APPENDIX A

Debug Commands

This appendix describes the Catalyst 2950-specific **debug** privileged EXEC commands. These commands are helpful in diagnosing and resolving internetworking problems and should be used only with 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 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** | **authsm** | **backend** | **besm** | **core** | **reauthsm**}

no debug dot1x {**all** | **authsm** | **backend** | **besm** | **core** | **reauthsm**}

Syntax Description

all	Enable debugging of all conditions.
authsm	Enable debugging of the authenticator state machine, which is responsible for controlling access to the network through 802.1X-enabled ports.
backend	Enable debugging of the interaction between the 802.1X process and the switch (Remote Authentication Dial-In User Service [RADIUS] client).
besm	Enable debugging of the backend state machine, which is responsible for relaying authentication request between the client and the authentication server.
core	Enable debugging of the 802.1X process, which includes 802.1X initialization, configuration, and the interaction with the port manager module.
reauthsm	Enable debugging of the re-authentication state machine, which manages periodic re-authentication of the client.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(6)EA2	This command was first introduced.

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 **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/Port Aggregation Protocol (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** | **linecard**]

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

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 PAgP interface descriptor block messages.
linecard	(Optional) Keyword to debug Switch-Module Configuration Protocol messages to the line card.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(6)EA2	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, refer to **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 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(6)EA2	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, refer to **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 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 and UniDirectional Link Detection (UDLD), 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** keyword is not supported.

Defaults

Debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(6)EA2	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, refer to **Cisco IOS Configuration Fundamentals Command Reference For IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands**.

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** | **etherchannel** | **events** | **exceptions** | **general** | **pvst+** | **root** | **snmp** | **switch** | **uplinkfast**}

no debug spanning-tree {**all** | **backbonefast** | **bpdu** | **bpdu-opt** | **config** | **etherchannel** | **events** | **exceptions** | **general** | **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.
etherchannel	Debug EtherChannel support.
events	Debug spanning-tree topology events.
exceptions	Debug spanning-tree exceptions.
general	Debug general spanning-tree activity.
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(6)EA2	This command was first introduced.

Usage Guidelines

The **undebug 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, refer to **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** | **events** | **ifs** | **management** | **notification** | **packets** | **registries** | **vtp**}

no debug sw-vlan {**badpmcookies** | **events** | **ifs** | **management** | **notification** | **packets** | **registries** | **vtp**}

Syntax Description

badpmcookies	Display VLAN manager incidents of bad port manager cookies.
events	Debug VLAN manager events.
ifs	Debug VLAN manager 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(6)EA2	This command was first introduced.

Usage Guidelines

The **undebug 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, refer to **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 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(6)EA2	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, refer to **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** | **allowedvlancfgchange** | **fwdchange** | **linkchange** | **modechange** | **pruningcfgchange** | **statechange**}

no debug sw-vlan notification {**accfwdchange** | **allowedvlancfgchange** | **fwdchange** | **linkchange** | **modechange** | **pruningcfgchange** | **statechange**}

Syntax Description

accfwdchange	Enable VLAN manager notification of aggregated access interface Spanning Tree Protocol (STP) forward changes.
allowedvlancfgchange	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(6)EA2	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, refer to **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 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 IOS VTP platform-dependent layer.
xmit	(Optional) Display the contents of all outgoing VTP packets that the VTP code requests the IOS VTP platform-dependent layer to send.
xmit	Display the contents of all outgoing VTP packets that the VTP code requests the 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(6)EA2	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.

Related Commands

Command	Description
show debugging	Displays information about the types of debugging that are enabled. For syntax information, refer to **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 udld

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

debug udld {**events** | **packets** | **registries**}

no debug udld {**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 transmit 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(6)EA2	This command was first introduced.

Usage Guidelines

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

- Sub-block creation
- Fiber-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, refer to **Cisco IOS Configuration Fundamentals Command Reference For IOS Release 12.1 > Cisco IOS System Management Commands > Troubleshooting Commands**.
show udld	Displays UDLD administrative and operational status for all ports or the specified port.