Debug Commands

Use the following commands to debug the Cisco ONS 15540 ESPx. For information on other debug commands refer to the *Cisco IOS Debug Command Reference* document.

debug aps

To debug APS operation, use the **debug aps** command. To disable APS debugging, use the **no** form of this command.

debug aps

no debug aps

Syntax Description

This command has no other arguments or keywords.

Defaults

Disabled

Command Modes

Privileged EXEC

Command History

This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	**Modification**
12.1(10)EV	This command was first introduced.
SV-Release	**Modification**
12.2(18)SV	This command was integrated in this release.
S-Release	**Modification**
12.2(22)S	This command was integrated in this release.

Usage Guidelines

To turn off all debugging, use the **undebug all** command.

Examples

The following example shows how to enable debugging of APS operations.

```
Switch# debug aps
```

Related Commands

Command	**Description**
associate group	Creates or specifies an APS interface group and enters APS configuration mode.
associate interface	Associates wavepatch interfaces for APS splitter protection.
undebug all	Disables all debugging.

debug cdl defect-indication

To enable debugging for the in-band message channel, use the **debug cdl defect-indication** command. To disable debugging for online diagnostics, use the **no** form of this command.

debug cdl defect-indication {**error** | **events** | **periodic**}

no debug cdl defect-indication {**error** | **events** | **periodic**}

Syntax Description

error	Enables debugging for in-band message channel error conditions.
events	Enables debugging for in-band message channel internal software event conditions.
periodic	Enables debugging for in-band message channel periodic events.

Defaults

Disabled

Command Modes

Privileged EXEC

Command History

This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	**Modification**
12.2(18)SV	This command was integrated in this release.
S-Release	**Modification**
12.2(22)S	This command was integrated in this release.

Usage Guidelines

Use this command to enable debugging for the message channel.

To turn off all debugging, use th**e no debug cdl defect-indication co**mmand.

Examples

The following example shows how to enable debugging of background tests for the message channel.

```
Switch# debug cdl defect-indication
```

Related Commands

Command	Description
diag online	Enables online diagnostics for the system.
diag online slot	Enables online diagnostics for a specified slot number.
show cdl defect-indication	Displays cdl defect-indication information.
undebug all	Disables all debugging.

debug cpu

To debug IPC (interprocess communication) initialization and switchover events, use the **debug cpu** command. To disable debugging IPC initialization and switchover events, use the **no** form of this command.

debug cpu {**ehsa** | **intf-sync** | **ipc** | **redundancy** | **sub-ipc**}

no debug cpu {**ehsa** | **ipc** | **redundancy** | **sub-ipc**}

Syntax Description

ehsa	Enables debugging for processor EHSA (enhanced high system availability) services such as hostname, config register, and calendar synchronizing to the standby processor card.
intf-sync	Enables debuggin for interface sync RF events
ipc	Enables debugging for processor IPC (interprocessor communications) initialization and switchover events.
pwd-sync	Enables debugging for password sync RF events
redundancy	Enables debugging for processor card redundancy initialization and operation.
snap	Enables debugging for low level SNAP communication.
sub-ipc	Enables debugging for the IPC channel layer below the IPC level.

Defaults

Disabled

Command Modes

Privileged EXEC

Command History

This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	**Modification**
12.2(18)SV	This command was integrated in this release.
S-Release	**Modification**
12.2(22)S	This command was integrated in this release.

Usage Guidelines

Use this command to enable debugging of IPC initialization and switchover events. To debug redundancy software operations, use the **debug redundancy** command.

To turn off all debugging, use the **undebug all** command.

Examples

The following example shows how to enable redundancy state debugging.

```
Switch# debug cpu redundancy
```

Related Commands

Command	Description
debug redundancy	Enables debugging of redundancy software operation.
undebug all	Disables all debugging.

debug diag online

To enable debugging for online diagnostics, use the **debug diag online** command. To disable debugging for online diagnostics, use the **no** form of this command.

debug diag online [**online-insertion-removal** | **background** | **redundancy**]

no debug diag online [**online-insertion-removal** | **background** | **redundancy**]

Syntax Description

online-insertion-removal	Enables debugging of OIR (online insertion and removal) tests for online diagnostics.
background	Enables debugging of background tests for online diagnostics.
redundancy	Enables debugging of redundancy tests for online diagnostics.

