Cisco has released free software updates that address these vulnerabilities.

  The HTTP server may be disabled as a workaround for the vulnerability described in this advisory.

  This advisory is available at the following link:

  http://tools.cisco.com/security/center/content/CiscoSecurityAdvisory/cisco-sa-20120328-pai

  CSCtr91106

Open Caveats in Cisco IOS Release 15.0(2)SG2

This section lists the open caveats in Cisco IOS Release 15.0(2)SG2:

- On rare occasions, if you use an X2 SR transceiver on a WS-X4706-10GE running Cisco IOS Release 12.2(40)SG, you will observe CRC errors after a reload or power cycle when you insert the card or the X2.

  Workaround: Reinsert the X2. CSCsk43618

- If a class-map is configured with **exceed-action drop**, re-configuring the same class-map with **exceed-action transmit** causes class-map configurations to conflict for the same class-map.

  Workaround: If you plan to change a class-map action, such as **exceed-action**, you meed to remove the class-map with the **no class c1** command under policy-map submode. Then, apply the new class-map with the updated changes. CSCsk70826)

- If *burst* is not explicitly configured for a single rate policer, the **show policy-map command** displays an incorrect burst value.

  Workaround: Enter the **show policy-map interface** command. CSCsi71036

- When you enter the **show policy-map vlan** *vlan* command, unconditional marking actions that are configured on the VLAN are not shown.

  Workaround: None. However, if you enter the **show policy-map** *name*, the unconditional marking actions are displayed. CSCsi94144

- IGMP snooping entries are active even after disabling IGMP snooping globally and per VLAN.

  Workarounds: Disable IGMP snooping on all the relevant VLANs before disabling it globally.

- IPv6 entries are active in the CAM; the CPU receives IPv6 packets.

  Workaround: Unconfigure any generic QOS policies from the system. The QoS policies with the **match any** attribute cause IPv6 entries to become active. If the switch is a pure Layer 2 device, remove the generic protocol family attributes and narrow it to the protocol family.

  CSCsq84796

- In Cisco IOS Release 12.2(54)SG, if an etherchannel is a member of a flexlink pair, then static MAC addresses configured on the EtherChannel are not moved to the alternate port when the EtherChannel fails (flexlink failure)

  Workaround: None. CSCsq99468

- When a CFM Inward Facing MEP(IFM) is configured on a VLAN that is not allocated on a switch port that is DOWN, the **show ethernet cfm maintenance-points local** command displays the IFM CC Status as **Inactive**. Then, you allocate the VLAN, the CC-status remains **Inactive**.

  You only see this symptom if you did not allocate a VLAN before you configure the IFM, then at a later time allocate the same VLAN.

  Workaround: Unconfigure, then reconfigure the IFM on the port.

- An IP unnumbered configuration is lost after a reload.

  Workarounds: Do one of the following:

  – After a reload, copy the startup-config to the running-config.

  – Use a loopback interface as the target of the **ip unnumbered** command

  – Change the CLI configuration such that during bootup, the router port is created first.

  CSCsq63051

- In SSO mode on the Catalyst 4900M switch, when a port-channel is created, deleted, and re-created on an active supervisor engine with the same channel-number, the standby port-channel state goes out of sync. After a switch over, the following message displays:

  ```
  %PM-4-PORT_INCONSISTENT: STANDBY:Port is inconsistent:
  ```

  Workaround: When the port channel starts to flap, enter **shut** and **no shut** on the port channel. After the first switchover and after deleting the portchannel, create a new channel. CSCsr00333

- Duplicate serial number error messages are reported on switching One X Convertor with SFP+, SFP+, X2 to another port, the inserted port enters a faulty status.

  This problem impacts X2, OneX converters, and SFP+ on the Supervisor Engine 6-E, and linecards.

  Workaround: Remove and reinsert the One X Convertor with SFP+, SFP+ alone, or X2 after some perceivable delay. CSCsu43461

- VTP databases do not propagate through promiscuous trunk ports. If only promiscuous trunks are configured, users will not see the VLAN updates on the other switches in the VTP domain.

  Workaround: For VTP database propagation, configure ISL/dot1q trunk port. CSCsu43445

- After posture validation succeeds, the following benign traceback messages may appear after you unconfigure the global RADIUS and IP device tracking commands:

  ```
  %SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
  eou_auth 4.1.0.101   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
  106617F8
  %SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
  eou_auth 4.1.0.102   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
  106617F8
  ```

  This applies to classic or E-series Catalyst 4500 supervisor engines running Cisco IOS Release 12.2(50)SG

  Workaround: None. CSCsw14005

- On a Catalyst 4900M switch, the host's MAC address is not synchronized to the standby supervisor engine after you unconfigure 802.1X on the port and reconnect the host to a IP phone (with CDP port status TLV support) that is connected to the switch.

  If the switch were to run a supervisor switchover while in this state, the host's MAC address would not be present in the new active supervisor engine's MAC address table, causing possible connectivity interruption on the host.

Workaround: Enter the **shutdown** command, followed by the **no shutdown** command on the interface. This triggers relearning and synchronizing of the host's MAC to the standby supervisor engine. CSCsw91661

- When multiple streams of CRC errors are encountered on WS-C4900M configured with OAM Configuration of monitoring the frame errored seconds, OAM does not always report the value of errored frame seconds correctly.

  To observe this issue, the following CLIs are configured with window size as the period for monitoring the errors and a low threshold equal to the number of CRC errored seconds seen/expected.

  ```
  ethernet oam link-monitor frame-seconds window
  ethernet oam link-monitor frame-seconds threshold low
  ```

  Workaround: Configure a lower value of low threshold such that the frame errors are seen divided into the expected number of frame errored seconds. CSCsy37181

- If you simultaneously apply a service-policy to a port in the output direction and a service-policy to a vlan-range under that port in the output direction, the class-map hit counters in the output of the **show policy-map interface** command are wrong.

  Workaround: None.

  The queue transmit counters as well as the policing statistics (if any) are correct. CSCsz20149

- On wireless control system (WCS), some device information is incorrectly displayed for PCs sitting behind an lldp-med capable phone. Specifically, WCS displays the phone's serial number, model number, and software version in the PC's device information. All other information about the PC is correctly displayed on WCS.

  This only happens when the switch is running network mobility service protocol (nmsp). It does not happen if the phone is CDP enabled.

  Workaround: Use VLAN ID or name to differentiate the IP phone and the PC sitting behind the phone on the WCS. Specifically, the IP phone is detected on the voice VLAN, and the displayed information of serial number, model number, and software version is correct. However, a PC sitting behind the phone is detected on a data VLAN, and the displayed device information is wrong and should be ignored. CSCsz34522

- When you configure **switchport block multicast** on a switch running Cisco IOS Release 12.2(53)SG1 and later or 12.2(50)SG6 and later, Layer 2 multicast is not blocked.

  Prior to Cisco IOS Release 12.2(53)SG1, 12.2(50)SG6, the **switchport block multicast** command would block IP Multicast, Layer 2 multicast, and broadcast traffic (CSCta61825).

  Workaround: None. CSCtb30327

- If *time* is not specified in the **link debounce** command, the default value depends on the supervisor engine. The default is 10 mS for 4948E, C4900M, Supervisor Engine 6-E, and Supervisor Engine 6L-E. The default is 100 mS for all other supervisor engines.

  Workaround: None. CSCte51948

- Fast UDLD in aggressive mode may incorrectly errdisable a link in the following scenarios:
  - Fast UDLD peer switch performs SSO.
  - Fast UDLD peer switch is reloaded.
  - One or more interfaces on a fast UDLD peer switch are shut down (or the port mode changes from switchport to routed, and vice versa).

Note To reduce the likelihood of this event, connect at least two physical interfaces between fast UDLD peer switches. You must configure the interfaces with the same neighbor fast hello interval.

Workarounds:

- Reset the error disabled links with the **udld reset** command.
- Configure error disable recovery with the commands **errdisable recovery cause udld** and **errdisable recovery interval** *value (*between 30 and 86400 sec).
- Manually clear errdisable on the local interface with a **shutdown** then a **no shutdown**.

CSCtc99007

- On a peer interface on a Catalyst 4948E Ethernet Switch, if errdisabled mode flap detection is set to a very small number (such as 2 flaps in 10 sec), a 10GE link flap may cause the peer interface to enter the errdisabled state.

  Workarounds: The Cisco switch default link-flap detection value is 5 flaps in 10 seconds. Use the default value or larger numbers. CSCtg07677

- Before large PACLs are fully loaded in hardware, you might observe a false completion messages like the following:

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fully loaded in hardware *Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-ALLACLINHW: All
configured ACLs now fully loaded in hardware - hardware switching / QoS restored.
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  This issue does not impact functionality.

  Workaround: None.

  You must wait for the ACLs to be programmed before performing other TCAM related changes. CSCtd57063

- When you have enabled EPM logging and the client is authenticated via MAB or Webauth, the value of AUTHTYPE is DOT1X in EPM syslog messages irrespective of the authentication method.

  Similarly, the show epm sessions command always displays the authentication method as DOT1X.

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- With CFM enabled globally as well as on an ingress interface, CFM packets received on the interface are not policed with hardware control plane policing.

  Workaround: None. CSCso93282

- With a NEAT configuration on an ASW (Catalyst 4500 series switch) connected to an SSW (Catalyst 3750 series switch) serving as a root bridge and with redundant links between ASW and SSW, the following occur:
  - STP does not stabilize.
  - The SVI (network) is unreachable. If an SVI exists on the ASW, because of the STP flap in the setup as well as the CISP operations, the SVI MAC configuration on the ASW is incorrect.

  Workaround: Configure the ASW or any other switch upstream as the root-bridge for all the VLANs. CSCtg71030

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  Workarounds: Do one of the following:

  - Change the interface to a Layer 2 switch port
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  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches.

