



Debug Commands

This appendix describes only the Catalyst 3550-specific **debug** privileged EXEC commands. These commands are helpful in diagnosing and resolving internetworking problems and should be enabled only under the guidance of Cisco technical support staff.



Caution

Because debugging output is assigned high priority in the CPU process, it can render the system unusable. For this reason, use the **debug** commands only to troubleshoot specific problems or during troubleshooting sessions with Cisco technical support staff. It is best to use the **debug** commands during periods of lower network traffic and fewer users. Debugging during these periods decreases the likelihood that increased **debug** command processing overhead will affect system use.

debug acltcam

Use the **debug acltcam** privileged EXEC command to debug the actions of the quality of service/access control list (QoS/ACL) ternary content addressable memory (TCAM) manager software module, which controls the allocation and updating of entries in the parts of the TCAM used for input security ACLs, output security ACLs, and QoS ACLs. Use the **no** form of this command to disable debugging output.

debug acltcam [**verbose**]

no debug acltcam [**verbose**]

Syntax Description	verbose (Optional) Enable more detailed debugging.				
Defaults	Debugging is disabled.				
Command Modes	Privileged EXEC				
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>12.1(4)EA1</td> <td>This command was first introduced.</td> </tr> </tbody> </table>	Release	Modification	12.1(4)EA1	This command was first introduced.
Release	Modification				
12.1(4)EA1	This command was first introduced.				
Usage Guidelines	The undebug acltcam command is the same as the no debug acltcam command.				
Related Commands	<table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>show debugging</td> <td>Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands.</td> </tr> </tbody> </table>	Command	Description	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
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show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .				

debug autoqos

Use the **debug autoqos** privileged EXEC command to enable debugging of the automatic quality of service (auto-QoS) feature. Use the **no** form of this command to disable debugging.

debug autoqos

no debug autoqos

Syntax Description This command has no keywords or arguments.

Defaults Auto-QoS debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(12c)EA1	This command was first introduced.

Usage Guidelines To display the QoS configuration that is automatically generated when auto-QoS is enabled, enable debugging before you enable auto-QoS. You enable debugging by entering the **debug autoqos** privileged EXEC command.

The **undebg autoqos** command is the same as the **no debug autoqos** command.

Examples This example shows how to display the QoS configuration that is automatically generated when auto-QoS is enabled:

```
Switch# debug autoqos
AutoQoS debugging is on
Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)# interface fastethernet0/1
Switch(config-if)# auto qos voip trust
Switch(config-if)#
4d22h:mls qos map cos-dscp 0 8 16 26 32 46 48 56
4d22h:mls qos min-reserve 5 170
4d22h:mls qos min-reserve 6 10
4d22h:mls qos min-reserve 7 65
4d22h:mls qos min-reserve 8 26
4d22h:mls qos
4d22h:interface FastEthernet0/1
4d22h: mls qos trust cos
4d22h: wrr-queue bandwidth 20 1 80 0
4d22h: wrr-queue min-reserve 1 5
4d22h: wrr-queue min-reserve 2 6
4d22h: wrr-queue min-reserve 3 7
4d22h: wrr-queue min-reserve 4 8
4d22h: no wrr-queue cos-map
```

debug autoqos

```

4d22h: wrr-queue cos-map 1 0 1 2 4
4d22h: wrr-queue cos-map 3 3 6 7
4d22h: wrr-queue cos-map 4 5
4d22h: priority-queue out
Switchconfig-if)# interface gigabitethernet0/1
Switch(config-if)# auto qos voip cisco-phone
Switch(config-if)#
4d22h:interface GigabitEthernet0/1
4d22h: mls qos trust device cisco-phone
4d22h: mls qos trust cos
4d22h: wrr-queue bandwidth 20 1 80 0
4d22h: wrr-queue queue-limit 80 1 20 1
4d22h: no wrr-queue cos-map
4d22h: wrr-queue cos-map 1 0 1 2 4
4d22h: wrr-queue cos-map 3 3 6 7
4d22h: wrr-queue cos-map 4 5
4d22h: priority-queue out
Switch(config-if)#

```

Related Commands

Command	Description
auto qos voip	Configure auto-QoS for voice over IP (VoIP) within a QoS domain.
show auto qos	Displays the configuration applied and the new defaults in effect when auto-QoS is enabled.
show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference For IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug cluster

