# Interface Configuration

# Table of Contents

# Chapter 1 Overview

Information in summarization will help users to know the types of interfaces supported by our router, and to know configuration information about different interfaces.

If you want to know more details about interface instructions, please refer to *Interface Configuration Commands*. If you want to read documents about other instructions in this article, refer to other parts in this manual.

This summarization includes general information suitable to all types of interfaces. Related contents are shown in the following:

## 1.1 Supported Interface Types

For the information about a type of interface, please refer to the format below:

| Types of interface | Task | Content for reference |
|---|---|---|
| LAN interface | Configuring the Ethernet interface<br>Configuring the fast-Ethernet interface | “Configuring the LAN interface” |
| Serial interface | Configuring the synchronization serial interface<br>Configuring the low-speed serial interface | “Configuring the serial interface” |
| Logic interface | Loopback interface<br>Null interface<br>Dial interface<br>Virtual template and virtual access interface<br>Multilink interface<br>Tunnel interface<br>Sub-interface | “Configuring the logic interface” |
| E1interface | Configuring the channel E1interface | “Configuring the E1 interface” |
| T1interface | Configuring the channel T1interface | “Configuring the T1 interface” |
| PRI interface | Configuring thePRI interface | “Configuring the PRI interface” |
| BRI interface | Configuring the BRI interface | “Configuring the BRI interface” |
| DTU interface | Configuring the DTU interface | “Configuring the DTU interface” |
| MODEM interface | Configuring the MODEM interface | “Configuring the MODEM interface” |

Our routers support two types of interfaces: the physical interface and the virtual interface. Types of physical interface depend on standard communication interfaces and interface cards or interface modules installed on the router. The virtual interface include sub-interface and logic interface. sub-interface is derived from physical interface, if you want to know more details ,please refer to “ introduction of

sub-interface". Logical interface does not exist corresponding physical interface, it needs user to create by hands.

Physical interfaces of our routers include:

- Ethernet
- quick ethernet
- synchronization serial
- lowspeed serial
- asychronism serial
- channel E1
- channel T1
- ISDN BRI interface
- ISDN PRI interface
- DTU interface
- asychronism MODEM interface

Logical interfaces Supported by our routers include

- Back loop interface
- null interface
- dial interface
- Virtual template and virtual access interface
- Multilike interface
- Tunnel interface
- Sub-interface

## 1.2 Introduction of Interface Configuration

The configurations below are suitable to all interfaces. You should configure by steps below in overall configuration mode.

- You begin to configure interface after entering interface configure mode by "interface" instruction, prompt of router change to "config", adding the brief name of interface you will configure. You should use these interfaces by serial number, these numbers are assigned when out of product line or at the time that interface card was installed into system. You can use "show interface "to show these interfaces. Every interface will provide his own state, just like photos below:

  Router#show interface

Serial 1/0 is administratively down, line protocol is down

Hardware is SCC Mode=Sync,Speed=64000

DTR=UP,DSR=DOWN,RTS=DOWN,CTS=DOWN,DCD=DOWN

MTU 1500 bytes, BW 64 kbit, DLY 20000 usec

Encapsulation HDLC, loopback not set

Keepalive set(10 sec)

If you want to configure serial interface 1/0, you should input contents as follows:

interface serial 1/0

Now, router prompts “config_s1/0”。

**Notes**:

you can not add null space between interface types and interface serial number. for an example, serial 1/0 or serial 2/0 both can be accepted by router.

- you can configure interface configure instructions to current interface in interface configuration mode. These instructions define negotiations and programs to interface. These instructions will last for always until out of interface configuration mode or switch to another interface.

- once finished interface configurations ,you can use “show” to test interface state ,this instruction is discussed in “monitor and maintain interface”.

**Notes:**

Configure channel E1 interface need other steps. When to configure channel T1 or E1, you need to define channel and time interval made into channel first. You can use controller E1 and channel-group configure instructions; then use “interface serial “to configure serial interface.

# Chapter 2 Interface Configuration

## 2.1 Configurng the Interface's Public Attributes

Instructions below can be executed in any kind interface, to configure interface public attribute . You can configure such public attribute,including:

### 2.1.1 Overview

1. Adding Discription

It is helpful to remember interface content to add descriptions about interface. This discription is only a interface note, and it help users to know uses of interface but not affect any function of interface. This discription will appear in output below: **show running-config and show interface**。If you want to add a discription to any interface, use instruction below in interface configuration mode.

| Command | Purpose |
|---|---|
| **description** *string* | Add descriptions to current cinfigure interface |

For an example of adding descriptions to interface, refer to "examples of interface descriptions".

2. Setting the Bandwidth

Father protocol use band width to decide operation. You can use instructions below to set band width for interface.

| Command | Purpose |
|---|---|
| **bandwidth** *kilobps* | Set band width for current interface |

This setting is only a route parameter, it will not affect communication speed of a physical interface.