Workaround: None. CSCtk97612

- If you reboot a switch, the configured value of interface MTU size on the members of port-channel interface does not function for IPv6 traffic.

  Workaround: After the switch reloads, enter **shut**, then **no shut** on the port-channel interface.

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  Workaround: Enable a Layer 3 interface in the running config. CSCsc88636.

- If you enter the **clear ip mroute ?** command, only the **vrf** option is displayed. The **Hostname** and ' * ' options are not displayed, although they are accepted by the system, and the **clear ip mroute** command functions as expected.

  Workaround: None. CSCto59368

- Dynamic ACLs do not function correctly if they include advanced operators, including dscp/ipp/tos, log/log-input, fragments and/or tcp flag operators.

  Workaround: Remove these operators from any dynamic ACLs. CSCts05302

- When only an RX fiber is broken on a 10-Gigabit Ethernet link in a REP ring, REP segment convergence might require more than 500 ms.

  Only WS-C4900M uplink ports (Te1/1-8), WS-X45-SUP6L-E uplink ports, and WS-X4904-10GE are affected.

  Workaround: Use a non-affected module for REP ports such as WS-X4908-10GE. CSCtr76579

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  SYS-2-MALLOCFAIL messages, and - on redundant systems - begins logging EM-4-SENDFAILED
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  The occurs under the following conditions:

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  - A voice VLAN is not configured on the port.
  - The device authenticates through 802.1X.
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  - A dynamic VLAN is assigned to the port following 802.1X authorization.

  Workarounds:

  - Enter **shut** then **no shut** on the port to halt the high CPU and log messages.
  - Enter the **switchport voice vlan** command on the port. CSCtw73754

- If PoE linecards are present and you enter either the **show power inline module** *x* or **show power inline module** *x* **detail** command, very rarely the supervisor engine might crash.

  Workaround: None. CSCtx25697

- After a few hours of operation, during which DHCP is enabled and sessions receive DHCP information from a RADIUS server, a Cisco ASR router running as an LNS box crashes with DHCP related errors.

  Workaround: None. CSCtj48387

- Configuring an interface as uni-directional with the **unidirectional** *send-only* | *receive-only* command still allows the interface to send (configured as “Send-only Unidirection Ethernet mode”) or receive (configured as "Receive-only Unidirection Ethernet mode") packets in a bi-directional mode.

  Workaround: None. CSCtx95359

- If a switch is configured with the **aaa accounting send stop-record authentication failure** command, and MAB fails on the port and subsequent attempts are made to authorize the device after the restart timer expires, a high level of memory usage due to the "MAB Framework" process is observed.

  Workaround: Unconfigure the following from the switch: **aaa accounting send stop-record authentication failure**. CSCtj69212

- When a trunk port is configured with a native VLAN other than VLAN 1, REP packets are not sent on that VLAN.

  Workaround: Retain the default setting (VLAN 1) for the native VLAN on trunks ports. CSCud05521

- If REP is configured on a dot1q trunk and the native VLAN is administratively set to a non-default value, REP packets are not sent on the native VLAN.

  Workaround: Retain the trunk native V LAN as 1. CSCud05521

- If a dACL name is too long (about 24 characters, depending on the interface where it is applied), the ACL is incorrectly shared over multiple ports.

  Workaround: Shorten the dACL name. CSCug78653

- redirect-url and redirect-acl are not cleared after a successful CoA, causing the final step of Central Web Authentication to fail.

  Workaround: Return a dACL in the authorization profile with successful guest authentication.

  CSCue62019

- If URL redirect is installed as part of authorization and either of the following occurs, memory will leak:

  – A fast stream of traffic matches the URL redirect ACL as IPDT clears an address.

  – A traffic stream matches the URL redirect ACL and no URL redirect policy is installed for that IP address.

  If memory leak occurs repeatedly, IPDT and other control packet processing ultimately ceases.

  Workaround: If this behavior completely fills the CPU buffer, the switch must be reloaded. However, the frequency of encountering a stuck queue can be reduced to nearly zero by modifying the URL redirect ACL to permit only 80/443 traffic. CSCug56646

- If a device is authenticating while the RADIUS server goes down, the port connected to the device may enter the err-disabled state.

  Workaround: Configure RADIUS test and dead criteria.

  Example:

```
radius-server dead-criteria time 10 tries 2
radius-server host <ip> test username test key <key>
```

```
radius-server deadtime 10
```

CSCtn92693

- If 10Gbps BaseT ports (on WS-X4908-10G-RJ45) are connected to a peer device using a Broadcom BCM84833 chipset, the connection either never boots or takes a very long time (up to an hour).

  This issue applies to Cisco IOS Release 15.0(2)SG through 15.0(2)SG7, and 15.1(2)SG through 15.1(2)SG3.

  Workaround: Downgrade to Cisco IOS Release 12.2(54)SG. CSCug68370

- In the output of the **show interface** command, output counters for an EtherChannel member remain zero provided the ports are flapped from a peer and the switch is either Catalyst 4900M, Catalyst 4948E, or 4948E-F, or the supervisor engine is either 6E or 6L-E.

  Workaround: Enter the **show platform software interface Gix/xx statistic** command.

  CSCuf60629

- If you configure Open Authentication and perform SSO, the spanning tree state and MAC address are not synchronized to the new standby supervisor engine. The issue interrupts traffic only after the second switchover, because after the initial switchover the new standby supervisor engine possesses the wrong state, and the second switchover will start the port in the blocking state.

  Workaround: Enter **shut**, and then **no shut** on the port to synchronize the STP state. CSCtf52437

Resolved Caveats in Cisco IOS Release 15.0(2)SG2

This section lists the resolved caveats in Release 15.2(2)SG2:

- If Flex link load balancing is configured on a PVLAN flex link pair and some VLANs prefer the backup interface in the pair, entering **shut** and then **no shut** on the backup flex link interface causes high cpu from SA miss events. This happens because dynamic mac address learning is broken.

  The primary flex link interface comes up correctly.

  Workaround: Configure static MAC address for the MAC address that must be learned dynamically on the backup flex link interface. CSCtr40070

- When configuring, removing, and reapplying IP SLA configuration (reapply without the history filter) and querying the rttmonhistory tree, a Catalyst4 948-10GE switch will fail.

  Workaround: None. CSCtr52740

- Configuring and copying a TCL policy may cause a Catalyst 4500 series switch to hang.

  Workaround: None. CSCto72927

- Layer 2 multicast is not switched egress with a port-channel interface after a member link or port-channel flaps.

  Workaround:

  1. Delete, then add the affected VLAN with **no vlan** *vlan_ID*, then **lan** *vlan_ID*.

  2. Flap the impacted port-channel with **shutdown**, then **no shutdown**. CSCtr17251

- When a switch is configured for MAC Authentication Bypass (MAB) EAP and the AAA server requests EAP-TLS (as the EAP method) first, MAB fails.

  Workarounds:

  – Configure the switch port for *mab* rather than *mab eap*.

  - Configure the AAA server to propose EAP-MD5 first rather than EAP-TLS for MAB EAP requests. CSCti78674

- When you enter the **rep preempt segment** command, the MAC might not flush.

  Workaround: Re-enter the **rep preempt segment** command. CSCtr89862

- A vulnerability in the Multicast Source Discovery Protocol (MSDP) implementation of Cisco IOS Software and Cisco IOS XE Software could allow a remote, unauthenticated attacker to cause a reload of an affected device. Repeated attempts to exploit this vulnerability could result in a sustained denial of service (DoS) condition.

  Cisco has released free software updates that address this vulnerability. Workarounds that mitigate this vulnerability are available. This advisory is available at the following link:

  http://tools.cisco.com/security/center/content/CiscoSecurityAdvisory/cisco-sa-20120328-msdp

Note The March 28, 2012, Cisco IOS Software Security Advisory bundled publication includes nine Cisco Security Advisories. Each advisory lists the Cisco IOS Software releases that correct the vulnerability or vulnerabilities detailed in the advisory as well as the Cisco IOS Software releases that correct all vulnerabilities in the March 2012 bundled publication.

  Individual publication links are in "Cisco Event Response: Semiannual Cisco IOS Software Security Advisory Bundled Publication" at the following link:

  http://www.cisco.com/web/about/security/intelligence/Cisco_ERP_mar12.html

  CSCtr28857

- A vulnerability exists in the Cisco IOS Software that may allow a remote application or device to exceed its authorization level when authentication, authorization, and accounting (AAA) authorization is used. This vulnerability requires that the HTTP or HTTPS server is enabled on the Cisco IOS device.

  Products that are not running Cisco IOS Software are not vulnerable.

  Cisco has released free software updates that address these vulnerabilities.

  The HTTP server may be disabled as a workaround for the vulnerability described in this advisory.

  This advisory is available at the following link:

  http://tools.cisco.com/security/center/content/CiscoSecurityAdvisory/cisco-sa-20120328-pai

  CSCtr91106

Open Caveats in Cisco IOS Release 15.0(2)SG1

This section lists the open caveats in Cisco IOS Release 15.0(2)SG1:

- On rare occasions, if you use an X2 SR transceiver on a WS-X4706-10GE running Cisco IOS Release 12.2(40)SG, you will observe CRC errors after a reload or power cycle when you insert the card or the X2.

  Workaround: Reinsert the X2. CSCsk43618

- If a class-map is configured with **exceed-action drop**, re-configuring the same class-map with **exceed-action transmit** causes class-map configurations to conflict for the same class-map.

Workaround: If you plan to change a class-map action, such as **exceed-action**, you meed to remove the class-map with the **no class c1** command under policy-map submode. Then, apply the new class-map with the updated changes. CSCsk70826)

- If *burst* is not explicitly configured for a single rate policer, the **show policy-map command** displays an incorrect burst value.