Defaults

Disabled

Command Modes

Privileged EXEC

Command History

This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	**Modification**
12.2(18)SV	This command was integrated in this release.
S-Release	**Modification**
12.2(22)S	This command was integrated in this release.

Usage Guidelines

Use this command to enable debugging for online diagnostics.

To turn off all debugging, use the **undebug all** command.

Examples

The following example shows how to enable debugging of background tests for online diagnostics.

```
Switch# debug diag online background
```

Related Commands

Command	Description
show diag online	Enables online diagnostics for the system.
diag online slot	Enables online diagnostics for a specified slot number.
undebug all	Disables all debugging.

debug driver control ethernet

To enable backplane Ethernet driver debugging, use the **debug driver control ethernet** command. To disable backplane ethernet driver debugging operations, use the **no** form of this command.

debug driver control ethernet {**errors** | **events** | **packets**}

no debug driver control ethernet {**errors** | **events** | **packets**}

Syntax Description

errors	Enables debugging for SRC driver error conditions.
events	Enables debugging for internal software error conditions.
packets	Enables debugging of the backplane Ethernet drive packets.

Defaults

Disabled

Command Modes

Privileged EXEC

Command History

This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	**Modification**
12.2(18)SV	This command was integrated in this release.
S-Release	**Modification**
12.2(22)S	This command was integrated in this release.

Usage Guidelines

Use this command to activate backplane Ethernet driver debugging.

Examples

The following example shows how to activate backplane Ethernet driver error debugging.

```
Switch# debug driver control ethernet errors
```

Related Commands

Command	Description
debug aps	Enables debugging of APS and APS Channel Protocol activity.
debug cpu	Enables debugging of IPC initialization and switchover events.

Command	Description
debug diag online	Enables debugging of the online diagnostics.
debug ports	Enables debugging of optical port activity.
debug redundancy	Enables debugging of redundancy software operation.

debug driver nvram

To enable Cisco ONS 15540 ESPx NVRAM file system debugging, use the **debug driver nvram** command. To disable Cisco ONS 15540 ESPx NVRAM file system debugging operations, use the **no** form of this command.

debug driver nvram {**errors** | **events**}

no debug driver nvram {**errors** | **events**}

Syntax Description

errors	Enables debugging for NVRAM driver error conditions.
events	Enables debugging for internal software events.

Defaults

Disabled

Command Modes

Privileged EXEC

Command History

This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	**Modification**
12.2(18)SV	This command was integrated in this release.
S-Release	**Modification**
12.2(22)S	This command was integrated in this release.

Usage Guidelines

Use this command to enable NVRAM file system platform specific debugging.

Examples

The following example shows how to activate NVRAM file system platform specific debugging.

```
Switch# debug driver nvram errors
```

Related Commands

Command	Description
debug aps	Enables debugging of APS and APS Channel Protocol activity.
debug cpu	Enables debugging of IPC initialization and switchover events.

Command	Description
debug diag online	Enables debugging of the online diagnostics.
debug ports	Enables debugging of optical port activity.
debug redundancy	Enables debugging of redundancy software operation.

debug driver psm

To enable the PSM driver debugging, use the **debug driver psm** command. To disable PSM driver debugging, use the **no** form of this command.

debug driver psm {**errors** | **events**}

no debug driver psm {**errors** | **events**}

Syntax Description

errors	Enables debugging for PSM driver error conditions.
events	Enables debugging for internal software events.

Defaults

Disabled

Command Modes

Privileged EXEC

Command History

This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	**Modification**
12.2(18)SV	This command was integrated in this release.
S-Release	**Modification**
12.2(22)S	This command was integrated in this release.

Usage Guidelines

Use this command to activate the PSM driver debugging.

Examples

The following example shows how to activate the PSM driver error debugging.

```
Switch# debug driver psm errors
```

Related Commands

Command	Description
debug aps	Enables debugging of APS and APS Channel Protocol activity.
debug ports	Enables debugging of optical port activity.

debug driver src

To enable SRC driver debugging, use the **debug driver src** command. To disable SRC driver debugging operations, use the **no** form of this command.

debug driver src {**errors** | **events** | **poll-errors** | **portfail** | **defect-indication** {**errors** | **events** | **periodic**}}

no debug driver src {**error** | **events** | **poll-errors** | **portfail** | **defect-indication** {**errors** | **events** | **periodic**}}

Syntax Description

errors	Enables debugging for NVRAM driver error conditions.
events	Enables debugging for SRC driver events.
poll-errors	Enables debugging for internal software error conditions.
portfail	Enables debugging for port failures.
defect-indication {errors | events | periodic}	Enables debugging for defect indications.