Use the **debug cluster** privileged EXEC command to debug cluster-specific events. Use the **no** form of this command to disable debugging output.

```
debug cluster { discovery | events | extended | hsrp | http | ip [packet] | members | nat | neighbors
               | snmp | vqpxy }
```

```
no debug cluster { discovery | events | extended | hsrp | http | ip [packet] | members | nat |
                 neighbors | snmp | vqpxy }
```

Syntax Description		
	discovery	Display cluster discovery debugging messages.
	events	Display cluster event debugging messages.
	extended	Display extended discovery debugging messages.
	hsrp	Display the Hot Standby Router Protocol (HSRP) debugging messages.
	http	Display Hypertext Transfer Protocol (HTTP) debugging messages.
	ip [packet]	Display IP or transport packet debugging messages.
	members	Display cluster member debugging messages.
	nat	Display Network Address Translation (NAT) debugging messages.
	neighbors	Display cluster neighbor debugging messages.
	snmp	Display Simple Network Management Protocol (SNMP) debugging messages.
	vqpxy	Display VLAN Query Protocol (VQP) proxy debugging messages.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(4)EA1	This command was first introduced.

Usage Guidelines The **undebug cluster** command is the same as the **no debug cluster** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
	show cluster	Displays the cluster status and a summary of the cluster to which the switch belongs.
	show cluster candidates	Displays a list of candidate switches when entered on the command switch.
	show cluster members	Displays information about cluster members when executed on the command switch.

debug cpu-interface

Use the **debug cpu-interface** privileged EXEC command to debug the driver for the application-specific integrated circuit (ASIC) that interfaces the CPU to the switch ASIC. Use the **no** form of this command to disable debugging output.

debug cpu-interface

no debug cpu-interface

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(4)EA1	This command was first introduced.

Usage Guidelines The **undebg cpu-interface** command is the same as the **no debug cpu-interface** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug dot1x

Use the **debug dot1x** privileged EXEC command to enable debugging of the 802.1X feature. Use the **no** form of this command to disable debugging output.

debug dot1x { **all** | **errors** | **events** | **packets** | **registry** | **state-machine** }

no debug dot1x { **all** | **errors** | **events** | **packets** | **registry** | **state-machine** }

Syntax Description

all	Display all 802.1X debugging messages.
errors	Debug 802.1X error codes.
events	Debug 802.1X event messages.
packets	Debug 802.1X packet messages.
registry	Debug registry invocation messages.
state-machine	Debug state-machine related events.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(8)EA1	This command was first introduced.
12.1(14)EA1	The authsm , backend , besm , core , and reauthsm keywords were removed. The errors , events , packets , registry , and state-machine keywords were added.

Usage Guidelines

The **undebug dot1x** command is the same as the **no debug dot1x** command.

Related Commands

Command	Description
show debugging	Displays information about the types of debugging that are enabled. For syntax information, refer to the Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
show dot1x	Displays 802.1X statistics, administrative status, and operational status for the switch or for the specified interface.

debug etherchannel

Use the **debug etherchannel** privileged EXEC command for EtherChannel/PAgP shim debugging. This shim is the software module that is the interface between the PAgP software module and the port manager software module. Use the **no** form of this command to disable debugging output.

debug etherchannel [**all** | **detail** | **error** | **event** | **idb**]

no debug etherchannel [**all** | **detail** | **error** | **event** | **idb**]

Syntax Description

all	(Optional) Display all EtherChannel debug messages.
detail	(Optional) Display detailed EtherChannel debug messages.
error	(Optional) Display EtherChannel error debug messages.
event	(Optional) Debug major EtherChannel event messages.
idb	(Optional) Debug Port Aggregation Protocol (PAgP) interface descriptor block messages.



Note

Though visible in the command-line help strings, the **linecard** keyword is not supported.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(4)EA1	This command was first introduced.

Usage Guidelines

If you do not specify a keyword, all debug messages appear.

The **undebug etherchannel** command is the same as the **no debug etherchannel** command.

Related Commands

Command	Description
show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
show etherchannel	Displays EtherChannel information for the channel.

debug ethernet-controller ram-access

Use the **debug ethernet-controller ram-access** privileged EXEC command to debug the driver that controls reads from and writes to the private (not directly accessible by the CPU) RAM connected to the forwarding application-specific integrated circuits (ASICs). Use the **no** form of this command to disable debugging output.

debug ethernet-controller ram-access

no debug ethernet-controller ram-access

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(4)EA1	This command was first introduced.

Usage Guidelines The **undebug ethernet-controller ram-access** command is the same as the **no debug ethernet-controller ram-access** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug fallback-bridging

Use the **debug fallback-bridging** privileged EXEC command to enable debugging of the fallback bridging manager software module. This command debugs the platform-specific part of the process of learning MAC addresses on bridge groups and updating the hardware with the necessary information. Use the **no** form of this command to disable debugging output.

debug fallback-bridging

no debug fallback-bridging

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(4)EA1	This command was first introduced.

