

VDSL Commands

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bitswap

To divert the data of a disturbed transmission channel to other channels, use the **bitswap** command in controller configuration mode. To disable bitswapping, use the **no** form of this command.

bitswap
no bitswap

Command Default

Bit swapping is enabled.

Command Modes

Controller configuration (config-controller)#

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.3.1a	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

bitswap line 0/1 commands are not supported in Cisco SD-WAN.

For usage guidelines, see the Cisco IOS XE `bitswap` command.

Examples

The following example shows how to enable bit swapping:

```
Router(config-controller)# bitswap
```

The following example shows how to disable bit swapping:

```
Router(config-controller)# no bitswap
```

controller VDSL

To configure the Very High Bit Rate Digital Subscriber Line (VDSL) controller and enter controller configuration mode, use the **controller VDSL** command in global configuration mode. This command does not have a **no** form.

controller VDSL *slot/subslot/port*

Syntax Description

slot	Slot number of the VDSL controller. Valid numbers are 0 and 1.
subslot	Subslot number of the VDSL controller. The slash mark (/) is required between the slot argument and the subslot argument.
port	Port number of the VDSL controller. Valid numbers are 0 and 1. The slash mark (/) is required between the subslot argument and the port argument.

Command Default

No default behavior or values.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Release 17.2.1v	Qualified for use in Cisco vManage CLI templates.

Usage Guidelines

This command is used to enter VDSL controller configuration mode for the controller in the specified slot, subslot, and port.

The **controller VDSL** command is supported only from global configuration mode. Configuring the command within the system configuration context may result in the following template deployment error:

```
bad value: "VDSL" is not a valid value.
```

Example

The following example shows how to enter VDSL controller configuration mode on the controller in slot 0, subslot 0, and port 0:

```
Device(config)# controller VDSL 0/0/0
```

description (VDSL controller)

To configure a text description for a VDSL controller, use the **description** command in VDSL controller configuration mode. To remove the text description for a VDSL controller, use the **no** form of this command.

description *string*
no description *string*

Syntax Description

string	VDSL controller text description.

Command Default

None

Command Modes

VDSL controller configuration (config-controller).

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco SD-WAN Manager CLI templates.

Usage Guidelines

The Cisco multimode VDSL2 and ADSL1/2/2+ provides 1-port (2-pair) multimode VDSL2 and ADSL2+ WAN connectivity.

Use **description** command to configure a text description for a VDSL controller.

Example

The following example shows how to configure the description "to ISP 1" on the VDSL controller 0/0/0.

```
Device(config)# controller VDSL 0/0/0
Device(config-controller)# description to ISP 1
```

diagnostics DELT (VDSL controller)

To enable Double-Ended Line Testing (DELT) diagnostics mode for a VDSL controller, use the **diagnostics DELT** command in VDSL controller configuration mode. To disable the Double-Ended Line Testing (DELT) diagnostics mode for a VDSL controller, use the **no** form of this command.

diagnostics DELT
no diagnostics DELT

Syntax Description

This command has no keywords or arguments.

Command Default

By default, DELT diagnostics mode is disabled.

Command Modes

VDSL controller configuration (config-controller).

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco SD-WAN Manager CLI templates.

Usage Guidelines

The Cisco multimode VDSL2 and ADSL1/2/2+ provides 1-port (2-pair) multimode VDSL2 and ADSL2+ WAN connectivity.

Double-Ended Line Testing (DELT) is a wideband line testing technique used after a DSL modem has been installed on the subscriber premises. It relies on the equipment on both ends of the line to perform its testing, thus requiring a connected and available DELT-capable CPE.

DELT measures the characteristics of the line by transmitting special test signals from one end to the other, and evaluating the signal received based on knowledge of the signal transmitted from the source.

Use **diagnosticsDELT** command to enable DELT diagnostics mode for a VDSL controller.

Example

The following example shows how to enable DELT diagnostics mode on the VDSL controller 0/0/0.

```
Device(config)# controller VDSL 0/0/0
Device(config-controller)# diagnostics DELT
```

firmware phy filename

To configure the Cisco IOS XE Catalyst SD-WAN device to load the VDSL controller firmware from a designated location, use the **firmware phy filename** command in VDSL controller configuration mode. To remove the configuration, use the **no** form of this command.

firmware phy filename *location:filename*
no firmware phy filename *location:filename*

Syntax Description

location:filename	Specifies the location and file name of VDSL firmware.

Command Default

None

Command Modes

VDSL controller configuration (config-controller).

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco SD-WAN Manager CLI templates.

Usage Guidelines

VDSL2 and ADSL2/2+ routers provide highly reliable WAN connections for remote sites. These interfaces offer cost-effective virtualized WAN connections in both point-to-point and point-to-multipoint designs.

The Cisco multimode VDSL2 and ADSL1/2/2+ provides 1-port (2-pair) multimode VDSL2 and ADSL2+ WAN connectivity.

VDSL controllers have a firmware that can be upgraded separately from the IOS XE firmware. The VDSL controller firmware gets copied to a designated location on Cisco IOS XE Catalyst SD-WAN device. The Cisco IOS XE Catalyst SD-WAN device gets configured to load from the designated location and rebooted for the new firmware to take affect.

