



# Frame-Relay-Native Commands

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## 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 }
```

<b>Syntax Description</b>	<b>ansi</b> Annex D defined by American National Standards Institute (ANSI) standard T1.617.
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**Command Default** LMI autosense is active and determines the LMI type by communicating with the switch.

**Command Modes** Interface configuration (config-if)

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	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

<b>dce</b>	(Optional) Router or access server functions as a switch connected to a router.
<b>dte</b>	(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
```

<b>Syntax Description</b>	<i>dlci</i> DLCI number to be used on the specified subinterface. Range: 16-1007
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**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

<b>a</b>	<p>Bandwidth class A (single link) criterion will be used to activate or deactivate the Frame Relay bundle. This is the default.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>
<b>b</b>	<p>Bandwidth class B (all links) criterion will be used to activate or deactivate the Frame Relay bundle.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>
<b>c</b>	<p>Bandwidth class C (threshold) criterion will be used to activate or deactivate the Frame Relay bundle.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Criterion for deactivation--The number of bundle links issuing a BL_ACTIVATE message falls below the configured <i>threshold</i> 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.</li> </ul>

### 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**

<i>type</i>	Type of interface to be configured. See the table below.
<i>number</i>	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 <b>showinterfaces</b> command.
<i>slot</i>	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.
<i>/ subslot</i>	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.

<i>/ port</i>	Port or interface number. The slash(/) 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.
<i>. subinterface-number</i>	Subinterface number in the range 1 to 4294967293. The number that precedes the period (.) must match the number to which this subinterface belongs.
<b>point-to-point</b>	(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: <ul style="list-style-type: none"> <li>• <b>interface ATM 0/3/0</b></li> <li>• <b>interface ATM 0/3/0.1 point-to-point</b></li> <li>• <b>interface Dialer 1</b></li> <li>• <b>interface GigabitEthernet 1</b></li> <li>• <b>interface GigabitEthernet 1.101</b></li> <li>• <b>interface Loopback 100</b></li> <li>• <b>interface Tunnel 10</b></li> <li>• <b>interface VirtualPortGroup 0</b></li> <li>• <b>interface Vlan 1</b></li> </ul>
Cisco IOS XE Release Amsterdam 17.3.1	Commands of the following form were qualified for use in Cisco vManage CLI templates: <ul style="list-style-type: none"> <li>• <b>interface Serial 2/0</b></li> <li>• <b>interface Serial 0/1/0</b></li> <li>• <b>interface Serial 0/1/0.2 point-to-point</b></li> </ul>

**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.

**Usage Guidelines** Starting from Cisco IOS XE Catalyst SD-WAN Release 17.15.1a, size limit for interface is within the range 1 to 31 for interface commands.

## Usage Guidelines

Table 1: Interface Type Keywords

Keyword	Interface Type
<b>ATM</b>	ATM interface.
<b>Dialer</b>	Dialer interface.
<b>GigabitEthernet</b>	1000-Mbps Ethernet interface.
<b>Loopback</b>	Software-only loopback interface that emulates an interface that is always up. It is a virtual interface supported on all platforms. The <i>number</i> 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.
<b>Serial</b>	Serial interface.
<b>Tunnel</b>	Tunnel interface; a virtual interface. The <i>number</i> 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.
<b>Vlan</b>	VLAN interface.
<b>VirtualPortGroup</b>	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
```

<b>Syntax Description</b>	<i>number</i>   Number that will uniquely identify this bundle interface. Range: 0 to 2147483647.
<b>Command Default</b>	A Frame Relay bundle interface is not configured.
<b>Command Modes</b>	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	
<i>ip-address</i>	IP address.
<i>mask</i>	(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

<b>ietf</b>	(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.
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### 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

```