Usage Guidelines The **undebg fallback-bridging** command is the same as the **no debug fallback-bridging** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug gigastack

Use the **debug gigastack** privileged EXEC command to debug the actions of the driver for the GigaStack Gigabit Interface Converter (GBIC). Use the **no** form of this command to disable debugging output.

debug gigastack

no debug gigastack

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(4)EA1	This command was first introduced.

Usage Guidelines The **undebbug gigastack** command is the same as the **no debug gigastack** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug ilpower controller

Use the **debug ilpower controller** privileged EXEC command to enable debugging of the platform-specific inline power software module in long message format. These messages include the Power Controller register reading. Use the **no** form of this command to disable debugging output.

debug ilpower controller

no debug ilpower controller

This command is available only on the Catalyst 3550-24PWR switch.

Syntax Description This command has no keywords or arguments.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(12c)EA1	This command was first introduced.

Usage Guidelines The **undebug ilpower controller** command is the same as the **no debug ilpower controller**.

Related Commands	Command	Description
	debug ilpower event	Enables debugging of the platform-specific inline power software module in a short message format.

debug ilpower event

Use the **debug ilpower event** privileged EXEC command to enable debugging of the platform-specific inline-power software module in a short message format. These messages display the inline-power state and events received. Use the **no** form of this command to disable debugging output.

debug ilpower event

no debug ilpower event

This command is available only on the Catalyst 3550-24PWR switch.

Syntax Description This command has no keywords or arguments.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(12c)EA1	This command was first introduced.

Usage Guidelines The **undebug ilpower event** command is the same as the **no debug ilpower event**.

Related Commands	Command	Description
	debug ilpower controller	Enables debugging of the platform-specific inline-power software module in long message format.

debug ip dhcp snooping

Use the **debug ip dhcp snooping** privileged EXEC command to debug Dynamic Host Configuration Protocol (DHCP) snooping events. Use the **no** form of this command to disable debugging output.

```
debug ip dhcp snooping {acl | event | packet}
```

```
no debug ip dhcp snooping {acl | event | packet}
```

Syntax Description	Parameter	Description
	acl	Display all DHCP snooping access control list (ACL) messages.
	event	Display all DHCP snooping event messages.
	packet	Display all DHCP snooping packet messages.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(19)EA1	This command was first introduced.

Usage Guidelines The **undebug ip dhcp snooping** command is the same as the **no ip debug dhcp snooping** command.

Related Commands	Command	Description
	show ip dhcp snooping	Displays the DHCP snooping configuration.
	show ip dhcp snooping binding	Displays the DHCP snooping binding information.

debug ip igmp filter

Use the **debug ip igmp filter** privileged EXEC command to debug IGMP filter events. Use the **no** form of this command to disable debugging output.

debug ip igmp filter

no debug ip igmp filter

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(8)EA1	This command was first introduced.

Usage Guidelines The **undebug ip igmp filter** command is the same as the **no debug ip igmp filter** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug ip igmp max-groups

Use the **debug ip igmp max-groups** privileged EXEC command to debug IGMP maximum groups events. Use the **no** form of this command to disable debugging output.

debug ip igmp max-groups

no debug ip igmp max-groups

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(8)EA1	This command was first introduced.

Usage Guidelines The **undebg ip igmp max-groups** command is the same as the **no debug ip igmp max-groups** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug l3multicast

Use the **debug l3multicast** privileged EXEC command to debug the platform-specific Layer 3 IP multicast manager software module, which maintains platform-specific data describing IP multicast routes. Use the **no** form of this command to disable debugging output.

debug l3multicast

no debug l3multicast

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(4)EA1	This command was first introduced.

Usage Guidelines The **undebbug l3multicast** command is the same as the **no debug l3multicast** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug l3tcam

Use the **debug l3tcam** privileged EXEC command to debug the Layer 3 ternary content addressable memory (TCAM) manager software module, which controls the allocation of the part of the TCAM used in IP unicast and multicast routing, including the allocation of both routes and adjacencies in the TCAM. Use the **no** form of this command to disable debugging output.

debug l3tcam

no debug l3tcam

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(4)EA1	This command was first introduced.