3. Setting the Time Delay

Father protocol use time delay to decide operation. You can use instructions below to set time delay for interface.

| Command | Purpose |
|---|---|
| **delay** tensofmicro *seconds* | Set band width for current interface |

The setting of time delay is only a parameter, it will not affect real time delay of a interface.

4. Resizing MTU

There is a default MTU of each interface. This default is often 1500 bytes. In serial interface, MTU changes as settings, but it can not be less than 68 bytes. You can use instructions below to resize MTU:

| Command | Purpose |
|---|---|
| **mtu** *bytes* | Set MTU for current interface |

## 2.1.2 Monitoring and Maintaining the Interface

1. Browsing the interface's state

Our routers support those commands to display interface's information, including the version ID of hardware and software, and the interface's state. The following table presents you some interface monitor commands:

| Command | Purpose |
|---|---|
| **show interface** [**type** *slot/interface*] | Displays the state of a interface. |
| **show running-config** | Displays the current settings. |
| **show version** | Displays the hardware configuration, software versions, names and sources of configuration files, and startup mirror. |

2. Initializing and deleting the interface

The logic interface can be dynamically created and deleted, so it is with the sub-interface and the channelized interface. If some physical interfaces cannot be dynamically deleted, you can resume the default settings of interfaces. In global configuration mode, run the following command to initialize and delete an interface:

| Command | Purpose |
|---|---|
| **no interface type** [*slot/interface*] | Initializes a physical interface or deletes a virtual interface. |

3. Closing and restarting the interface

One interface and all its functions can be forbidden and it will be displayed as an unavailable one by all monitor commands. This piece of information can be sent by dynamic routing protocols to other routers. Any routing modification does not relate with this interface. As to the serial interface, stopping it causes the reduction of DTR signals.

Run the following commands in interface configuration mode to disable an interface and then restart it:

| Command | Purpose |
|---|---|
| **shutdown** | Disables an interface. |
| **no shutdown** | Restarts an interface. |

## 2.2 Configuring the Ethernet Interface

This chapter will discuss how to configure Ethernet interface. The router support 10Mbps Ethernet interface and 100Mbps quick Ethernet interface. Details are following, the first step is necessary, other steps are optional.

### 2.2.1 Appointing the Ethernet or Fast-Ethernet Interface

You can input instructions following in overall situation configure mode to enter the mode of ethernet interface configuration

| Command | Purpose |
|---|---|
| **interface ethernet** *slot/interface* | Enter the mode of ethernet interface configuration |
| **interface fastethernet** *slot/interface* | The mode of quick ethernet interface configuration |

"show interface Ethernet" can display Ethernet interface state. show interface Ethernet can display quick Ethernet interface state.

### 2.2.2 Configuring the 100Mbps-Ethernet Interface

Our routers'fast ethernet interface support routers, hubs and switchs with 10Mbps and 100Mbps or with 100BaseT or 10BaseT interface. It can support 10Mbps and 100Mbps auto-adapted speed, that is to say, it can choose a fit speed according to connecting equipment. The configuration courses from management are following:

| Command | Purpose |
|---|---|
| **configure** | Enters the mode of overall configuration. |
| **interface fastethernet** *slot/interface* | Enters quick Ethernet configuration mode. |
| **ip address address** *subnet-mask* | Sets the IP address and mask on an interface. |

1. Configuring the speed of quick Ethernet

The speed of quick Ethernet can realize auto or through configuring interface:

| Command | Purpose |
|---|---|
| **speed** {**10|100|auto**} | Set speed to 10M,100M or auto |
| **no speed** | Renew to default ,speed is auto |

2. Configuring the duplex mode of fast Ethernet

Duplex mode of quick Ethernet can realize auto or through configuring interface:

| Command | Purpose |
|---|---|
| **duplex half** | Set to semi-duplex mode |
| **duplex full** | Set to full-duplex mode |
| **no duplex** | Renew to default, duplex mode is auto |

## 2.3 Configuring Serial Interface

This part will introduce how to configure serial interface, Details about hardware , please refer to “hardware install and configure”. Details about serial interface instruction ,please refer to “interface instructions”, Other instructions documents can lookup from instructions index. The content are:

### 2.3.1 Configuring the Synchronization Serial Interface

Steps are following, the first step is necessarry, others are optional.

For examples ,refer to “ examples of interface configurations”.