Use **firmware phy filename** command to configure the Cisco IOS XE Catalyst SD-WAN device to load the VDSL controller firmware from a designated location.

Example

The following example shows how to configure the Cisco IOS XE Catalyst SD-WAN device to load the VDSL controller firmware gs_39x3_gnu.pkg from bootflash.

```
Device(config)# controller VDSL 0/0/0
Device(config-controller)# firmware phy filename bootflash:gs_39x3_gnu.pkg
```

Table 1: Related Commands

Commands	Description
bitswap	Bit swap.
description	Controller specific description.
diagnostics	Diagnostics DELT.
line-mode	Line mode configuration to select Bonding/Single-wire.
modem	VDSL modem configuration.
operating	Configures auto or specific VDSL operating mode.
sra	Seamless rate adaptation.
sync	xDSL sync preferences.
training	DSL firmware training log.

line-mode bonding

To enable bonding mode on a CPE, use the **line-mode bonding** command in controller configuration mode. To disable the bonding mode, use the **no** form of this command.

line-mode bonding
no line-mode bonding

Syntax Description This command has no keywords or arguments.

Command Default Bonding is not the default mode.

Command Modes Controller configuration (config-controller)#

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.3.1a	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

Use this command when a CPE is expected to operate in bonding mode. The command should be used only on DSL NIM-VAB-A. The configuration fails on other variants of NIM.

Examples

The following example shows how to enable bonding mode:

```
Router(config-controller)# line-mode bonding
```

The following example shows how to disable bonding mode:

```
Router(config-controller)# no line-mode bonding
```

line-mode single-wire line

To enable single-wire (nonbonding) mode on a selected line, use the **line-mode single-wire line** command in controller configuration mode. To disable the mode, use the **no** form of this command.

line-mode single-wire line *line-number*
or
line-mode single-wire line *line-number* **[profile 30a]**

no line-mode single-wire line *line-number*

Syntax Description

line-number	Line number. Valid values are either 1 or 0.
profile 30a	Enables 30a profile on line 1. If profile 30a is not specified, profiles 8a to 17a are enabled on that line.

Command Default

By default, single-wire mode is enabled on line 0 with profiles from 8a to17a enabled.

Command Modes

Controller configuration (config-controller)#

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.3.1a	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

Use this command to configure either line 0 or line 1 in single-wire (non-bonding) mode. The command should be used only on DSL NIM-VAB-A. The configuration fails on other variants of NIM.

For usage guidelines, see the Cisco IOS XE line-mode single-wire line command.

Examples

The following example shows how to enable 30a profile on line 1:

```
Router(config-controller)# line-mode single-wire line 1 profile 30a
```

modem (VDSL controller)

To configure the modem settings for a VDSL controller, use the **modem** command in VDSL controller configuration mode. To remove the modem settings for a VDSL controller, use the **no** form of this command.

modem *modem-settings*
no modem *modem-settings*

Syntax Description

modem-settings	Specifies DSL modem settings.

Command Default

None

Command Modes

VDSL controller configuration (config-controller).

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco SD-WAN Manager CLI templates.

Usage Guidelines

The Cisco multimode VDSL2 and ADSL1/2/2+ provides 1-port (2-pair) multimode VDSL2 and ADSL2+ WAN connectivity.

Modem setting commands allow custom configurations of DSL modem settings to ensure DSL interoperability in different environments. Please consult your Service Provider on required modem settings for the particular SPs network.

Use **modem** command to configure the modem settings for a VDSL controller.

Example

The following example shows how to configure the modem settings to enable the UK-specific Annex M mask on the VDSL controller 0/0/0.

```
Device(config)# controller VDSL 0/0/0
Device(config-controller)# modem customUKAnnexM
```

operating mode

To configure the operating mode for a VDSL controller, use the **operating mode** command in VDSL controller configuration mode. To remove the operating mode for a VDSL controller, use the **no** form of this command.

operating mode { **auto** [**adsl1**] [**adsl2**] [**adsl2+**] | **adsl1** | **adsl2** | **adsl2+** | **ansi** | **vdsl2** }
no operating mode { **auto** [**adsl1**] [**adsl2**] [**adsl2+**] | **adsl1** | **adsl2** | **adsl2+** | **ansi** | **vdsl2** }

Syntax Description

adsl1	Specifies the operating mode as adsl1 (ITU G 992.1).

adsl2	Specifies the operating mode as adsl2 (ITU G 992.3).
adsl2+	Specifies the operating mode as adsl2+ (ITU G 992.5).
ansi	Specifies the operating mode as adsl2/2+ mode, as defined in ITU G.991.1, G.992.3, and G992.5.
auto	Specifies the operating mode as auto.
vdsl2	Specifies the operating mode as vdsl2 (ITU G 993.2).

Command Default

The default operating mode is auto.

Command Modes

VDSL controller configuration (config-controller).