Usage Guidelines The **undebg l3tcam** command is the same as the **no debug l3tcam** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug l3unicast

Use the **debug l3unicast** privileged EXEC command to debug the Layer 3 IP unicast manager, which maintains platform-specific data describing the IP forwarding information base (FIB) entries (routes and adjacencies) and ARP table entries. Use the **no** form of this command to disable debugging output.

debug l3unicast

no debug l3unicast

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(4)EA1	This command was first introduced.

Usage Guidelines The **undebug l3unicast** command is the same as the **no debug l3unicast** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug mac-manager

Use the **debug mac-manager** privileged EXEC command to debug the platform-specific MAC address table manager software module. This command debugs the platform-specific part of learning MAC addresses on VLANs and updating the hardware with the necessary information. Use the **no** form of this command to disable debugging output.

debug mac-manager

no debug mac-manager

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(4)EA1	This command was first introduced.

Usage Guidelines The **undebug mac-manager** command is the same as the **no debug mac-manager** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug mac-notification

Use the **debug mac-notification** privileged EXEC command to debug MAC notification events. Use the **no** form of this command to disable debugging output.

debug mac-notification

no debug mac-notification

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(8)EA1	This command was first introduced.

Usage Guidelines The **undebug mac-notification** command is the same as the **no debug mac-notification** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
	show mac address-table notification	Displays the MAC address notification information for all interfaces or the specified interface.

debug met

Use the **debug met** privileged EXEC command to debug the allocation, freeing, and updating of the multicast expansion table (MET) entries. These entries are used by the hardware when forwarding individual IP multicast and fallback-bridged packets to multiple output VLANs. Use the **no** form of this command to disable debugging output.

debug met

no debug met

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(4)EA1	This command was first introduced.

Usage Guidelines The **undebug met** command is the same as the **no debug met** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug mvrdbg

Use the **debug mvrdbg** privileged EXEC command to enable Multicast VLAN Registration (MVR) debugging. Use the **no** form of this command to disable debugging output.

```
debug mvrdbg {all | events | igmpsn | management | ports}
```

```
no debug mvrdbg {all | events | igmpsn | management | ports}
```

Syntax Description

all	Display all MVR activity.
events	Display MVR event handling.
igmpsn	Display MVR Internet Group Management Protocol (IGMP) snooping activity.
management	Display MVR management activity.
ports	Display MVR ports.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(4)EA1	This command was first introduced.

Usage Guidelines

The **undebug mvrdbg** command is the same as the **no debug mvrdbg** command.

Related Commands

Command	Description
show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
show mvr	Displays the current MVR configuration.

debug pagp

Use the **debug pagp** privileged EXEC command to debug Port Aggregation Protocol (PAgP) activity. Use the **no** form of this command to disable debugging output.

debug pagp [**all** | **event** | **fsm** | **misc** | **packet**]

no debug pagp [**all** | **event** | **fsm** | **misc** | **packet**]

Syntax Description	all	(Optional) Enable all PAgP debugging.
	event	(Optional) Enable debugging of PAgP events.
	fsm	(Optional) Enable debugging of the PAgP finite state machine.
	misc	(Optional) Enable miscellaneous PAgP debugging.
	packet	(Optional) Enable PAgP packet debugging.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(4)EA1	This command was first introduced.

Usage Guidelines This command can be entered only from the switch console.
The **undebug pagp** command is the same as **no debug pagp** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
	show pagp	Displays PAgP channel-group information.

debug pbr

Use the **debug pbr** privileged EXEC command to debug policy-based routing (PBR) events. Use the **no** form of this command to disable debugging output.

debug pbr [acl-merge]

no debug pbr [acl-merge]

Syntax Description	acl-merge	(Optional) Enable debugging of the merge of ACLs present in a route-map that is applied to an interface for PBR.
Defaults	Debugging is disabled.	
Command Modes	Privileged EXEC	
Command History	Release	Modification
	12.1(13)EA1	This command was first introduced.
Usage Guidelines	The undebug pbr command is the same as the no debug pbr command.	
Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug pm

Use the **debug pm** privileged EXEC command to debug port manager (PM) activity. The port manager is a state machine that controls all the logical and physical interfaces. All features, such as VLANs, UniDirectional Link Detection (UDLD), and so forth, work with the port manager to provide switch functions. Use the **no** form of this command to disable debugging output.

```
debug pm {all | assert | card | cookies | etherchnl | messages | port | registry | sm | span | split |
vlan | vp}
```

```
no debug pm {all | assert | card | cookies | etherchnl | messages | port | registry | sm | span | split |
vlan | vp}
```

Syntax Description

all	Display all PM debugging messages.
assert	Debug assert messages.
card	Debug line-card related events.
cookies	Enable internal PM cookie validation.
etherchnl	Debug EtherChannel-related events.
messages	Debug PM messages.
port	Debug port-related events.
registry	Debug PM registry invocations.
sm	Debug state-machine related events.
span	Debug spanning-tree related events.
split	Debug split-processor.
vlan	Debug VLAN-related events.
vp	Debug virtual-port related events.