Defaults

Disabled

Command Modes

Privileged EXEC

Command History

This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	**Modification**
12.2(18)SV	This command was integrated in this release.
S-Release	**Modification**
12.2(22)S	This command was integrated in this release.

Usage Guidelines

Use this command to activate SRC driver debugging.

Examples

The following example shows how to activate SRC driver debugging.

```
Switch# debug driver src
```

Related Commands

Command	Description
debug aps	Enables debugging of APS and APS Channel Protocol activity.
debug cpu	Enables debugging of IPC initialization and switchover events.
debug diag online	Enables debugging of the online diagnostics.
debug ports	Enables debugging of optical port activity.
debug redundancy	Enables debugging of redundancy software operation.

debug driver transparent events

To enable transparent driver debugging, use the **debug driver transparent events** command. To disable transparent driver debugging, use the **no** form of this command.

debug driver transparent events

no debug driver transparent events

Syntax Description

This command has no other arguments or keywords.

Defaults

Disabled

Command Modes

Privileged EXEC

Command History

This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	**Modification**
12.2(18)SV	This command was integrated in this release.
S-Release	**Modification**
12.2(22)S	This command was integrated in this release.

Usage Guidelines

Use this command to activate transparent driver debugging.

Examples

The following example shows how to enable the **debug driver transparent** command.

```
switch# debug driver transparent events
```

Related Commands

Command	Description
debug aps	Enables debugging of APS and APS Channel Protocol activity.
debug ports	Enables debugging of optical port activity.

debug oscp

To debug OSCP operations, use the **debug oscp** command. To disable debugging for OSCP operations, use the **no** form of this command.

debug oscp {**events** | **hello-packet** | **transport**} [**wave** *slot*]

no debug oscp {**events** | **hello-packet** | **transport**} [**wave** *slot*]

Syntax Description

events	Enables debugging for OSCP events.
hello-packet	Enables printing of the information contained in the OSCP Hello packets.
transport	Enables debugging for OSCP transport services.
wave *slot*	Specifies the OSC interface on which to enable debugging. (Optional)

Defaults

Disabled

Command Modes

Privileged EXEC

Command History

This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	**Modification**
12.2(18)SV	This command was integrated in this release.
S-Release	**Modification**
12.2(22)S	This command was integrated in this release.

Usage Guidelines

Use this command to enable debugging for OSCP activity.

To disable all debugging, use the **undebug all** command.

Caution This command can generate a significant amount of output and may interfere with other activity on the system once the command is invoked.

Examples

The following example shows how to enable debugging for OSCP events.

```
Switch# debug oscp events
```

```
01:53:59:Control interface Wave1 is going up
01:54:00:OSCP:Adding neighbor on wave Wave1
```

The following example shows how to display information contained in the OSCP Hello packets.

```
Switch# debug oscp hello-packet wave 0
01:53:08:OSCP:Hello at Wave1 Tx, state 2way
01:53:08:  NodeId:0202.0304.0506  Port:10000
01:53:08:  Remote:NodeId:0202.0304.0506  Port:10000
01:53:08:OSCP:Hello at Wave1 Rx, state 2way
01:53:08:  NodeId:0202.0304.0506  Port:10000
01:53:08:  Remote:NodeId:0202.0304.0506  Port:10000
01:53:08:OSCP:Hello event 2wayd
```

Related Commands

Command	Description
show oscp info	Displays OSCP configuration information.
show oscp neighbor	Displays OSCP neighbor information.
show oscp statistics	Displays OSCP activity statistics.
show oscp traffic	Displays OSCP message traffic information.
undebug all	Disables all debugging.

debug ports

To debug port operations, use the **debug ports** command. To disable debugging for port operations, use the **no** form of this command.

debug ports {**connect** | **errors** [*type slot*[/*subcard*[/*port*]]] | **events** [*type slot*[/*subcard*[/*port*]]] | **patch**}

no debug ports {**connect** | **errors** [*type slot*[/*subcard*[/*port*]]] | **events** [*type slot*[/*subcard*[/*port*]]] | **patch**}

Syntax Description

connect	Enables debugging for cross connections.
errors	Enables debugging for internal software error conditions.
type slot[/*subcard*[/*port*]]	Specifies an interface on which debugging is enabled. Valid *type* values are **filter**, **tengigethernetphy**, **thru**, **transparent**, **wave, waveethernetphy, wavepatch, wdm**, and **wdmsplit**. (Optional)
events	Enables debugging for internal software event conditions.
patch	Enables debugging for patch connections.