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco SD-WAN Manager CLI templates.
Cisco IOS XE Catalyst SD-WAN Release 17.4.1a	Command qualified for use in Cisco SD-WAN Manager CLI templates. The following command options are qualified: **auto**, **adsl1**, **adsl2**, **adsl2+**, **auto adsl1**, **auto adsl2**, **auto adsl2+**, **vdsl2**.

Usage Guidelines

The Cisco multimode VDSL2 and ADSL1/2/2+ provides 1-port (2-pair) multimode VDSL2 and ADSL2+ WAN connectivity.

You choose the operating mode depending on what DSL technology your ISP uses.

Use **operating mode** command to configure the operating mode for a VDSL controller.

Example

The following example shows how to configure the VDSL controller 0/0/0 operating mode to auto.

```
Device(config)# controller VDSL 0/0/0
Device(config-controller)# operating mode auto
```

sra

To accommodate changes to the total link capacity with the least amount of disruption to communications, use the **sra** command in controller configuration mode.

sra

Command Default

Seamless rate adaptation is disabled.

Command Modes

Controller configuration (config-controller)#

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.3.1a	Command qualified for use in Cisco vManage CLI templates.

Usage Guidelines

sra line 0/1 commands are not supported in Cisco SD-WAN.

For usage guidelines, see the Cisco IOS XE `sra line` command.

Examples

The following example shows how to enable seamless rate adaptation:

```
Router(config-controller)# sra
```

sync interval

To specify an interval for the device to exchange Precision Time Protocol synchronization messages, use the **sync interval** command in PTP port configuration mode. To disable a sync interval configuration, use the **no** form of this command.

sync interval *interval-value*
no sync interval *interval-value*

Syntax Description

interval-value	Value of the interval at which the device sends sync packets. The intervals are set using log base 2 values, as follows: • 4—1 packet every 16 seconds • 3—1 packet every 8 seconds • 2—1 packet every 4 seconds • 1—1 packet every 2 seconds • 0—1 packet every second • -1—1 packet every 1/2 second, or 2 packets per second • -2—1 packet every 1/4 second, or 4 packets per second • -3—1 packet every 1/8 second, or 8 packets per second • -4—1 packet every 1/16 seconds, or 16 packets per second • -5—1 packet every 1/32 seconds, or 32 packets per second • -6—1 packet every 1/64 seconds, or 64 packets per second The recommended value is -6.

Command Default

The default value is 1.

Command Modes

PTP port configuration (config-ptp-port)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.3.1a	Command qualified for use in Cisco vManage CLI templates.

Examples

The following example shows how to configure the PTP sync interval:

```
Device> enable
Device# configure terminal
Device(config)# ptp clock ordinary domain 0
Device(config-ptp-clk)# clock-port slave slaveport
Device(config-ptp-port)# sync interval -4
Device(config-ptp-port)# end
```

sync mode (VDSL controller)

To configure the synchronization mode preference for a VDSL controller, use the **sync mode** command in VDSL controller configuration mode. To remove the synchronization mode preference for a VDSL controller, use the **no** form of this command.

sync mode { **ansi** [**previous**] | **itu** [**previous**] | **none** }
no sync mode { **ansi** [**previous**] | **itu** [**previous**] | **none** }

Syntax Description

ansi	Sets the synchronization mode preference to ANSI over ITU.
itu	Sets the synchronization mode preference to ITU over ANSI.
none	Sets the synchronization mode to no preferred mode.
previous	(Optional) Informs the router to save the current trained mode and to try that mode during the next synchronization.

Command Default

None

Command Modes

VDSL controller configuration (config-controller).

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco SD-WAN Manager CLI templates.

Usage Guidelines

The Cisco multimode VDSL2 and ADSL1/2/2+ provides 1-port (2-pair) multimode VDSL2 and ADSL2+ WAN connectivity.

The CPE tries to synchronize in ANSI and ITU modes and **sync mode** command specifies which mode should be tried first.

Use **sync mode** command to configure the synchronization mode preference for a VDSL controller.

Example

The following example shows how to configure the synchronization mode preference to ANSI on the VDSL controller 0/0/0.

```
Device(config)# controller VDSL 0/0/0
Device(config-controller)# sync mode ansi previous
```

training log filename (VDSL controller)

To modify the location and name of the file in which training logs are stored for a VDSL controller, use the **training log filename** command in VDSL controller configuration mode. To reset the location and name of the file in which training logs are stored for a VDSL controller back to the default, use the **no** form of this command.

training log filename *filename*
no training log filename *filename*

Syntax Description

filename	Specifies location and filename of training logs.

Command Default

None

Command Modes

VDSL controller configuration (config-controller).

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco SD-WAN Manager CLI templates.

Usage Guidelines

The Cisco multimode VDSL2 and ADSL1/2/2+ provides 1-port (2-pair) multimode VDSL2 and ADSL2+ WAN connectivity.

A training log provides you information about the different events that happened during the ADSL training.

Use **training log filename** command to modify the location and name of the file in which training logs are stored for a VDSL controller.

Example

The following example shows how to modify the location and filename on the VDSL controller 0/0/0 to bootflash:VDSLLOG.log.

```
Device(config)# controller VDSL 0/0/0
Device(config-controller)# training log filename bootflash:VDSLLOG.log
```