Note

Though visible in the command-line help strings, the **scp** and **pvlan** keywords are not supported.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(4)EA1	This command was first introduced.

Usage Guidelines

The **undebug pm** command is the same as the **no debug pm** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .

debug port-security

Use the **debug port-security** privileged EXEC command to debug the allocation and states of the port security subsystem. Use the **no** form of this command to disable debugging output.

debug port-security

no debug port-security

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(8)EA1	This command was first introduced.

Usage Guidelines The **undebg port-security** command is the same as the **no debug port-security** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
	show port-security	Displays port-security settings for an interface or for the switch.

debug span-session

Use the **debug span-session** privileged EXEC command to debug events occurring in the platform-specific software that implements the Switched Port Analyzer (SPAN) feature. Use the **no** form of this command to disable debugging output.

debug span-session

no debug span-session

Syntax Description This command has no arguments or keywords.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(6)EA1	This command was first introduced.

Usage Guidelines The **undebbug span-session** command is the same as the **no debug span-session** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
	show monitor	Displays SPAN session information.

debug spanning-tree

Use the **debug spanning-tree** privileged EXEC command to debug spanning-tree activities. Use the **no** form of this command to disable debugging output.

```
debug spanning-tree {all | backbonefast | bpdu | bpdu-opt | config | csuf | etherchannel | events
| exceptions | general | mstp | pvst+ | root | snmp | switch | uplinkfast}
```

```
no debug spanning-tree {all | backbonefast | bpdu | bpdu-opt | config | csuf | etherchannel |
events | exceptions | general | mstp | pvst+ | root | snmp | switch | uplinkfast}
```

Syntax	Description
all	Display all spanning-tree debugging messages.
backbonefast	Debug Backbonefast events.
bpdu	Debug spanning-tree bridge protocol data units (BPDUs).
bpdu-opt	Debug optimized BPDU handling.
config	Debug spanning-tree configuration changes.
csuf	Debug cross-stack UplinkFast activity.
etherchannel	Debug EtherChannel support.
events	Debug spanning-tree topology events.
exceptions	Debug spanning-tree exceptions.
general	Debug general spanning-tree activity.
mstp	Debug Multiple Spanning Tree Protocol events.
pvst+	Debug per-VLAN spanning-tree plus (PVST+) events.
root	Debug spanning-tree root events.
snmp	Debug spanning-tree Simple Network Management Protocol (SNMP) handling.
switch	Debug switch shim commands. This shim is the software module that is the interface between the generic Spanning Tree Protocol (STP) code and the platform-specific code of various switch platforms.
uplinkfast	Debug UplinkFast events.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(4)EA1	This command was first introduced.
	12.1(9)EA1	The mstp and csuf keywords were added.

Usage Guidelines The **undebg spanning-tree** command is the same as the **no debug spanning-tree** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
	show spanning-tree	Displays spanning-tree state information.

debug spanning-tree backbonefast

Use the **debug spanning-tree backbonefast** privileged EXEC command to enable debugging of spanning-tree BackboneFast events. Use the **no** form of this command to disable debugging output.

debug spanning-tree backbonefast [**detail** | **exceptions**]

no debug spanning-tree backbonefast [**detail** | **exceptions**]

Syntax Description	detail	(Optional) Display detailed BackboneFast debugging messages.
	exceptions	(Optional) Enable debugging of spanning-tree BackboneFast exceptions.

Defaults Debugging is disabled.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.1(4)EA1	This command was first introduced.

Usage Guidelines This command can be entered only from the switch console.

The **undebg spanning-tree backbonefast** command is the same as the **no debug spanning-tree backbonefast** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
	show spanning-tree	Displays spanning-tree state information.

debug spanning-tree bpdu

Use the **debug spanning-tree bpdu** privileged EXEC command to enable debugging of received and transmitted spanning-tree bridge protocol data units (BPDUs). Use the **no** form of this command to disable debugging output.

debug spanning-tree bpdu [receive | transmit]

no debug spanning-tree bpdu [receive | transmit]

Syntax Description

receive	(Optional) Enable receive BPDU debugging.
transmit	(Optional) Enable transmit BPDU debugging.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(4)EA1	This command was first introduced.

