

PPP Commands

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encapsulation

To set the encapsulation method used by the interface, use the **encapsulation** command in interface configuration mode. To remove the encapsulation, use the **no** form of this command.

encapsulation *encapsulation-type*
no encapsulation *encapsulation-type*

Syntax Description

encapsulation-type	Encapsulation type; one of the following keywords: • **dot1q** *vlan-id* ---Enables IEEE 802.1q encapsulation of traffic on a specified subinterface in VLANs. The *vlan-id* argument is a virtual LAN identifier. • **frame-relay** --Frame Relay (for serial interface). • **ppp** -- PPP (for Dialer interface).

Command Default

NA

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates. The following keywords are qualified: • **dot1q** for GigabitEthernet interface . • **ppp** for Dialer interface.
Cisco IOS XE Catalyst SD-WAN Release 17.3.1a	Command qualified for use in Cisco vManage CLI templates. The following keywords are qualified: • **encapsulation frame-relay** for serial interface.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE encapsulation command.

Examples

The following example shows how to enable frame-relay encapsulation on Serial interface 0:

```
Device(config)# interface Serial 0
Device(config-if)# encapsulation frame-relay
```

The following example shows how to configure Dialer interface 1 for PPP encapsulation:

```
Device(config)# interface Dialer 1
Device(config-if)# encapsulation ppp
```

encapsulation (ATM)

To configure the ATM adaptation layer (AAL) and encapsulation type for an ATM virtual circuit (VC), VC class , VC, bundle, or permanent virtual circuit (PVC) range, use the **encapsulation**command in the appropriate mode. To remove an encapsulation type, use the **no** form of this command.

encapsulation { **aal5mux** *protocol* | **aal5snap** }

no encapsulation

Syntax Description

aal5mux	Specifies the AAL and encapsulation type for multiplex (MUX)-type VCs. A protocol must be specified when you use this encapsulation type.

protocol	Protocol type being used by the multiplex (MUX)-encapsulated VC. Values for the *protocol*argument are as follows: • **appletalk** --AppleTalk protocol. • **bridge ieee8023** --Ethernet LAN protocol. • **decnet** --DECnet protocol. • **frame-relay** --Frame Relay-ATM Network Interworking (FRF.5) on the Cisco MC3810. • **fr-atm-srv** --Frame Relay-ATM Service Interworking (FRF.8) on the Cisco MC3810. • **ip** --IP protocol. • **ipx** --Internet Packet Exchange (IPX) protocol. • **ppp Virtual-Template** *template-number* - Internet Engineering Task Force (IETF)-compliant PPP over ATM. Use the **virtual-template** *template-number* option to identify the virtual template. This keyword is supported on ATM PVCs only. • **pppoe** --PPP over Ethernet. • **voice** --Voice over ATM.
aal5snap	Specifies the AAL and encapsulation type that supports Inverse Address Resolution Protocol (ARP). Logical link control/Subnetwork Access Protocol (LLC/SNAP) precedes the protocol datagram.

Command Default

The global default encapsulation option is **aal5snap**.

Command Modes

ATM PVC configuration (config-if-pvc)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates. The **aal5snap** command option is qualified.
Cisco IOS XE Catalyst SD-WAN Release 17.3.1a	Command qualified for use in Cisco vManage CLI templates. The **aal5mux** *protocol* command option is qualified.

Usage Guidelines

For usage guidelines, see the Cisco IOS XE `encapsulation (ATM)` command.

MUX-Type Encapsulation on a VC Example

```
Device(config)# interface ATM 0/3/0
Device(config-subif)# no shutdown
Device(config-subif)# pvc 0/1
Device(config-if-pvc)# encapsulation aal5mux ppp Virtual-Template 1
```

SNAP Encapsulation Example

```
Device(config)# interface ATM 0/3/0.1 point-to-point

Device(config-subif)# ip address 10.0.0.0 255.255.255.252
Device(config-subif)# ip mtu 1496
Device(config-subif)# no shutdown
Device(config-subif)# pvc 0/100
Device(config-if-pvc)# bridge-dot1q encap 1
Device(config-if-pvc)# encapsulation aal5snap
```

MUX Encapsulation Example

```
Device(config)# interface ATM 0/2/0.1 point-to-point
Device(config-subif)# pvc 0/1
Device(config-if-pvc)# encapsulation aal5mux ppp dialer
```

ppp authentication

To enable at least one PPP authentication protocol and to specify the order in which the protocols are selected on the interface, use the **ppp authentication** command in interface configuration mode. To disable this authentication, use the **no**form of this command.

ppp authentication *protocol1* [*protocol2...*] [**callin**]
no ppp authentication

Syntax Description

protocol1 [*protocol2...*]	At least one of the following keywords: • **chap** : Enables CHAP on a dialer interface. • **pap** : Enables PAP on a dialer interface.
callin	(Optional) Authentication on incoming (received) calls only.

Command Default

PPP authentication is not enabled.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Catalyst SD-WAN Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates. The following command is qualified: **ppp authentication chap callin**
Cisco IOS XE Catalyst SD-WAN Release 17.3.1a	Command qualified for use in Cisco vManage CLI templates. The following command is qualified: **ppp authentication** {**chap** | **pap** | **chap pap**} [**callin**]

Usage Guidelines

For usage guidelines, see the Cisco IOS XE ppp authorization command.