  Workaround: Enter the **show policy-map interface** command. CSCsi71036

- When you enter the **show policy-map vlan** *vlan* command, unconditional marking actions that are configured on the VLAN are not shown.

  Workaround: None. However, if you enter the **show policy-map** *name*, the unconditional marking actions are displayed. CSCsi94144

- IGMP snooping entries are active even after disabling IGMP snooping globally and per VLAN.

  Workarounds: Disable IGMP snooping on all the relevant VLANs before disabling it globally.

- IPv6 entries are active in the CAM; the CPU receives IPv6 packets.

  Workaround: Unconfigure any generic QOS policies from the system. The QoS policies with the **match any** attribute cause IPv6 entries to become active. If the switch is a pure Layer 2 device, remove the generic protocol family attributes and narrow it to the protocol family. CSCsq84796

- In Cisco IOS Release 12.2(54)SG, if an etherchannel is a member of a flexlink pair, then static MAC addresses configured on the EtherChannel are not moved to the alternate port when the EtherChannel fails (flexlink failure)

  Workaround: None. CSCsq99468

- When a CFM Inward Facing MEP(IFM) is configured on a VLAN that is not allocated on a switch port that is DOWN, the **show ethernet cfm maintenance-points local** command displays the IFM CC Status as **Inactive**. Then, you allocate the VLAN, the CC-status remains **Inactive**.

  You only see this symptom if you did not allocate a VLAN before you configure the IFM, then at a later time allocate the same VLAN.

  Workaround: Unconfigure, then reconfigure the IFM on the port.

- An IP unnumbered configuration is lost after a reload.

  Workarounds: Do one of the following:

  – After a reload, copy the startup-config to the running-config.

  – Use a loopback interface as the target of the **ip unnumbered** command

  – Change the CLI configuration such that during bootup, the router port is created first.

  CSCsq63051

- In SSO mode on the Catalyst 4900M switch, when a port-channel is created, deleted, and re-created on an active supervisor engine with the same channel-number, the standby port-channel state goes out of sync. After a switch over, the following message displays:

  ```
  %PM-4-PORT_INCONSISTENT: STANDBY:Port is inconsistent:
  ```

  Workaround: When the port channel starts to flap, enter **shut** and **no shut** on the port channel. After the first switchover and after deleting the portchannel, create a new channel. CSCsr00333

- Duplicate serial number error messages are reported on switching One X Convertor with SFP+, SFP+, X2 to another port, the inserted port enters a faulty status.

  This problem impacts X2, OneX converters, and SFP+ on the Supervisor Engine 6-E, and linecards.

Workaround: Remove and reinsert the One X Convertor with SFP+, SFP+ alone, or X2 after some perceivable delay. CSCsu43461

- VTP databases do not propagate through promiscuous trunk ports. If only promiscuous trunks are configured, users will not see the VLAN updates on the other switches in the VTP domain.

  Workaround: For VTP database propagation, configure ISL/dot1q trunk port. CSCsu43445

- After posture validation succeeds, the following benign traceback messages may appear after you unconfigure the global RADIUS and IP device tracking commands:

```
%SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
eou_auth 4.1.0.101   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
106617F8
%SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
eou_auth 4.1.0.102   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
106617F8
```

  This applies to classic or E-series Catalyst 4500 supervisor engines running Cisco IOS Release 12.2(50)SG

  Workaround: None. CSCsw14005

- On a Catalyst 4900M switch, the host's MAC address is not synchronized to the standby supervisor engine after you unconfigure 802.1X on the port and reconnect the host to a IP phone (with CDP port status TLV support) that is connected to the switch.

  If the switch were to run a supervisor switchover while in this state, the host's MAC address would not be present in the new active supervisor engine's MAC address table, causing possible connectivity interruption on the host.

  Workaround: Enter the **shutdown** command, followed by the **no shutdown** command on the interface. This triggers relearning and synchronizing of the host's MAC to the standby supervisor engine. CSCsw91661

- When multiple streams of CRC errors are encountered on WS-C4900M configured with OAM Configuration of monitoring the frame errored seconds, OAM does not always report the value of errored frame seconds correctly.

  To observe this issue, the following CLIs are configured with window size as the period for monitoring the errors and a low threshold equal to the number of CRC errored seconds seen/expected.

```
ethernet oam link-monitor frame-seconds window
ethernet oam link-monitor frame-seconds threshold low
```

  Workaround: Configure a lower value of low threshold such that the frame errors are seen divided into the expected number of frame errored seconds. CSCsy37181

- If you simultaneously apply a service-policy to a port in the output direction and a service-policy to a vlan-range under that port in the output direction, the class-map hit counters in the output of the **show policy-map interface** command are wrong.

  Workaround: None.

  The queue transmit counters as well as the policing statistics (if any) are correct. CSCsz20149

- On wireless control system (WCS), some device information is incorrectly displayed for PCs sitting behind an lldp-med capable phone. Specifically, WCS displays the phone's serial number, model number, and software version in the PC's device information. All other information about the PC is correctly displayed on WCS.

  This only happens when the switch is running network mobility service protocol (nmsp). It does not happen if the phone is CDP enabled.

Workaround: Use VLAN ID or name to differentiate the IP phone and the PC sitting behind the phone on the WCS. Specifically, the IP phone is detected on the voice VLAN, and the displayed information of serial number, model number, and software version is correct. However, a PC sitting behind the phone is detected on a data VLAN, and the displayed device information is wrong and should be ignored. CSCsz34522

- When you configure **switchport block multicast** on a switch running Cisco IOS Release 12.2(53)SG1 and later or 12.2(50)SG6 and later, Layer 2 multicast is not blocked.

  Prior to Cisco IOS Release 12.2(53)SG1, 12.2(50)SG6, the **switchport block multicast** command would block IP Multicast, Layer 2 multicast, and broadcast traffic (CSCta61825).

  Workaround: None. CSCtb30327

- If *time* is not specified in the **link debounce** command, the default value depends on the supervisor engine. The default is 10 mS for 4948E, C4900M, Supervisor Engine 6-E, and Supervisor Engine 6L-E. The default is 100 mS for all other supervisor engines.

  Workaround: None. CSCte51948

- Fast UDLD in aggressive mode may incorrectly errdisable a link in the following scenarios:
  - Fast UDLD peer switch performs SSO.
  - Fast UDLD peer switch is reloaded.
  - One or more interfaces on a fast UDLD peer switch are shut down (or the port mode changes from switchport to routed, and vice versa).

Note To reduce the likelihood of this event, connect at least two physical interfaces between fast UDLD peer switches. You must configure the interfaces with the same neighbor fast hello interval.

Workarounds:

- Reset the error disabled links with the **udld reset** command.
- Configure error disable recovery with the commands **errdisable recovery cause udld** and **errdisable recovery interval** *value (*between 30 and 86400 sec).
- Manually clear errdisable on the local interface with a **shutdown** then a **no shutdown**.

CSCtc99007

- On a peer interface on a Catalyst 4948E Ethernet Switch, if errdisabled mode flap detection is set to a very small number (such as 2 flaps in 10 sec), a 10GE link flap may cause the peer interface to enter the errdisabled state.

  Workarounds: The Cisco switch default link-flap detection value is 5 flaps in 10 seconds. Use the default value or larger numbers. CSCtg07677

- Before large PACLs are fully loaded in hardware, you might observe a false completion messages like the following:

```
Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-HWPROGSUCCESS: Input Security: pacl - now
fully loaded in hardware *Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-ALLACLINHW: All
configured ACLs now fully loaded in hardware - hardware switching / QoS restored.
```

  This issue does not impact functionality.

  Workaround: None.

  You must wait for the ACLs to be programmed before performing other TCAM related changes. CSCtd57063

- When you have enabled EPM logging and the client is authenticated via MAB or Webauth, the value of AUTHTYPE is DOT1X in EPM syslog messages irrespective of the authentication method.

  Similarly, the show epm sessions command always displays the authentication method as DOT1X.

  Workaround: To view the authentication method used for a client, enter the **show authentication sessions** command. CSCsx42157

- With CFM enabled globally as well as on an ingress interface, CFM packets received on the interface are not policed with hardware control plane policing.

  Workaround: None. CSCso93282

- With a NEAT configuration on an ASW (Catalyst 4500 series switch) connected to an SSW (Catalyst 3750 series switch) serving as a root bridge and with redundant links between ASW and SSW, the following occur:

  – STP does not stabilize.

  – The SVI (network) is unreachable. If an SVI exists on the ASW, because of the STP flap in the setup as well as the CISP operations, the SVI MAC configuration on the ASW is incorrect.

  Workaround: Configure the ASW or any other switch upstream as the root-bridge for all the VLANs. CSCtg71030

- When a packet sampling monitor is applied on a Layer 3 port, which is also configured for Layer 3 RACL, you might observe multiple merged ACL path signatures stemming from merging the sampling and security ACL features. This behavior results in multiple (twice) copies of flattened ACE programmed in the TCAM, wasting ACL TCAM space.

  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches. It does not impact functionality.

  Workarounds: Do one of the following:

  – Change the interface to a Layer 2 switch port

  – Do not configure an ACL access-list on the same Layer 3 interface where sampling monitor is enabled. CSCtn79032

- When either the RADIUS-server test feature or RADIUS-erver dead-criteria is configured and either RADIUS-server deadtime is not configured or is set to 0, the RADIUS-server status is not properly relayed to AAA.

  Workaround: Configure both dead-criteria and deadtime.

  ```
  radius-server dead-criteria
  radius-server deadtime
  ```

  CSCtl06706

- When two distinct Layer 3 CE-facing interfaces exist, each connected to a CE to split WCCP between the two CEs, and you move a particular WCCP service (like 60 (ftp-native)) from one Layer 3 interface to the other, the target interface fails to completely transfer the service to the new CE from the old CE.