Usage Guidelines

This command can be entered only from the switch console.

The **undebug spanning-tree bpdu** command is the same as the **no debug spanning-tree bpdu** command.

Related Commands

Command	Description
show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
show spanning-tree	Displays spanning-tree state information.

debug spanning-tree bpdu-opt

Use the **debug spanning-tree bpdu-opt** privileged EXEC command to enable debugging of optimized spanning-tree bridge protocol data units (BPDUs) handling. Use the **no** form of this command to disable debugging output.

debug spanning-tree bpdu-opt [detail | packet]

no debug spanning-tree bpdu-opt [detail | packet]

Syntax Description

detail	(Optional) Debug detailed optimized BPDU handling.
packet	(Optional) Debug packet-level optimized BPDU handling.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(4)EA1	This command was first introduced.

Usage Guidelines

This command can be entered only from the switch console.

The **undebug spanning-tree bpdu-opt** command is the same as the **no debug spanning-tree bpdu-opt** command.

Related Commands

Command	Description
show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
show spanning-tree	Displays spanning-tree state information.

debug spanning-tree mstp

Use the **debug spanning-tree mstp** privileged EXEC command to enable debugging of the Multiple Spanning Tree Protocol (MSTP) software. Use the **no** form of this command to disable debugging output.

```
debug spanning-tree mstp {all | boundary | bpdu-rx | bpdu-tx | errors | flush | init | migration |
  pm | proposals | region | roles | sanity_check | sync | tc | timers}
```

```
no debug spanning-tree mstp {all | boundary | bpdu-rx | bpdu-tx | errors | flush | init | migration
  | pm | proposals | region | roles | sanity_check | sync | tc | timers}
```

Syntax Description

all	Enable all the debugging messages.
boundary	Debug flag changes at these boundaries: <ul style="list-style-type: none"> • An MST region and a single spanning-tree region running RSTP • An MST region and a single spanning-tree region running 802.1D • An MST region and another MST region with a different configuration
bpdu-rx	Debug the received MST bridge protocol data units (BPDUs)
bpdu-tx	Debug the transmitted MST BPDUs.
errors	Debug MSTP errors.
flush	Debug the port flushing mechanism.
init	Debug the initialization of the MSTP data structures.
migration	Debug the protocol migration state machine.
pm	Debug MSTP port manager events.
proposals	Debug handshake messages between the designated and root switch.
region	Debug the region synchronization between the switch processor (SP) and the route processor (RP).
roles	Debug MSTP roles.
sanity_check	Debug the received BPDU sanity check messages.
sync	Debug the port synchronization events.
tc	Debug topology change notification events.
timers	Debug the MSTP timers for start, stop, and expire events.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(9)EA1	This command was first introduced.

Usage Guidelines

This command can be entered only from the switch console.

The **undebg spanning-tree mstp** command is the same as the **no debug spanning-tree mstp** command.

Related Commands

Command	Description
show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
show spanning-tree	Displays spanning-tree state information.

debug spanning-tree switch

Use the **debug spanning-tree switch** privileged EXEC command to enable debugging of the software interface between the Spanning Tree Protocol (STP) software module and the port manager software module. Use the **no** form of this command to disable debugging output.

```
debug spanning-tree switch {all | errors | general | helper | pm | rx {decode | errors | interrupt
| process} | state | tx [decode]}
```

```
no debug spanning-tree switch {all | errors | general | helper | pm | rx {decode | errors |
interrupt | process} | state | tx [decode]}
```

Syntax Description

all	Enable all the debugging messages.
errors	Enable debugging of error messages for the interface between the spanning-tree software module and the port manager software module.
general	Enable debugging of general events.
helper	Enable debugging of the spanning-tree helper task, which handles bulk spanning-tree updates.
pm	Enable debugging of port manager events.
rx	Display received bridge protocol data unit (BPDU) handling debugging messages. The keywords have these meanings: decode —Enable debugging of received packets. errors —Enable debugging of receive errors. interrupt —Enable debugging of interrupt service requests (ISRs). process —Enable debugging of process receive BPDUs. state —Enable debugging of spanning-tree port state changes.
tx [decode]	Display transmitted BPDU handling debugging messages.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(4)EA1	This command was first introduced.
12.1(9)EA1	The helper keyword was added.

Usage Guidelines

This command can be entered only from the switch console.