Defaults

Disabled

Command Modes

Privileged EXEC

Command History

This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	**Modification**
12.1(10)EV	This command was first introduced.
SV-Release	**Modification**
12.2(18)SV	This command was integrated in this release.
S-Release	**Modification**
12.2(22)S	This command was integrated in this release.

Usage Guidelines

Use this command to debug common software errors and events, patch connection activity, and cross connection activity. If the interface option is not specified, debugging is enabled for all interfaces.

To disable all debugging, use the **undebug all** command.

Examples

The following example shows how to enable error debugging for transparent interface 2/0/0.

```
Switch# debug ports errors transparent 2/0/0
```

Related Commands

Command	Description
clear performance history	Configures the encapsulation of the client signal on the transparent interface.
clock rate	Configures a clock rate on a transparent interface.
monitor enable	Enables signal monitoring for certain protocol encapsulations.
patch	Configures patch connections for a shelf.
show connect	Displays optical connection information.
show interfaces	Displays interface information.
patch	Displays optical patch connection configuration.
undebug all	Disables all debugging.

debug redundancy

To debug redundancy operations, use the **debug redundancy** command. To disable debugging for redundancy operations, use the **no** form of this command.

debug redundancy {**ehsa** | **errors** | **fsm** | **kpa** | **msg** | **progression** | **status** | **timer**}

no debug redundancy {**ehsa** | **errors** | **fsm** | **kpa** | **msg** | **progression** | **status** | **timer**}

Syntax Description

ehsa	Enables debugging for early software initialization suspend points associated with EHSA (enhanced high system availability).
errors	Enables debugging for redundancy internal software error conditions.
fsm	Enables debugging for redundancy finite state machine transition events.
kpa	Enables debugging for redundancy keepalive messaging events.
msg	Enables debugging for general redundancy messaging software.
progression	Enables debugging for redundancy internal state progression software.
status	Enables debugging for redundancy internal status notification software.
timer	Enables debugging for redundancy internal timers.

Defaults

Disabled

Command Modes

Privileged EXEC

Command History

This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	**Modification**
12.2(18)SV	This command was integrated in this release.
S-Release	**Modification**
12.2(22)S	This command was integrated in this release.

Usage Guidelines

Use this command to debug redundancy software operations. Use the **debug cpu** command to debug processor card redundancy.

To disable all debugging, use the **undebug all** command.

Caution This command can generate a significant amount of output and may interfere with other activity on the system once the command is invoked.

Examples

The following example shows how to debug finite state machine transition events.

```
Switch# debug redundancy fsm
```

Related Commands

Command	Description
debug cpu	Enables debugging of processor card redundancy.
show redundancy summary	Displays processor card redundancy status and configuration information.
undebug all	Disables all debugging.

undebug all

To disable all debugging, use the **undebug all** command.

undebug all

Syntax Description

This command has no other arguments or keywords.

Defaults

None

Command Modes

Privileged EXEC

Command History

This table includes the following release-specific history entries:

- EV-Release
- SV-Release
- S-Release

EV-Release	Modification
12.1(10)EV	This command was first introduced.
SV-Release	**Modification**
12.2(18)SV	This command was integrated in this release.
S-Release	**Modification**
12.2(22)S	This command was integrated in this release.

Usage Guidelines

Use this command to turn off all debugging.

Examples

The following example shows how to turn off all debugging.

```
Switch# undebug all
```

Related Commands

Command	Description
debug aps	Enables debugging of APS and APS Channel Protocol activity.
debug cpu	Enables debugging of IPC initialization and switchover events.
debug diag online	Enables debugging of the online diagnostics.
debug oscp	Enables debugging of OSCP activity.
debug ports	Enables debugging of optical port activity.
debug redundancy	Enables debugging of redundancy software operation.