  Workaround: Shutdown the CE-facing interface. Once all the mask-value entries point to the target CE, unshut the CE-facing interface. CSCtl09941

- When spanning tree is changed from PVST to Rapid PVST and you enter the **show spanning-tree vlan** command, the ports configured as promiscuous trunks are not listed as part of the spanning tree.

  Workaround: Enter **shut**, then **no shut** on the ports. CSCtn88228

- If two clients are authenticated by MAB on a multi-host port, when the first client moves to a different port using MAC Move, the second host is not authenticated; it remains in the running state.

Workaround: Clear the MAC address. CSCtn24046

- If a large number of VLAN mappings are configured, a member port might fail to join a port channel and no warming is issued.

  Workaround: Reduce the number of VLAN mappings. CSCtn56208

- WCCP service is not reacquired when a service group with a multicast group-address is unconfigured, and then reconfigured.

  Workaround: Configure ip multicast-routing globally and establish ip pim sparse-dense-mode on the CE-facing interface. CSCtl97692

- If an interface whose IP address is being used as the Router ID is deleted or shuts down and you configure a service group with a multicast group-address, packet redirection to CE stops and packets are forwarded directly to the destination.

  Workaround: Unconfigure and reconfigure the service group. CSCtn88087

- When a sampling monitor is configured on a routed port or on a VLAN (an SVI with just one port as a member) and **bidir multicast** is enabled, a packet sample may be exported even though the original multicast packet was not forwarded by the switch.

  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches.

  Workaround: None. CSCtk97612

- If you reboot a switch, the configured value of interface MTU size on the members of port-channel interface does not function for IPv6 traffic.

  Workaround: After the switch reloads, enter **shut**, then **no shut** on the port-channel interface.

  CSCto27085

- Global WCCP service configuration fails to enable (WCCP global config is accepted but nvgen fails) on a newly deployed switch if the switch is not enabled for SVI or a Layer 3 interface.

  Workaround: Enable a Layer 3 interface in the running config. CSCsc88636.

- If you enter the **clear ip mroute ?** command, only the **vrf** option is displayed. The **Hostname** and ' ***** ' options are not displayed, although they are accepted by the system, and the **clear ip mroute** command functions as expected.

  Workaround: None. CSCto59368

- If Flex link load balancing is configured on a PVLAN flex link pair and some VLANs prefer the backup interface in the pair, entering **shut** and then **no shut** on the backup flex link interface causes high cpu from SA miss events. This happens because dynamic mac address learning is broken.

  The primary flex link interface comes up correctly.

  Workaround: Configure static MAC address for the MAC address that must be learned dynamically on the backup flex link interface. (CSCtr40070)

- Dynamic ACLs do not function correctly if they include advanced operators, including dscp/ipp/tos, log/log-input, fragments and/or tcp flag operators.

  Workaround: Remove these operators from any dynamic ACLs. (CSCts05302)

- When configuring, removing, and reapplying IP SLA configuration (reapply without the history filter) and querying the rttmonhistory tree, a Catalyst4 948-10GE switch will fail.

  Workaround: None. CSCtr52740

- Configuring and copying a TCL policy may cause a Catalyst 4500 series switch to hang.

  Workaround: None. CSCto72927

- Layer 2 multicast is not switched egress with a port-channel interface after a member link or port-channel flaps.

  Workaround:

  1. Delete, then add the affected VLAN with **no vlan** *vlan_ID*, then **lan** *vlan_ID*.

  2. Flap the impacted port-channel with **shutdown**, then **no shutdown**. CSCtr17251

- When a switch is configured for MAC Authentication Bypass (MAB) EAP and the AAA server requests EAP-TLS (as the EAP method) first, MAB fails.

  Workarounds:

  - Configure the switch port for *mab* rather than *mab eap*.
  - Configure the AAA server to propose EAP-MD5 first rather than EAP-TLS for MAB EAP requests. CSCti78674

- When you enter the **rep preempt segment** command, the MAC might not flush.

  Workaround: Re-enter the **rep preempt segment** command. CSCtr89862

- When only an RX fiber is broken on a 10-Gigabit Ethernet link in a REP ring, REP segment convergence might require more than 500 ms.

  Only WS-C4900M uplink ports (Te1/1-8), WS-X45-SUP6L-E uplink ports, and WS-X4904-10GE are affected.

  Workaround: Use a non-affected module for REP ports such as WS-X4908-10GE. CSCtr76579

- After a switch reestablishes a lost connection with AAA servers configured for broadcast accounting, the switch crashes.

  Workaround: Do not use the **broadcast** keyword in the aaa accounting configuration. CSCts56125

- A switch configured with 802.1X might shows considerable CPU usage by the 802.1X switch process and displays the following message:

  ```
  SYS-2-MALLOCFAIL messages, and - on redundant systems - begins logging EM-4-SENDFAILED
  messages,
  ```

  The occurs under the following conditions:

  - Multi-auth (or multi-host) and MAB dot1x are configured on a port.
  - A voice VLAN is not configured on the port.
  - The device authenticates through 802.1X.
  - The connected device sends no traffic, falls over to MAB, and then successfully authenticates through 802.1X.
  - A dynamic VLAN is assigned to the port following 802.1X authorization.

  Workarounds:

  - Enter **shut** then **no shut** on the port to halt the high CPU and log messages.
  - Enter the **switchport voice vlan** command on the port. CSCtw73754

- If PoE linecards are present and you enter either the **show power inline module** *x* or **show power inline module** *x* **detail** command, very rarely the supervisor engine might crash.

  Workaround: None. CSCtx25697

- After a few hours of operation, during which DHCP is enabled and sessions receive DHCP information from a RADIUS server, a Cisco ASR router running as an LNS box crashes with DHCP related errors.

Workaround: None. CSCtj48387

- Configuring an interface as uni-directional with the **unidirectional** *send-only* | *receive-only* command still allows the interface to send (configured as “Send-only Unidirection Ethernet mode”) or receive (configured as "Receive-only Unidirection Ethernet mode") packets in a bi-directional mode.

  Workaround: None. CSCtx95359

- If a switch is configured with the **aaa accounting send stop-record authentication failure** command, and MAB fails on the port and subsequent attempts are made to authorize the device after the restart timer expires, a high level of memory usage due to the "MAB Framework" process is observed.

  Workaround: Unconfigure the following from the switch: **aaa accounting send stop-record authentication failure**. CSCtj69212

- When a trunk port is configured with a native VLAN other than VLAN 1, REP packets are not sent on that VLAN.

  Workaround: Retain the default setting (VLAN 1) for the native VLAN on trunks ports. CSCud05521

- If REP is configured on a dot1q trunk and the native VLAN is administratively set to a non-default value, REP packets are not sent on the native VLAN.

  Workaround: Retain the trunk native V LAN as 1. CSCud05521

- If a dACL name is too long (about 24 characters, depending on the interface where it is applied), the ACL is incorrectly shared over multiple ports.

  Workaround: Shorten the dACL name. CSCug78653

- redirect-url and redirect-acl are not cleared after a successful CoA, causing the final step of Central Web Authentication to fail.

  Workaround: Return a dACL in the authorization profile with successful guest authentication.

  CSCue62019

- If URL redirect is installed as part of authorization and either of the following occurs, memory will leak:

  – A fast stream of traffic matches the URL redirect ACL as IPDT clears an address.

  – A traffic stream matches the URL redirect ACL and no URL redirect policy is installed for that IP address.

  If memory leak occurs repeatedly, IPDT and other control packet processing ultimately ceases.

  Workaround: If this behavior completely fills the CPU buffer, the switch must be reloaded. However, the frequency of encountering a stuck queue can be reduced to nearly zero by modifying the URL redirect ACL to permit only 80/443 traffic. CSCug56646

- If a device is authenticating while the RADIUS server goes down, the port connected to the device may enter the err-disabled state.

  Workaround: Configure RADIUS test and dead criteria.

  Example:

  ```
  radius-server dead-criteria time 10 tries 2
  radius-server host <ip> test username test key <key>
  radius-server deadtime 10
  ```

  CSCtn92693

- If 10Gbps BaseT ports (on WS-X4908-10G-RJ45) are connected to a peer device using a Broadcom BCM84833 chipset, the connection either never boots or takes a very long time (up to an hour).

  This issue applies to Cisco IOS Release 15.0(2)SG through 15.0(2)SG7, and 15.1(2)SG through 15.1(2)SG3.

  Workaround: Downgrade to Cisco IOS Release 12.2(54)SG. CSCug68370

- In the output of the **show interface** command, output counters for an EtherChannel member remain zero provided the ports are flapped from a peer and the switch is either Catalyst 4900M, Catalyst 4948E, or 4948E-F, or the supervisor engine is either 6E or 6L-E.

  Workaround: Enter the **show platform software interface Gix/xx statistic** command.

  CSCuf60629

- If you configure Open Authentication and perform SSO, the spanning tree state and MAC address are not synchronized to the new standby supervisor engine. The issue interrupts traffic only after the second switchover, because after the initial switchover the new standby supervisor engine possesses the wrong state, and the second switchover will start the port in the blocking state.

  Workaround: Enter **shut**, and then **no shut** on the port to synchronize the STP state. CSCtf52437

Resolved Caveats in Cisco IOS Release 15.0(2)SG1

This section lists the resolved caveats in Release 15.2(2)SG1:

- If you use MDA or multi-auth host mode with authentication open, the switch ignores unicast EAPOL responses.

  Workarounds:

  - Force the supplicant to use multicast EAPOL.
  - Do not use authentication open mode. CSCtq33048

- Class-map hit counters do not increment on the egress policy-map when it is attached to the primary VLAN on a PVLAN trunk ports. However, the traffic is properly classified and the actions configured in the policy are applied properly.

  Workaround: None. CSCsy72343

- When Fallback WebAuth and Multi-host is configured on a port and no PACL exists, "permit ip any any" is installed in the TCAM and all traffic from the host is allowed to pass.