The **undebug spanning-tree switch** command is the same as the **no debug spanning-tree switch** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
	show spanning-tree	Displays spanning-tree state information.

debug spanning-tree uplinkfast

Use the **debug spanning-tree uplinkfast** privileged EXEC command to enable debugging of spanning-tree UplinkFast events. Use the **no** form of this command to disable debugging output.

debug spanning-tree uplinkfast [exceptions]

no debug spanning-tree uplinkfast [exceptions]

Syntax Description	exceptions (Optional) Enable debugging of spanning-tree UplinkFast exceptions.						
Defaults	Debugging is disabled.						
Command Modes	Privileged EXEC						
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>12.1(4)EA1</td> <td>This command was first introduced.</td> </tr> </tbody> </table>	Release	Modification	12.1(4)EA1	This command was first introduced.		
Release	Modification						
12.1(4)EA1	This command was first introduced.						
Usage Guidelines	<p>This command can be entered only from the switch console.</p> <p>The undebg spanning-tree uplinkfast command is the same as the no debug spanning-tree uplinkfast command.</p>						
Related Commands	<table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>show debugging</td> <td>Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands.</td> </tr> <tr> <td>show spanning-tree</td> <td>Displays spanning-tree state information.</td> </tr> </tbody> </table>	Command	Description	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .	show spanning-tree	Displays spanning-tree state information.
Command	Description						
show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .						
show spanning-tree	Displays spanning-tree state information.						

debug sw-vlan

Use the **debug sw-vlan** privileged EXEC command to debug VLAN manager activities. Use the **no** form of this command to disable debugging output.

```
debug sw-vlan {badpmcookies | cfg-vlan {bootup | cli} | events | ifs | management | notification
| packets | registries | vtp}
```

```
no debug sw-vlan {badpmcookies | cfg-vlan {bootup | cli} | events | ifs | management |
notification | packets | registries | vtp}
```

badpmcookies	Debug VLAN manager incidents of bad port manager cookies.
cfg-vlan bootup	Debug config-vlan messages generated when the switch is booting up.
cfg-vlan cli	Debug messages generated when the CLI is in config-vlan mode.
events	Debug VLAN manager events.
ifs	Debug VLAN manager Cisco IOS file system (IFS) error tests.
management	Debug VLAN manager management of internal VLANs.
notification	Debug VLAN manager notifications.
packets	Debug packet handling and encapsulation processes.
registries	Debug VLAN manager registries.
vtp	Debug the VLAN Trunking Protocol (VTP).

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(4)EA1	This command was first introduced.
12.1(9)EA1	The cfg-vlan keyword was added.

Usage Guidelines

The **undebg sw-vlan** command is the same as the **no debug sw-vlan** command.

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
	show vlan	Displays the parameters for all configured VLANs or one VLAN (if the VLAN name or ID is specified) in the administrative domain.
	show vtp	Displays general information about VTP management domain, status, and counters.

debug sw-vlan ifs

Use the **debug sw-vlan ifs** privileged EXEC command to enable VLAN manager Cisco IOS file system (IFS) error tests. Use the **no** form of this command to disable debugging output.

```
debug sw-vlan ifs {open {read | write} | read {1 | 2 | 3 | 4} | write}
```

```
no debug sw-vlan ifs {open {read | write} | read {1 | 2 | 3 | 4} | write}
```

Syntax Description

open	Enable VLAN manager IFS debugging of errors in an IFS file open operation.
read	Enable debugging of errors that occurred when opening the IFS VLAN configuration file in order to read it.
write	Enable debugging of errors that occurred when opening the IFS VLAN configuration file in order to write to it.
read	Enable debugging of errors that occurred when performing an IFS file read operation.
{1 2 3 4}	Specify the file read operation.
write	Enable debugging of errors that occurred when performing an IFS file write operation.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(4)EA1	This command was first introduced.

Usage Guidelines

When determining the file read operation, Operation **1** reads the file header, which contains the header verification word and the file version number. Operation **2** reads the main body of the file, which contains most of the domain and VLAN information. Operation **3** reads type length version (TLV) descriptor structures. Operation **4** reads TLV data.

The **undebug sw-vlan ifs** command is the same as the **no debug sw-vlan ifs** command.