Examples

```
Device(config)# interface Dialer 1
Device(config-if)# encapsulation ppp
Device(config-if)# ppp authentication chap callin
```

```
Device(config)# interface Dialer 1
Device(config-if)# encapsulation ppp
Device(config-if)# ppp authentication chap pap callin
```

ppp chap hostname

To create a pool of dialup routers by specifying a common alias for all routers when authenticating with CHAP (Challenge Handshake Authentication Protocol), use the **ppp chaphostname** command in interface configuration mode. To disable this function, use the no form of the command.

ppp chap hostname *hostname*
no ppp chap hostname

Syntax Description

hostname	The name sent in the CHAP challenge.

Command Default

Disabled. The router name is sent in any CHAP challenges.

Command Modes

Interface configuration (config-if)

Command History

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

Usage Guidelines

The command is available only when **encapsulation ppp** is configured.

The **ppp chap hostname** command allows you to specify a common alias for all routers in a rotary group to use so that only one username must be configured on the dialing routers.

This command is normally used with local CHAP authentication (when the router authenticates to the peer), but it can also be used for remote CHAP authentication.

Note By default, after changing hostnames, an MLP member link does not undergo failure recovery automatically. You must use the **ppp chap hostname** command to define the Multilink PPP (MLP) bundle name on an endpoint. If this command is not configured and the hostname is changed, then a link flap will not return the link back to the bundle.

Examples

```
Device(config)# interface Dialer 1
Device(config-if)# encapsulation ppp
Device(config-if)# ppp chap hostname ntt
```

ppp chap password

To configure a common CHAP secret to be used in responses to challenges from an unknown remote peer in a collection of routers that do not support this command (such as routers running older Cisco IOS software images), use the **ppp chap password** interface configuration command. To disable this function, use the **no** form of this command.

ppp chap password *secret*
no ppp chap password *secret*

Syntax Description

secret	The secret used to compute the response value for any CHAP challenge from an unknown peer.

Command Default

Disabled

Command Modes

Interface configuration (config-if)

Command History

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

Usage Guidelines

The command is available only when **encapsulation ppp** is configured.

This command allows you to replace several username and password configuration commands with a single copy of this command on any dialer interface or asynchronous group interface.

This command is used for remote CHAP authentication only (when routers authenticate to the peer) and does not affect local CHAP authentication.

Examples

```
Device(config)# interface Dialer 1
Device(config-if)# encapsulation ppp
Device(config-if)# ppp chap password ntt
```

ppp ipcp

To configure PPP IP Control Protocol (IPCP) features such as the ability to provide primary and secondary Domain Name Server (DNS) and Windows Internet Naming Service (WINS) server addresses, and the ability to accept any address requested by a peer, use the **ppp ipcp** command in template or interface configuration mode. To disable a PPP IPCP feature, use the no form of this command.

ppp ipcp { **dns request** | **mask request** }
no ppp ipcp

Syntax Description

dnsrequest	Requests the DNS address from the peer.
maskrequest	Requests the subnet mask from the peer.

Command Default No servers are configured, and no address request is made.

Command Modes

Template configuration
Interface configuration (config-if)

Command History

Release	Modification
Cisco IOS XE Release 17.5.1a	Command qualified for use in Cisco vManage CLI templates.

Examples

The following examples show use of the **ppp ipcp** command:

```
Device(config)# interface Dialer1
Device(config-if)# ppp ipcp dns request
Device(config-if)# ppp ipcp mask request
```

The following examples show how to use the **no** form of the **ppp ipcp** command:

```
no ppp ipcp
```

pvc

To create or assign a name to an ATM permanent virtual circuit (PVC), to specify the encapsulation type on an ATM PVC, and to enter ATM virtual circuit configuration mode, use the **pvc** command in interface configuration mode or subinterface configuration mode. To remove an ATM PVC from an interface, use the **no** form of this command.

pvc *vpi/vci*

Syntax Description

vpi	Specifies the ATM network virtual path identifier (VPI) for this PVC. The slash is required. This value defaults to 0 if no value is given for *vpi/*. The arguments *vpi* and *vci* cannot both be set to 0; if one is 0, the other cannot be 0.
vci	Specifies the ATM network virtual channel identifier (VCI) for this PVC. The range of valid values is 0 to 1 less than the maximum value set for this interface by the atm vc-per-vp command. Lower values from 0 to 31 are usually reserved for specific traffic such as: F4 Operation Administration and Maintenance (OAM), SSL VPN Client (SVC) signaling, Interim Local Management Interface (ILMI), and so on.; and should not be used. The VCI value is a 16-bit field in the header of the ATM cell. The VCI value is unique only on a single link, not throughout the ATM network, because it has local significance only. A value that is out of range causes an “unrecognized command” error message. The arguments vpi and vci cannot both be set to 0; if one is 0, the other cannot be 0.

Command Default No PVC is defined.

Command Modes

Interface configuration (config-if)
Subinterface configuration (config-subif)

Usage Guidelines

This command is used to create or assign a name to an ATM permanent virtual circuit (PVC), to specify the encapsulation type on an ATM PVC, and to enter ATM virtual circuit configuration mode.

When a PVC is defined, the global default of the encapsulation command applies (aal5snap). Use the **pvc** command to configure a single ATM VC only, not a VC that is a bundle member.

Command History

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

Examples

The following example specifies the output PCR for an ATM PVC to be 100,000 kbps, the output SCR to be 50,000 kbps, and the output MBS to be 64:

```
Device# config-t
Device(config)# interface ATM 0/2/0
Device(config-if)# no shut
Device(config-if)# interface ATM 0/2/0.1 point-to-point
Device(config-subif)# pvc 0/32
```