Frame-Relay-Native Commands

frame-relay lmi-type

To select the Local Management Interface (LMI) type, use the **frame-relay lmi-type** command in interface configuration mode. To return to the default LMI type, use the **no** form of this command.

frame-relay lmi-type { **ansi** }
no frame-relay lmi-type { **ansi** }

Syntax Description

ansi	Annex D defined by American National Standards Institute (ANSI) standard T1.617.

Command Default

LMI autosense is active and determines the LMI type by communicating with the switch.

Command Modes

Interface configuration (config-if)

Command History

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

Usage Guidelines

For usage guidelines, see the Cisco IOS XE frame-relay lmi-type command.

Examples

The following is an example of the commands you might enter to configure an interface for the ANSI Annex D LMI type:

```
interface Serial 0/1/0
encapsulation frame-relay
frame-relay lmi-type ansi
```

frame-relay intf-type

To configure a Frame Relay switch type, use the **frame-relay intf-type** command in interface configuration mode. To disable the switch, use the **no** form of this command.

frame-relay intf-type [{ **dce** | **dte** }]
no frame-relay intf-type [{ **dce** | **dte** }]

Syntax Description

dce	(Optional) Router or access server functions as a switch connected to a router.
dte	(Optional) Router or access server is connected to a Frame Relay network.

Command Default

The router or access server is connected to a Frame Relay network.

Command Modes

Interface configuration (config-if)

Command History

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

Usage Guidelines

For usage guidelines, see the Cisco IOS XE frame-relay intf-type command.

Examples

The following example configures a DTE switch type:

```
interface Serial 0/1/0
frame-relay intf-type dte
```

Examples

The following example configures a DCE switch type on interface serial 0/0/1:5:

```
interface Serial 0/0/1:5
frame-relay intf-type dce
```

Examples

The following example configures a DTE switch type on MFR interface 1:

```
interface MFR1
frame-relay intf-type dte
```

frame-relay interface-dlci

To assign a data-link connection identifier (DLCI) to a specified Frame Relay subinterface on the router or access server, to assign a specific permanent virtual circuit (PVC) to a DLCI, use the **frame-relay interface-dlci** command in interface configuration mode. To remove this assignment, use the **no** form of this command.

frame-relay interface-dlci *dlci*
no frame-relay interface-dlci *dlci*

Syntax Description

dlci	DLCI number to be used on the specified subinterface. Range: 16-1007

Command Default

No DLCI is assigned.

Command Modes

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

Command History

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

Usage Guidelines

For usage guidelines, see the Cisco IOS XE frame-relay interface-dlci command.

Examples

The following example assigns DLCI 80 to the main interface and then removes it.

```
Router(config)# interface Serial 0/1/0
Router(config-if)# frame-relay interface-dlci 80
Router(config-fr-dlci)# exit
Router(config-if)# interface Serial 0/1/0
Router(config-if)# no frame-relay interface-dlci 80
```

The following example assigns DLCI 100 to a point-to-point serial interface.

```
Router(config)# interface Serial 0/1/0.2
Router(config-if)# encapsulation frame-relay ietf
Router(config-if)# frame-relay interface-dlci 100
```

The following example assigns DLCI 100 on MFR interface 1:

```
Router(config)# interface MFR1
Router(config-if)# frame-relay interface-dlci 100
```

frame-relay multilink bandwidth-class

To specify the criterion used to activate or deactivate a Frame Relay bundle, use the **frame-relay multilink bandwidth-class** command in interface configuration mode. To reset the bandwidth class to the default, use the **no** form of this command.

frame-relay multilink bandwidth-class { **a** | **b** | **c** }
no frame-relay multilink bandwidth-class