Related Commands

Command	Description
show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
show vlan	Displays the parameters for all configured VLANs or one VLAN (if the VLAN name or ID is specified) in the administrative domain.

debug sw-vlan notification

Use the **debug sw-vlan notification** privileged EXEC command to enable debugging messages that trace the activation and deactivation of Inter-Link Switch (ISL) VLAN IDs. Use the **no** form of this command to disable debugging output.

```
debug sw-vlan notification { accfwdchange | allowedvlanfgchange | fwdchange | linkchange |
modechange | pruningcfgchange | statechange }
```

```
no debug sw-vlan notification { accfwdchange | allowedvlanfgchange | fwdchange |
linkchange | modechange | pruningcfgchange | statechange }
```

Syntax Description

accfwdchange	Enable VLAN manager notification of aggregated access interface STP forward changes.
allowedvlanfgchange	Enable VLAN manager notification of changes to the allowed VLAN configuration.
fwdchange	Enable VLAN manager notification of STP forwarding changes.
linkchange	Enable VLAN manager notification of interface link-state changes.
modechange	Enable VLAN manager notification of interface mode changes.
pruningcfgchange	Enable VLAN manager notification of changes to the pruning configuration.
statechange	Enable VLAN manager notification of interface state changes.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(4)EA1	This command was first introduced.

Usage Guidelines

The **undebug sw-vlan notification** command is the same as the **no debug sw-vlan notification** command.

Related Commands

Command	Description
show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
show vlan	Displays the parameters for all configured VLANs or one VLAN (if the VLAN name or ID is specified) in the administrative domain.

debug sw-vlan vtp

Use the **debug sw-vlan vtp** privileged EXEC command to enable debugging messages to be generated by the VLAN Trunking Protocol (VTP) code. Use the **no** form of this command to disable debugging output.

```
debug sw-vlan vtp {events | packets | pruning [packets | xmit] | xmit}
```

```
no debug sw-vlan vtp {events | packets | pruning [packets | xmit] | xmit}
```

Syntax Description

events	Display general-purpose logic flow and detailed VTP debugging messages generated by the VTP_LOG_RUNTIME macro in the VTP code.
packets	Display the contents of all incoming VTP packets that have been passed into the VTP code from the Cisco IOS VTP platform-dependent layer, except for pruning packets.
pruning	Enable debugging message to be generated by the pruning segment of the VTP code.
packets	(Optional) Display the contents of all incoming VTP pruning packets that have been passed into the VTP code from the Cisco IOS VTP platform-dependent layer.
xmit	(Optional) Display the contents of all outgoing VTP packets that the VTP code requests the Cisco IOS VTP platform-dependent layer to send.
xmit	Display the contents of all outgoing VTP packets that the VTP code requests the Cisco IOS VTP platform-dependent layer to send, except for pruning packets.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(4)EA1	This command was first introduced.

Usage Guidelines

If no further parameters are entered after the **pruning** keyword, VTP pruning debugging messages appear. They are generated by the VTP_PRUNING_LOG_NOTICE, VTP_PRUNING_LOG_INFO, VTP_PRUNING_LOG_DEBUG, VTP_PRUNING_LOG_ALERT, and VTP_PRUNING_LOG_WARNING macros in the VTP pruning code.

The **undebug sw-vlan vtp** command is the same as the **no debug sw-vlan vtp** command.

■ debug sw-vlan vtp

Related Commands	Command	Description
	show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
	show vtp	Displays general information about VTP management domain, status, and counters.

debug udd

Use the **debug udd** privileged EXEC command to display the UniDirectional Link Detection (UDLD) debug messages. Use the **no** form of this command to disable UDLD debugging.

```
debug udd {events | packets | registries}
```

```
no debug udd {events | packets | registries}
```

Syntax Description

events	Enable debugging messages for UDLD process events as they occur.
packets	Enable debugging messages for the UDLD process as it receives packets from the packet queue and tries to send them at the request of the UDLD protocol code.
registries	Enable debugging messages for the UDLD process as it processes registry calls from the UDLD process-dependent module and other feature modules.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(4)EA1	This command was first introduced.

Usage Guidelines

For **debug udd events**, these debugging messages appear:

- General UDLD program logic flow
- State machine state changes
- Program actions for the set and clear ErrDisable state
- Neighbor cache additions and deletions
- Processing of configuration commands
- Processing of link-up and link-down indications

For **debug udd packets**, these debugging messages appear:

- General packet processing program flow on receipt of an incoming packet
- Indications of the contents of the various pieces of packets received (such as type length versions [TLVs]) as they are examined by the packet reception code
- Packet transmission attempts and the outcome

For **debug udd registries**, these categories of debugging messages appear:

- Subblock creation
- Fiber-optic port status changes
- State change indications from the port manager software
- MAC address registry calls

Related Commands

Command	Description
show debugging	Displays information about the types of debugging that are enabled. For syntax information, select Cisco IOS Configuration Fundamentals Command Reference for IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands .
show udd	Displays UDLD administrative and operational status for all ports or the specified port.