  Workaround: Configure an ACL on the port. CSCte18760

- After a session falls back to Web Authentication, and no port ACL or fallback ACL is configured, Auth_Default_ACL is programmed infrequently.

  Workaround: Configure a port ACL on the interface. CSCtl89389

- A switch configured for **epm open directive** in multi-auth configuration fails when authentication sessions are cleared.

  Workaround: Do not configure open directive on the switch. CSCto48824

- When reconnecting to a switch using device tracking, a Windows Vista, 2008, or 2007 device registers a duplicate address message. A Windows Vista, 2008, or 2007 client probes for a tentative IP address while the switch probes for device status. This duplicate address register issue is usually triggered by disconnecting or reconnecting.

  Workaround: Disable gratuitous ARP on the Windows device. CSCtn27420

- If you create a new IPv6 ACL, delete a permit ACE, and then add back the permit ACE, the **sh run | b ipv6 access-list** command displays unexpected commands on the IPv6 access-list configuration.

```
sh run | b ipv6 access-list
ipv6 access-list ipv6acl
 permit icmp any FF01::/16
 permit icmp any FF02::/16
 sequence 40 permit icmp any FE80::/10
sequence 40 (appears in front of entry)
```

  In the output above, **sequence 40** is the unexpected command that appears in front of the entry.

  Workaround: Delete the access-list and reconfigure all entries, rather than deleting or reconfiguring the access-list. CSCtn83348

- Selective Q-in-Q CLIs are rejected on a port-channel after deleting all the one-to-one CLIs.

  Workaround: Enter the **interface range** command to configure all member ports to use a new port channel that is created automatically. CSCtn52362

- A portchannel does not come up after you configure for VLAN translation.

  Workaround: Enter **shut** then **no shut** on the member port. CSCtn52404

- ND/NS packets are dropped when an IPv6 ACL is attached to an Layer 3 interface.

  Workaround: Add the following permit ACEs to the ACL:

```
permit icmp any any nd-ns
 permit icmp any any nd-na
```

  CSCtg77035

- If you use IGMP reports with groups like 226.0.0.2, 225.0.0.2, or 225.128.0.2, HSRP hello packets drop and HSRP peers are down. This happens because HSRP hello packets are sent to MAC address 224.0.0.2, which overlaps with the IGMP group addresses just mentioed.

  Workaround: None. Use a different IGMP group address. (CSCtq15982)

- The list of VLANs defined by the **vlan-range** command used for configuring per-VLAN QoS is too long, causing the system to reject the command and display the following log:

```
Command rejected: Bad VLAN list - character #"X" (EOL) delimits a VLAN number ("Y")
end of range not larger than the start of range ("Z").
```

  Workaround: None (CSCtr49819)

- Switches using ESM logging filter TCL script will fail after some time.

  Workaround: Remove the logging filter. (CSCto76709)

- Memory leak is observed in the RADIUS and EAP framework processes. The output of the **show mem all totals** command displays the name of the leaked memory as AAA Attr String and AAA Attr List.

  Workaround: None (CSCto34321)

- When QoS commands are applied line by line on PVLAN isolated trunks, the policer is not applied and line rate traffic exits the port.

  Workaround: Cut and paste the configuration. Then apply rapidly to PVLAN isolated trunk port. (CSCtq04058)

- When you make QoS-related changes, a Catalyst 4500 switch may reload unexpectedly.

  Workaround: None. (CSCtn77500)

- When the active port set to the egress policy is single, you cannot modify the multicast control packets (like HSRP/OSPF) IP ToS field.

  Workaround: None. (CSCtg60011)

- A host IP is not inserted into a URL redirect ACL unless the host IP is already in the device tracking table (DHCP snooping or IPDT).

  Workaround: None. CSCtn63638

- DACLs, filter-ID, and proxy ACLs do not function correctly.

  Workaround: None. CSCto79232

- If Filter ID or fallback ACLs are currently applied to a port, and you modify them, they will not be programmed correctly in hardware.

  Workaround: Modify filter ID or fallback ACLs only when they are not in use. CSCto79274

- RA Guard counters are not incremented in the output of the **show ipv6 first-hop counters interface** command when Router Advertisement and Router Redirect packets with Destination address FF02::x are dropped.

  Workaround: None. CSCtf69108

Open Caveats in Cisco IOS Release 15.0(2)SG

This section lists the open caveats in Cisco IOS Release 15.0(2)SG:

- On rare occasions, if you use an X2 SR transceiver on a WS-X4706-10GE running Cisco IOS Release 12.2(40)SG, you will observe CRC errors after a reload or power cycle when you insert the card or the X2.

  Workaround: Reinsert the X2. CSCsk43618

- If a class-map is configured with **exceed-action drop**, re-configuring the same class-map with **exceed-action transmit** causes class-map configurations to conflict for the same class-map.

  Workaround: If you plan to change a class-map action, such as **exceed-action**, you meed to remove the class-map with the **no class c1** command under policy-map submode. Then, apply the new class-map with the updated changes. CSCsk70826

- If *burst* is not explicitly configured for a single rate policer, the **show policy-map command** displays an incorrect burst value.

  Workaround: Enter the **show policy-map interface** command. CSCsi71036

- When you enter the **show policy-map vlan** *vlan* command, unconditional marking actions that are configured on the VLAN are not shown.

  Workaround: None. However, if you enter the **show policy-map** *name*, the unconditional marking actions are displayed. CSCsi94144

- IGMP snooping entries are active even after disabling IGMP snooping globally and per VLAN.

  Workarounds: Disable IGMP snooping on all the relevant VLANs before disabling it globally.

- IPv6 entries are active in the CAM; the CPU receives IPv6 packets.

  Workaround: Unconfigure any generic QOS policies from the system. The QoS policies with the **match any** attribute cause IPv6 entries to become active. If the switch is a pure Layer 2 device, remove the generic protocol family attributes and narrow it to the protocol family. CSCsq84796

- In Cisco IOS Release 12.2(54)SG, if an etherchannel is a member of a flexlink pair, then static MAC addresses configured on the EtherChannel are not moved to the alternate port when the EtherChannel fails (flexlink failure)

  Workaround: None. CSCsq99468

- When a CFM Inward Facing MEP(IFM) is configured on a VLAN that is not allocated on a switch port that is DOWN, the **show ethernet cfm maintenance-points local** command displays the IFM CC Status as **Inactive**. Then, you allocate the VLAN, the CC-status remains **Inactive**.

  You only see this symptom if you did not allocate a VLAN before you configure the IFM, then at a later time allocate the same VLAN.

  Workaround: Unconfigure, then reconfigure the IFM on the port.

- An IP unnumbered configuration is lost after a reload.

  Workarounds: Do one of the following:

  - After a reload, copy the startup-config to the running-config.
  - Use a loopback interface as the target of the **ip unnumbered** command
  - Change the CLI configuration such that during bootup, the router port is created first.

  CSCsq63051

- In SSO mode on the Catalyst 4900M switch, when a port-channel is created, deleted, and re-created on an active supervisor engine with the same channel-number, the standby port-channel state goes out of sync. After a switch over, the following message displays:

  ```
  %PM-4-PORT_INCONSISTENT: STANDBY:Port is inconsistent:
  ```

  Workaround: When the port channel starts to flap, enter **shut** and **no shut** on the port channel. After the first switchover and after deleting the portchannel, create a new channel. CSCsr00333

- Duplicate serial number error messages are reported on switching One X Convertor with SFP+, SFP+, X2 to another port, the inserted port enters a faulty status.

  This problem impacts X2, OneX converters, and SFP+ on the Supervisor Engine 6-E, and linecards.

  Workaround: Remove and reinsert the One X Convertor with SFP+, SFP+ alone, or X2 after some perceivable delay. CSCsu43461

- VTP databases do not propagate through promiscuous trunk ports. If only promiscuous trunks are configured, users will not see the VLAN updates on the other switches in the VTP domain.

  Workaround: For VTP database propagation, configure ISL/dot1q trunk port. CSCsu43445

- After posture validation succeeds, the following benign traceback messages may appear after you unconfigure the global RADIUS and IP device tracking commands:

  ```
  %SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
  eou_auth 4.1.0.101   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
  106617F8
  %SM-4-BADEVENT: Event 'eouAAAAuthor' is invalid for the current state 'eou_abort':
  eou_auth 4.1.0.102   Traceback= 101D9A88 10B76BB0 10B76FE0 10B7A114 10B7A340 1066A678
  106617F8
  ```

  This applies to classic or E-series Catalyst 4500 supervisor engines running Cisco IOS Release 12.2(50)SG

  Workaround: None. CSCsw14005

- On a Catalyst 4900M switch, the host's MAC address is not synchronized to the standby supervisor engine after you unconfigure 802.1X on the port and reconnect the host to a IP phone (with CDP port status TLV support) that is connected to the switch.

If the switch were to run a supervisor switchover while in this state, the host's MAC address would not be present in the new active supervisor engine's MAC address table, causing possible connectivity interruption on the host.

Workaround: Enter the **shutdown** command, followed by the **no shutdown** command on the interface. This triggers relearning and synchronizing of the host's MAC to the standby supervisor engine. CSCsw91661

- Class-map hit counters do not increment on the egress policy-map when it is attached to the primary VLAN on a PVLAN trunk ports. However, the traffic is properly classified and the actions configured in the policy are applied properly.

  Workaround: None. CSCsy72343

- When multiple streams of CRC errors are encountered on WS-C4900M configured with OAM Configuration of monitoring the frame errored seconds, OAM does not always report the value of errored frame seconds correctly.