Syntax Description

a	Bandwidth class A (single link) criterion will be used to activate or deactivate the Frame Relay bundle. This is the default. • Criterion for activation--One or more bundle links indicate (by issuing a BL_ACTIVATE message) that operational bandwidth is available. When this occurs, the bundle emulates a physical link by issuing a PH_ACTIVATE message to the data-link layer. • Criterion for deactivation--All bundle links are down and issue a BL_DEACTIVATE message, which triggers a PH_DEACTIVATE message to be sent to the data-link layer, indicating that the Frame Relay bundle cannot accept frames.
b	Bandwidth class B (all links) criterion will be used to activate or deactivate the Frame Relay bundle. • Criterion for activation--All bundle links indicate (by issuing a BL_ACTIVATE message) that operational bandwidth is available. When this occurs, the bundle emulates a physical link by issuing a PH_ACTIVATE message to the data-link layer. • Criterion for deactivation--Any bundle link is down and issues a BL_DEACTIVATE message, which triggers a PH_DEACTIVATE message to be sent to the data-link layer, indicating that the Frame Relay bundle cannot accept frames.
c	Bandwidth class C (threshold) criterion will be used to activate or deactivate the Frame Relay bundle. • Criterion for activation--The minimum number of links in the configured bundle issue a BL_ACTIVATE message. When this occurs, the bundle emulates a physical link by issuing a PH_ACTIVATE message to the data-link layer. • Criterion for deactivation--The number of bundle links issuing a BL_ACTIVATE message falls below the configured *threshold* value. When this occurs, a PH_DEACTIVATE message is sent to the data-link layer, which indicates that the Frame Relay bundle cannot accept frames.

Command Default

Frame Relay bundles use bandwidth class A (single link).

Command Modes

Interface configuration (config-if)

Command History

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

Usage Guidelines

For usage guidelines, see the Cisco IOS XE frame-relay multilink bandwidth-class command.

Examples

The following example shows how to specify the class A (single link) bandwidth class to trigger activation or deactivation of the Frame Relay bundle on MFR interface 1:

```
interface MFR1
 frame-relay multilink bandwidth-class a
```

The following example shows how to specify the class B (all links) bandwidth class to trigger activation or deactivation of the Frame Relay bundle on MFR interface 1:

```
interface MFR1
 frame-relay multilink bandwidth-class b
```

The following example shows how to specify the class C (threshold) bandwidth class to trigger activation or deactivation of the Frame Relay bundle on MFR interface 1:

```
interface MFR1
 frame-relay multilink bandwidth-class c
```

interface

To configure an interface type and to enter interface configuration mode, use the **interface** command in the global configuration mode.

interface *type* *number* **.** *subinterface-number*

interface *type* *slot* / *subslot* / *port* **.** *subinterface-number* [**point-to-point**]

no interface *type* *number* **.** *subinterface-number*

no interface *type* *slot* / *subslot* / *port* **.** *subinterface-number* [**point-to-point**]

Syntax Description

type	Type of interface to be configured. See the table below.
number	Port, connector, or interface card number. The numbers are assigned at the factory at the time of installation or when added to a system; they can be displayed with the **showinterfaces** command.
slot	Chassis slot number. Refer to the appropriate hardware manual for slot information. For SIPs, refer to the platform-specific SPA hardware installation guide or the corresponding "Identifying Slots and Subslots for SIPs and SPAs" topic in the platform-specific SPA software configuration guide.
/ *subslot*	Secondary slot number on a SIP where a SPA is installed. The slash (/) is required. Refer to the platform-specific SPA hardware installation guide and the corresponding "Specifying the Interface Address on a SPA" topic in the platform-specific SPA software configuration guide for subslot information.

/ *port*	Port or interface number. Theslash(/)is required. Refer to the appropriate hardware manual for port information. For SPAs, refer to the corresponding “Specifying the Interface Address on a SPA” topics in the platform-specific SPA software configuration guide.
. *subinterface-number*	Subinterface number in the range 1 to 4294967293. The number that precedes the period (.) must match the number to which this subinterface belongs.
point-to-point	(Optional) Specifies a point-to-point subinterface.

Command Default

No interface types are configured.

Command Modes

Global configuration (config)

Command History

Release	Modification
Cisco IOS XE Release Amsterdam 17.2.1v	Commands of the following form were qualified for use in Cisco vManage CLI templates: • **interface ATM 0/3/0** • **interface ATM 0/3/0.1 point-to-point** • **interface Dialer 1** • **interface GigabitEthernet 1** • **interface GigabitEthernet 1.101** • **interface Loopback 100** • **interface Tunnel 10** • **interface VirtualPortGroup 0** • **interface Vlan 1**
Cisco IOS XE Release Amsterdam 17.3.1	Commands of the following form were qualified for use in Cisco vManage CLI templates: • **interface Serial 2/0** • **interface Serial 0/1/0** • **interface Serial 0/1/0.2 point-to-point**

Usage Guidelines

The table below displays the keywords that represent the types of interfaces that can be configured with the **interface** command. Replace the *type* argument with the appropriate keyword from the table.

Table 1: Interface Type Keywords

Keyword	Interface Type
ATM	ATM interface.