  To observe this issue, the following CLIs are configured with window size as the period for monitoring the errors and a low threshold equal to the number of CRC errored seconds seen/expected.

  ```
  ethernet oam link-monitor frame-seconds window
  ethernet oam link-monitor frame-seconds threshold low
  ```

  Workaround: Configure a lower value of low threshold such that the frame errors are seen divided into the expected number of frame errored seconds. CSCsy37181

- If you simultaneously apply a service-policy to a port in the output direction and a service-policy to a vlan-range under that port in the output direction, the class-map hit counters in the output of the **show policy-map interface** command are wrong.

  Workaround: None.

  The queue transmit counters as well as the policing statistics (if any) are correct. CSCsz20149

- On wireless control system (WCS), some device information is incorrectly displayed for PCs sitting behind an lldp-med capable phone. Specifically, WCS displays the phone's serial number, model number, and software version in the PC's device information. All other information about the PC is correctly displayed on WCS.

  This only happens when the switch is running network mobility service protocol (nmsp). It does not happen if the phone is CDP enabled.

  Workaround: Use VLAN ID or name to differentiate the IP phone and the PC sitting behind the phone on the WCS. Specifically, the IP phone is detected on the voice VLAN, and the displayed information of serial number, model number, and software version is correct. However, a PC sitting behind the phone is detected on a data VLAN, and the displayed device information is wrong and should be ignored. CSCsz34522

- When you configure **switchport block multicast** on a switch running Cisco IOS Release 12.2(53)SG1 and later or 12.2(50)SG6 and later, Layer 2 multicast is not blocked.

  Prior to Cisco IOS Release 12.2(53)SG1, 12.2(50)SG6, the **switchport block multicast** command would block IP Multicast, Layer 2 multicast, and broadcast traffic (CSCta61825).

  Workaround: None. CSCtb30327

- If *time* is not specified in the **link debounce** command, the default value depends on the supervisor engine. The default is 10 mS for 4948E, C4900M, Supervisor Engine 6-E, and Supervisor Engine 6L-E. The default is 100 mS for all other supervisor engines.

Workaround: None. CSCte51948

- Fast UDLD in aggressive mode may incorrectly errdisable a link in the following scenarios:
  - Fast UDLD peer switch performs SSO.
  - Fast UDLD peer switch is reloaded.
  - One or more interfaces on a fast UDLD peer switch are shut down (or the port mode changes from switchport to routed, and vice versa).

Note To reduce the likelihood of this event, connect at least two physical interfaces between fast UDLD peer switches. You must configure the interfaces with the same neighbor fast hello interval.

Workarounds:

- Reset the error disabled links with the **udld reset** command.
- Configure error disable recovery with the commands **errdisable recovery cause udld** and **errdisable recovery interval** *value (*between 30 and 86400 sec).
- Manually clear errdisable on the local interface with a **shutdown** then a **no shutdown**.

CSCtc99007

- On a peer interface on a Catalyst 4948E Ethernet Switch, if errdisabled mode flap detection is set to a very small number (such as 2 flaps in 10 sec), a 10GE link flap may cause the peer interface to enter the errdisabled state.

  Workarounds: The Cisco switch default link-flap detection value is 5 flaps in 10 seconds. Use the default value or larger numbers. CSCtg07677

- Before large PACLs are fully loaded in hardware, you might observe a false completion messages like the following:

```
Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-HWPROGSUCCESS: Input Security: pacl - now
fully loaded in hardware *Dec  1 18:44:59.926: %C4K_COMMONHWACLMAN-4-ALLACLINHW: All
configured ACLs now fully loaded in hardware - hardware switching / QoS restored.
```

  This issue does not impact functionality.

  Workaround: None.

  You must wait for the ACLs to be programmed before performing other TCAM related changes. CSCtd57063

- RA Guard counters are not incremented in the output of the **show ipv6 first-hop counters interface** command when Router Advertisement and Router Redirect packets with Destination address FF02::x are dropped.

  Workaround: None. CSCtf69108

- ND/NS packets are dropped when an IPv6 ACL is attached to an Layer 3 interface.

  Workaround: Add the following permit ACEs to the ACL:

```
permit icmp any any nd-ns
 permit icmp any any nd-na
```

  CSCtg77035

- When you have enabled EPM logging and the client is authenticated via MAB or Webauth, the value of AUTHTYPE is DOT1X in EPM syslog messages irrespective of the authentication method.

Similarly, the show epm sessions command always displays the authentication method as DOT1X.

Workaround: To view the authentication method used for a client, enter the **show authentication sessions** command. CSCsx42157

- With CFM enabled globally as well as on an ingress interface, CFM packets received on the interface are not policed with hardware control plane policing.

  Workaround: None. CSCso93282

- When Fallback WebAuth and Multi-host is configured on a port and no PACL exists, "permit ip any any" is installed in the TCAM and all traffic from the host is allowed to pass.

  Workaround: Configure an ACL on the port. CSCte18760

- With a NEAT configuration on an ASW (Catalyst 4500 series switch) connected to an SSW (Catalyst 3750 series switch) serving as a root bridge and with redundant links between ASW and SSW, the following occur:
  - STP does not stabilize.
  - The SVI (network) is unreachable. If an SVI exists on the ASW, because of the STP flap in the setup as well as the CISP operations, the SVI MAC configuration on the ASW is incorrect.

  Workaround: Configure the ASW or any other switch upstream as the root-bridge for all the VLANs. CSCtg71030

- When a packet sampling monitor is applied on a Layer 3 port, which is also configured for Layer 3 RACL, you might observe multiple merged ACL path signatures stemming from merging the sampling and security ACL features. This behavior results in multiple (twice) copies of flattened ACE programmed in the TCAM, wasting ACL TCAM space.

  This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches. It does not impact functionality.

  Workarounds: Do one of the following:
  - Change the interface to a Layer 2 switch port
  - Do not configure an ACL access-list on the same Layer 3 interface where sampling monitor is enabled. CSCtn79032

- When either the RADIUS-server test feature or RADIUS-erver dead-criteria is configured and either RADIUS-server deadtime is not configured or is set to 0, the RADIUS-server status is not properly relayed to AAA.

  Workaround: Configure both dead-criteria and deadtime.

  ```
  radius-server dead-criteria
  radius-server deadtime
  ```

  CSCtl06706

- When two distinct Layer 3 CE-facing interfaces exist, each connected to a CE to split WCCP between the two CEs, and you move a particular WCCP service (like 60 (ftp-native)) from one Layer 3 interface to the other, the target interface fails to completely transfer the service to the new CE from the old CE.

  Workaround: Shutdown the CE-facing interface. Once all the mask-value entries point to the target CE, unshut the CE-facing interface. CSCtl09941

- After a session falls back to Web Authentication, and no port ACL or fallback ACL is configured, Auth_Default_ACL is programmed infrequently.

  Workaround: Configure a port ACL on the interface. CSCtl89389

- When spanning tree is changed from PVST to Rapid PVST and you enter the **show spanning-tree vlan** command, the ports configured as promiscuous trunks are not listed as part of the spanning tree.

  Workaround: Enter **shut**, then **no shut** on the ports. CSCtn88228

- If two clients are authenticated by MAB on a multi-host port, when the first client moves to a different port using MAC Move, the second host is not authenticated; it remains in the running state.

  Workaround: Clear the MAC address. CSCtn24046

- If a port has joined a portchannel, you cannot modify a VLAN map configuration of an EtherChannel member port.

  Workaround: Shut the member port. CSCtn49832

- Selective Q-in-Q CLIs are rejected on a port-channel after deleting all the one-to-one CLIs.

  Workaround: Enter the **interface range** command to configure all member ports to use a new port channel that is created automatically. CSCtn52362

- A portchannel does not come up after you configure for VLAN translation.

  Workaround: Enter **shut** then **no shut** on the member port. CSCtn52404

- If a large number of VLAN mappings are configured, a member port might fail to join a port channel and no warming is issued.

  Workaround: Reduce the number of VLAN mappings. CSCtn56208

- WCCP service is not reacquired when a service group with a multicast group-address is unconfigured, and then reconfigured.

  Workaround: Configure ip multicast-routing globally and establish ip pim sparse-dense-mode on the CE-facing interface. CSCtl97692

- When reconnecting to a switch using device tracking, a Windows Vista, 2008, or 2007 device registers a duplicate address message. A Windows Vista, 2008, or 2007 client probes for a tentative IP address while the switch probes for device status. This duplicate address register issue is usually triggered by disconnecting or reconnecting.

  Workaround: Disable gratuitous ARP on the Windows device. CSCtn27420

- If you create a new IPv6 ACL, delete a permit ACE, and then add back the permit ACE, the **sh run | b ipv6 access-list** command displays unexpected commands on the IPv6 access-list configuration.

```
sh run | b ipv6 access-list
ipv6 access-list ipv6acl
 permit icmp any FF01::/16
 permit icmp any FF02::/16
 sequence 40 permit icmp any FE80::/10
sequence 40 (appears in front of entry)
```

  In the output above, **sequence 40** is the unexpected command that appears in front of the entry.

  Workaround: Delete the access-list and reconfigure all entries, rather than deleting or reconfiguring the access-list. CSCtn83348

- If an interface whose IP address is being used as the Router ID is deleted or shuts down and you configure a service group with a multicast group-address, packet redirection to CE stops and packets are forwarded directly to the destination.

  Workaround: Unconfigure and reconfigure the service group. CSCtn88087

- When a sampling monitor is configured on a routed port or on a VLAN (an SVI with just one port as a member) and **bidir multicast** is enabled, a packet sample may be exported even though the original multicast packet was not forwarded by the switch.

This issue only impacts Catalyst 4948E and Catalyst 4948E-F Ethernet Switches.

Workaround: None. CSCtk97612

- If you reboot a switch, the configured value of interface MTU size on the members of port-channel interface does not function for IPv6 traffic.

  Workaround: After the switch reloads, enter **shut**, then **no shut** on the port-channel interface.

  CSCto27085

- A switch configured for **epm open directive** in multi-auth configuration fails when authentication sessions are cleared.

  Workaround: Do not configure open directive on the switch. CSCto48824

- Global WCCP service configuration fails to enable (WCCP global config is accepted but nvgen fails) on a newly deployed switch if the switch is not enabled for SVI or a Layer 3 interface.

  Workaround: Enable a Layer 3 interface in the running config. CSCsc88636.

- If you enter the **clear ip mroute ?** command, only the **vrf** option is displayed. The **Hostname** and ' ***** ' options are not displayed, although they are accepted by the system, and the **clear ip mroute** command functions as expected.

  Workaround: None. CSCto59368

- A host IP is not inserted into a URL redirect ACL unless the host IP is already in the device tracking table (DHCP snooping or IPDT).

  Workaround: None. CSCtn63638

- DACLs, filter-ID, and proxy ACLs do not function correctly.

  Workaround: None. CSCto79232

- If Filter ID or fallback ACLs are currently applied to a port, and you modify them, they will not be programmed correctly in hardware.

  Workaround: Modify filter ID or fallback ACLs only when they are not in use. CSCto79274

- If Flex link load balancing is configured on a PVLAN flex link pair and some VLANs prefer the backup interface in the pair, entering **shut** and then **no shut** on the backup flex link interface causes high cpu from SA miss events. This happens because dynamic mac address learning is broken.

  The primary flex link interface comes up correctly.

  Workaround: Configure static MAC address for the MAC address that must be learned dynamically on the backup flex link interface. (CSCtr40070)

- When configuring, removing, and reapplying IP SLA configuration (reapply without the history filter) and querying the rttmonhistory tree, a Catalyst4 948-10GE switch will fail.

  Workaround: None. (CSCtr52740)

- Configuring and copying a TCL policy may cause a Catalyst 4500 series switch to hang.

  Workaround: None. CSCto72927

- Layer 2 multicast is not switched egress with a port-channel interface after a member link or port-channel flaps.

  Workaround:

  1. Delete, then add the affected VLAN with **no vlan** *vlan_ID*, then **lan** *vlan_ID.*

  2. Flap the impacted port-channel with **shutdown**, then **no shutdown**. CSCtr17251

- When a switch is configured for MAC Authentication Bypass (MAB) EAP and the AAA server requests EAP-TLS (as the EAP method) first, MAB fails.

  Workarounds:

  - Configure the switch port for *mab* rather than *mab eap.*
  - Configure the AAA server to propose EAP-MD5 first rather than EAP-TLS for MAB EAP requests. CSCti78674

- When you enter the **rep preempt segment** command, the MAC might not flush.

  Workaround: Re-enter the **rep preempt segment** command. CSCtr89862

- When only an RX fiber is broken on a 10-Gigabit Ethernet link in a REP ring, REP segment convergence might require more than 500 ms.

  Only WS-C4900M uplink ports (Te1/1-8), WS-X45-SUP6L-E uplink ports, and WS-X4904-10GE are affected.

  Workaround: Use a non-affected module for REP ports such as WS-X4908-10GE. CSCtr76579

- After a switch reestablishes a lost connection with AAA servers configured for broadcast accounting, the switch crashes.

  Workaround: Do not use the **broadcast** keyword in the aaa accounting configuration. CSCts56125

- A switch configured with 802.1X might shows considerable CPU usage by the 802.1X switch process and displays the following message:

  ```
  SYS-2-MALLOCFAIL messages, and - on redundant systems - begins logging EM-4-SENDFAILED
  messages,
  ```

  The occurs under the following conditions:

  - Multi-auth (or multi-host) and MAB dot1x are configured on a port.
  - A voice VLAN is not configured on the port.
  - The device authenticates through 802.1X.
  - The connected device sends no traffic, falls over to MAB, and then successfully authenticates through 802.1X.
  - A dynamic VLAN is assigned to the port following 802.1X authorization.

  Workarounds:

  - Enter **shut** then **no shut** on the port to halt the high CPU and log messages.
  - Enter the **switchport voice vlan** command on the port. CSCtw73754

- If PoE linecards are present and you enter either the **show power inline module** *x* or **show power inline module** *x* **detail** command, very rarely the supervisor engine might crash.

  Workaround: None. CSCtx25697

- After a few hours of operation, during which DHCP is enabled and sessions receive DHCP information from a RADIUS server, a Cisco ASR router running as an LNS box crashes with DHCP related errors.

  Workaround: None. CSCtj48387

- Configuring an interface as uni-directional with the **unidirectional** *send-only* | *receive-only* command still allows the interface to send (configured as “Send-only Unidirection Ethernet mode”) or receive (configured as "Receive-only Unidirection Ethernet mode") packets in a bi-directional mode.

  Workaround: None. CSCtx95359

- If a switch is configured with the **aaa accounting send stop-record authentication failure** command, and MAB fails on the port and subsequent attempts are made to authorize the device after the restart timer expires, a high level of memory usage due to the "MAB Framework" process is observed.

  Workaround: Unconfigure the following from the switch: **aaa accounting send stop-record authentication failure**. CSCtj69212

- When a trunk port is configured with a native VLAN other than VLAN 1, REP packets are not sent on that VLAN.

  Workaround: Retain the default setting (VLAN 1) for the native VLAN on trunks ports. CSCud05521

- If REP is configured on a dot1q trunk and the native VLAN is administratively set to a non-default value, REP packets are not sent on the native VLAN.

  Workaround: Retain the trunk native V LAN as 1. CSCud05521

- If a dACL name is too long (about 24 characters, depending on the interface where it is applied), the ACL is incorrectly shared over multiple ports.

  Workaround: Shorten the dACL name. CSCug78653

- redirect-url and redirect-acl are not cleared after a successful CoA, causing the final step of Central Web Authentication to fail.

  Workaround: Return a dACL in the authorization profile with successful guest authentication.

  CSCue62019

- If URL redirect is installed as part of authorization and either of the following occurs, memory will leak:

  - A fast stream of traffic matches the URL redirect ACL as IPDT clears an address.
  - A traffic stream matches the URL redirect ACL and no URL redirect policy is installed for that IP address.

  If memory leak occurs repeatedly, IPDT and other control packet processing ultimately ceases.

  Workaround: If this behavior completely fills the CPU buffer, the switch must be reloaded. However, the frequency of encountering a stuck queue can be reduced to nearly zero by modifying the URL redirect ACL to permit only 80/443 traffic. CSCug56646

- If a device is authenticating while the RADIUS server goes down, the port connected to the device may enter the err-disabled state.

  Workaround: Configure RADIUS test and dead criteria.

  Example:

  ```
  radius-server dead-criteria time 10 tries 2
  radius-server host <ip> test username test key <key>
  radius-server deadtime 10
  ```

  CSCtn92693

- If 10Gbps BaseT ports (on WS-X4908-10G-RJ45) are connected to a peer device using a Broadcom BCM84833 chipset, the connection either never boots or takes a very long time (up to an hour).

  This issue applies to Cisco IOS Release 15.0(2)SG through 15.0(2)SG7, and 15.1(2)SG through 15.1(2)SG3.

  Workaround: Downgrade to Cisco IOS Release 12.2(54)SG. CSCug68370

- In the output of the **show interface** command, output counters for an EtherChannel member remain zero provided the ports are flapped from a peer and the switch is either Catalyst 4900M, Catalyst 4948E, or 4948E-F, or the supervisor engine is either 6E or 6L-E.

  Workaround: Enter the **show platform software interface Gix/xx statistic** command.

  CSCuf60629

- If you configure Open Authentication and perform SSO, the spanning tree state and MAC address are not synchronized to the new standby supervisor engine. The issue interrupts traffic only after the second switchover, because after the initial switchover the new standby supervisor engine possesses the wrong state, and the second switchover will start the port in the blocking state.

  Workaround: Enter **shut**, and then **no shut** on the port to synchronize the STP state. CSCtf52437

Resolved Caveats in Cisco IOS Release 15.0(2)SG

This section lists the resolved caveats in Release 15.2(2)SG:

- If VLAN load balancing is progressing, and you reconfigure VLAN load balancing to reflect different blocking ports, manual preemption does not occur.

  Workaround: Reconfigure VLAN load balancing with a different configuration, by performing the following task:

  a. Reconfigure the VLAN load balancing configuration on the desired REP ports.
  b. Use the **shut** command on any one REP port in the segment to cause a failure in that segment.
  c. Use the **no-shut** on the same port to restore normal REP topology with one ALT port.
  d. Invoke manual pre-emption on a primary edge port to obtain VLAN load balancing with the new configuration. CSCsv69853

- When you remove an SFP+ from a OneX converter in a X2 slot, the system requires roughly 45 seconds to recognize this action. During this interval, all commands reflect that the SFP+ is still present. Reinserting the SFP+ in another port or inserting another SFP+ in the same port can cause a *duplicate seeprom* error message.

  Workaround: When a log message appears indicating that the SFP+ has been removed, do one of the following:

  – Enter any commands for that port.
  – Insert an SFP+ in that port.
  – Reinsert the removed SFP+ in another port. CSCsv90044

- If you disable and re-enable IGMP Snooping on a VLAN, the output of the **show mac address** command does not display the [term] Switch against the multicast entry. Multicast traffic is not impacted.

  Workaround: Do **shut**, then **no shut** on the SVI. CSCtg72559

- If host mode multi-domain is configured, after a successful authorization, neither the data device nor the IP phone will pass traffic.

  Workaround: None. CSCtj56811

- A switch may fail while loading BGP routes if the **ip cef accounting non-recursive** command is already configured.

  Workaround: Disable the **ip cef accounting non-recursive** command. CSCtn68186

- When CX1 or SFP+ is plugged into a OneX converter (CVR-X2-SFP10G) in a WS-X4908-10GE, the later requires 1 minute to boot the link.