Keyword	Interface Type
Dialer	Dialer interface.
GigabitEthernet	1000-Mbps Ethernet interface.
Loopback	Software-only loopback interface that emulates an interface that is always up. It is a virtual interface supported on all platforms. The *number* argument is the number of the loopback interface that you want to create or configure. There is no limit on the number of loopback interfaces that you can create.
Serial	Serial interface.
Tunnel	Tunnel interface; a virtual interface. The *number* argument is the number of the tunnel interface that you want to create or configure. There is no limit on the number of tunnel interfaces that you can create.
Vlan	VLAN interface.
VirtualPortGroup	Virtual Port Group interface.

For more usage guidelines, see interface.

ATM Interface

```
Device(config)# interface ATM 0/3/0
Device(config-if)#
```

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

Dialer Interface

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

GigabitEthernet Interface

```
Device(config)# interface GigabitEthernet 1
Device(config-if)#
```

```
Device(config)# interface GigabitEthernet 1.101
Device(config-if)#
```

Loopback Interface

```
Router(config)# interface Loopback 100
Router(config-if)#
```

Serial Interface

```
Router(config)# interface Serial 2/0
Router(config-if)#

Router(config)# interface Serial 0/1/0
Router(config-if)#

Router(config)# interface Serial 0/1/0.2 point-to-point
Router(config-if)#

Router(config)# interface Serial 0/0/1:5
Router(config-if)#
```

Tunnel Interface

```
Router(config)# interface Tunnel 10
Router(config-if)#
```

Virtual Port Group Interface

```
Router(config)# interface VirtualPortGroup 0
Router(config-if)#
```

VLAN Interface

```
Router(config)# interface Vlan 1
Router(config-if)#
```

interface MFR

To configure a multilink Frame Relay bundle interface, use the **interface MFR** command in global configuration mode. To remove the bundle interface, use the **no** form of this command.

interface MFR *number*
no interface MFR *number*

Syntax Description

number	Number that will uniquely identify this bundle interface. Range: 0 to 2147483647.

Command Default

A Frame Relay bundle interface is not configured.

Command Modes

Global configuration (config)

Command History

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

Usage Guidelines

For usage guidelines, see the Cisco IOS XE interface MFR command.

Examples

The following example shows the configuration of a bundle interface called "MFR 1."

```
interface MFR1
```

ip address

To set a primary or secondary IP address for an interface, use the **ip address** command in interface or sub-interface configuration mode. To remove an IP address or disable IP processing, use the **no** form of this command.

ip address *ip-address* [*mask*]
no ip address [*ip-address*] [*mask*]

Syntax Description

ip-address	IP address.
mask	(Optional) Mask for the associated IP subnet.

Command Default

No IP address is defined for the interface.

Command Modes

Interface configuration (config-if)

Sub-interface configuration (config-subif)

Command History

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

Usage Guidelines

For the usage guidelines, see the Cisco IOS XE ip address command.

Examples

```
Device(config)# interface ATM 0/3/0.1 point-to-point
Device(config-if)# ip address 192.10.6.5
Device(config)# interface ATM 0/3/0.1
Device(config-subif)# ip address 10.0.0.0 255.255.255.252
Device(config)# interface Serial 0/1/0.2
Device(config-if)# ip address 10.1.1.1 255.255.255.0
```

```
Device(config)# interface Serial 0/0/1:5
Device(config-if)# ip address 10.1.1.1 255.255.255.0
Device(config)# interface MFR1
Device(config-if)# ip address 10.4.4.4 255.255.255.0
```

encapsulation frame-relay

To enable Frame Relay encapsulation, use the **encapsulation frame-relay** command in interface configuration mode. To disable Frame Relay encapsulation, use the **no** form of this command.

encapsulation frame-relay [{ **ietf** }]
no encapsulation frame-relay [{ **ietf** }]

Syntax Description

ietf	(Optional) Sets the encapsulation method to comply with the Internet Engineering Task Force (IETF) standard (RFC 1490). Use this keyword when connecting to another vendor's equipment across a Frame Relay network.

Command Default

The default is the encapsulation of Cisco.

Command Modes

Interface configuration (config-if)

Command History

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

Usage Guidelines

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

Examples

In the following example, use the **ietf** keyword if your router or access server is connected to another vendor's equipment across a Frame Relay network to confirm with RFC 1490:

```
interface Serial 0/1/0
encapsulation frame-relay ietf
```

The following example configures Cisco Frame Relay encapsulation on interface serial 0/0/1:5:

```
interface Serial 0/0/1:5
encapsulation frame-relay
```