  Workaround: None. CSCtc46340

- A switch crashes when attaching a service-policy to a target, provided the service-policy contains more than 56 classes and each class is associated with an explicit marking action, such as:

```
policy-map pm
 class c0
   set dscp default
   set cos 0
 class c1
   set dscp 1
   set cos 1
 class c2
   set dscp 2
   set cos 2
... ...
 class c56
   set dscp cs7
   set cos 0
```

  Workaround: Use tablemap-based marking. CSC99836

- When you reload an adjoining Catalyst 3400 switch connected to two Catalyst 4500 Series Switches in a REP ring topology, the REP alternate port does not block any traffic.

  Workaround: Enter **shut** then **no shut** on the alternate port. CSCtn26322

- If a redirect ACL is installed on multiple ports using cisco-av-pair url-redirect-acl=ACLNAME and the ACL is modified, the EPM MAIN process reports elevated CPU usage.

  Workaround: None. CSCtn61307

- If host mode multi-domain is configured, after a successful authorization, neither the data device nor the IP phone will pass traffic.

  Workaround: None. CSCtj56811

- A non-supplicant PC is connected to an 802.1x port in MDA mode. Upon no response to EAPOL, the PC is placed in a Guest VLAN (correct behavior). If the supplicant is enabled on the PC and the credentials are entered, the switch reports AUTHC success and AUTHZ fail. If client re-attempts 802.1x before the port returns to the Guest VLAN, this process succeeds.

  Workaround: None. CSCtl89361

- When a configuration file has VTP mode off and is copied to the running config, the VLANs that are not already in the VLAN database are not created.

  Workarounds:

  - Use VTP Mode transparent.
  - Create the VLANs manually. CSCtl94096

- After reloading and rebooting one of the switches in a REP ring topology, the alternate port forwards traffic and causes a loop.

  Workaround: Enter **shut**, then **no shut** on the alternate interface. CSCtn03533

- If VLAN load balancing is enabled, after the primary Flex Link goes down and then recovers, a Catalyst 4500 switch sends out multicast frames when the preemption timer expires. The switch sends out one additional unicast frame after it sends out the Flex Link multicast frames, causing the secondary core to learn the MAC address on an incorrect port.

  Workaround: None. CSCtk30811

- LACP ports between a Catalyst 4500 Switch and a Nexus enter Suspended Mode when the native VLAN is tagged and changed to x on both chassis (native VLAN is not 1).

  Workaround: None. CSCtj90471

- LLDP frames are tagged incorrectly when leaving an 802.1q port if the native VLAN has a value other than 1.

  Workaround: Use the default native VLAN (VLAN of 1) for the trunks. CSCtn29321

- If a port channel is created on a Catalyst 4948E Ethernet Switch 1 Gigabit Ethernet SFP upstream interface and one of the interface links goes down, the average convergence time is roughly 3 sec.

  This behavior is not observed on 10 Gigabit Ethernet SFP+ uplink interfaces.

  Workaround: None. CSCth51469

Troubleshooting

These sections provide troubleshooting guidelines for the Catalyst 4900M series switch running IOS supervisor engines:

Netbooting from the ROMMON

Netbooting using a boot loader image is not supported. Instead, use one of the following options to boot an image:

1. Boot from a CompactFlash card by entering the following command:

   ```
   rommon 1> boot slot0:<bootable_image>
   ```

Note The Catalyst 4948E does not contain a compact flash slot.

2. Use ROMMON TFTP boot.

   The ROMMON TFTP boot is very similar to the BOOTLDR TFTP boot, except that:

   - the BOOTLDR variable should *not* be set
   - the TFTP server must be accessible from the Ethernet management port on the supervisor engine.

   To boot from ROMMON, perform the following tasks while in ROMMON mode:

a. Ensure that the Ethernet management port is physically connected to the network.

b. Verify that bootloader environment is not set by entering the **unset bootldr** command.

c. Set IP address of the Ethernet management port on the supervisor engine by entering the following command: **set interface fa1** *ip_address*> <*ip_mask*

   For example, to set the supervisor engine Ethernet port with an IP address 172.16.1.5 and IP mask 255.255.255.0, enter the following command:

```
rommon 2> set interface fa1 172.16.1.5 255.255.255.0
```

d. Set default gateway for the Ethernet management port on the supervisor engine by entering the following command: **set ip route default** *gateway_ip_address*. The default gateway should be directly connected to the supervisor engine Ethernet management port subnet.

e. Ping the TFTP server to ensure that there is connectivity to the server from the Ethernet management port on the supervisor engine by entering the following command: **ping** <*tftp_server_ip_address*>.

f. Once the ping is successful, boot the image from the TFTP server by entering the following command: **boot tftp://***tftp_server_ip_address*>**/**<*image_path_and_file_name*

For example, to boot the image name **cat4500-ipbase-mz** located on the TFTP server 172.16.1.8, enter the following command:

```
rommon 3> boot tftp://172.16.1.8/tftpboot/cat4500-ipbase-mz
```

Troubleshooting at the System Level

This section contains troubleshooting guidelines for system-level problems:

- When the system is booting and running power-on diagnostics, do not reset the switch.
- Ensure that you do not mix the serial and Ethernet cables. The Ethernet Management port is inoperative. An Ethernet cable plugged into the Ethernet port is active only in ROMMON mode.

Troubleshooting Modules

This section contains troubleshooting guidelines for the Catalyst 4900M series switch:

- Whenever you connect an interface that has duplex set to autonegotiate to an end station or another networking device, ensure that the other device is configured for autonegotiation as well. If the other device is not set to autonegotiate, the port set to autonegotiate will remain in half-duplex mode, which can cause a duplex mismatch resulting in packet loss, late collisions, and line errors on the link.

Troubleshooting MIBs

For general information on MIBs, RMON groups, and traps, refer to the Cisco public MIB directory (http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml). For information on the specific MIBs supported by the Catalyst 4900M series switches, refer to the Catalyst 4000 MIB Support List located at ftp://ftp.cisco.com/pub/mibs/supportlists/cat4000/cat4000-supportlist.html.

Related Documentation

Although their Release Notes are unique, the 4 platforms (Catalyst 4500, Catalyst 4900, Catalyst ME 4900, and Catalyst 4900M) use the same *Software Configuration Guide*, *Command Reference Guide*, and *System Message Guide*. Refer to the following home pages for additional information:

- Catalyst 4500 Series Switch Documentation Home

  http://www.cisco.com/go/cat4500/docs

- Catalyst 4900 Series Switch Documentation Home

http://www.cisco.com/go/cat4900/docs

- Cisco ME 4900 Series Ethernet Switches Documentation Home

  http://www.cisco.com/en/US/products/ps7009/tsd_products_support_series_home.html

Hardware Documents

Installation guides and notes including specifications and relevant safety information are available at the following URLs:

- *Catalyst 4500 Series Switches Installation Guide*

  http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/hardware/installation/guide/78-14409-08/4500inst.html

- *Catalyst 4500 E-series Switches Installation Guide*

  http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/hardware/catalyst4500e/installation/guide/Eseries.html

- For information about individual switching modules and supervisors, refer to the *Catalyst 4500 Series Module Installation Guide* at:

  http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_installation_guides_list.html

- *Regulatory Compliance and Safety Information for the Catalyst 4500 Series Switches*

  http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/hardware/regulatory/compliance/78_13233.html

- Installation notes for specific supervisor engines or for accessory hardware are available at:

  http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_installation_guides_list.html

- Catalyst 4900 and 4900M hardware installation information is available at:

  http://www.cisco.com/en/US/products/ps6021/prod_installation_guides_list.html

- Cisco ME 4900 Series Ethernet Switches installation information is available at:

  http://www.cisco.com/en/US/products/ps7009/prod_installation_guides_list.html

Software Documentation

Software release notes, configuration guides, command references, and system message guides are available at the following URLs:

- Catalyst 4500 release notes are available at:

  http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_release_notes_list.html

- Catalyst 4900 release notes are available at:

  http://www.cisco.com/en/US/products/ps6021/prod_release_notes_list.html

- Cisco ME4900 4900 Series Ethernet Switch release notes are available at:

  http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/release/note/OL_11511.html

Software documents for the Catalyst 4500 Classic, Catalyst 4500 E-Series, Catalyst 4900, and Cisco ME 4900 Series Ethernet Switches are available at the following URLs:

- *Catalyst 4500 Series Software Configuration Guide*

http://www.cisco.com/en/US/products/hw/switches/ps4324/products_installation_and_configuration_guides_list.html

- *Catalyst 4500 Series Software Command Reference*

  http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_command_reference_list.html

- *Catalyst 4500 Series Software System Message Guide*

  http://www.cisco.com/en/US/products/hw/switches/ps4324/products_system_message_guides_list.html

Cisco IOS Documentation

Platform-independent Cisco IOS documentation may also apply to the Catalyst 4500 and 4900 switches. These documents are available at the following URLs:

- Cisco IOS configuration guides, Release 12.x

  http://www.cisco.com/en/US/products/ps6350/products_installation_and_configuration_guides_list.html

- Cisco IOS command references, Release 12.x

  http://www.cisco.com/en/US/products/ps6350/prod_command_reference_list.html

  You can also use the Command Lookup Tool at:

  http://tools.cisco.com/Support/CLILookup/cltSearchAction.do

- Cisco IOS system messages, version 12.x

  http://www.cisco.com/en/US/products/ps6350/products_system_message_guides_list.html

  You can also use the Error Message Decoder tool at:

  http://www.cisco.com/pcgi-bin/Support/Errordecoder/index.cgi

- For information about MIBs, refer to:

  http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

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This document is to be used in conjunction with the documents listed in the "Related Documentation" section.

Release Notes for the Catalyst 4900 Series Switch, Cisco IOS Release 15.0(2)SG