1. Appointing the sychronization serial interface

You can input instructions below to appoint synchronization serial interface and enter the mode " interface configuration" in "overall situation configuration" mode.(if it is a asynchronism card, you should replace “serial” by “async.”

| Command | Purpose |
|---|---|
| **interface serial** *slot/interface* | Enter” interface configuration” |
| **interface serial** *slot/interface*: **channel-group** | Enter” channel E1 interface configurations” |

2. Setting the encapsulation of sychronization serial interface

If default , sychronization serial interface take HDLC encapsulation. It provides “synchronization framing” and “error checking “ of HDLC in mode of without windows or re-transmit. Sychronization serial interface support following protocols:

- HDLC
- Frame Relay
- PPP
- ·X.25
- SDLC

You can set encapsulation protocol through following instructions in the mode of interface configuration:

| Command | Purpose |
|---|---|
| **encapsulation** {**hdlc \|frame-relay \| ppp \|x25\|sdlc**} | Configure synchronization serial encapsulation protocol |

The kind of encapsulation should depend on practical application. You can also get knowledge in “interface configuration instructions”.

### 2.3.2 Configuring the Low-Speed Serial Interface

This part will introduce to how to configure low speed serial interface, you can get an example form " examples of low speed serial interface".

Low speed serial interface often support synchronization and asynchronism , you can use following instructions to choose one way:

| Command | Purpose |
|---|---|
| **physical-layer mode** {**sync \|async**} | Choose "synchronization" or "asynchronism" |

In asynchronism mode ,the interface will support all instructions on standard asynchronism interface. The default is synchronization .If you want to change from asynchronism to synchronization, you can use following instructions in interface configurations mode:

| Command | Purpose |
|---|---|
| **no physical-layer mode** | Going back to default-- synchronization |

You can configure its speed in the interface, use following instructions in interface configurations mode:

| Command | Purpose |
|---|---|
| **physical-layer speed** *speed* | Set interface speed |

The speed values supported by asynchronism or synchronization are following:

| Synchronization interface | Asynchronism interface |
|---|---|
| 1200，2400，4800，9600，14400，19200，38400， 57600，64000，115200，128000，256000，512000,1024000，2048000 | 1200，2400，4800，9600，14400，19200，38400，57600，115200 |

### 2.3.3 Configuring Physical Connection Attributes of Low-Speed Serial Interfaces

The sampling mode of the receiver terminal and the transmitter terminal of the serial interface card can be the rising edge or the falling edge of the clock. If the default settings cannot run when the interface card interconnects with the interface cards of other manufacturer, you can configure the physical connection attributes of the serial interface to adapt to the physical connection mode of other manufactures' serial interfaces.

| Command | Purpose |
|---|---|
| **physical-layer sampling { rising \| falling, rrising \| rfalling}** | Designates the transmission/reception sampling mode. |

See the description of the following parameters:

| Parameter | Purpose |
|---|---|
| **rising** | Means that the transmitter terminal samples at the rising edge (default setting). |
| **falling** | Means that the transmitter terminal samples |

| | |
|---|---|
| | at the falling edge. |
| **rrising** | Means that the receiver terminal samples at the rising edge (default setting). |
| **rfalling** | Means that the receiver terminal samples at the falling edge. |

The clock of the transmitter terminal can be the clock source mode of the local system or the path-taking clock mode.

| Command | Purpose |
|---|---|
| **physical-layer extclk {internal \| external}** | Designates the transmission clock source mode, which is **internal** by default. |

See the explanation of related parameters:

| Parameter | Purpose |
|---|---|
| **internal** | Means that the transmission clock is the internal BRGO clock (default settings). |
| external | Means that the clock is the external clock. |

### 2.3.4 Configuring Reverse Telnet

You first designate an interface to the asynchronous mode and then run the following command in interface configuration mode:

| Command | Purpose |
|---|---|
| **async mode interactive reverse-telnet** | Configures the interface to allow the reverse Telnet login control. |

## 2.4 Configuring the E1 Interface

There are two configurations to E1 interface:

- Use as channelized E1 interface

  Interface can be divided into 31 time intervals physically , you can divide them into some groups as you like, every tied group will be served as a interface, its logic features is the same as synchronization serial interface, support PPP, frame relay, LAPB , X.25 and etc. link layer protocols.

- Use as unchannelized E1 interface

  This interface can be seen as a 2Mbps G.703 synchronization serial interface, support PPP, frame relay, LAPB , X.25 and etc. link layer protocols.

You need to firstly input “controller E1” in "overall situation configuration" mode to configure E1 interface.

| Command | Purpose |
|---|---|
| **controller E1** <*slot*>/<*group*> | Configure E1 interface.<br>Slot is serial number E1 controller locating<br>Group is line serial number to E1 controller |

for an example:

Router_config#controller E1 2/0
Router_config_controller_E1_2/0#

### 2.4.1 Configuring E1 interface work mode

Default is Channelized , but you can change to unchannelized by “unframed”.

| Command | Purpose |
|---|---|
| unframed | Configure to “unchannelized” |
| no unframed | Configure to “ Channelized” |

for an example:

Router_config#controller E1 2/0
Router_config_controller_E1_2/0# unframed
Router_config_controller_E1_2/0# no unframed

### 2.4.2 Configuring E1 interface frame verify mode

E1 interface support” CRC32 verify” to physical frame, default is “ no verify” :

| Command | Purpose |
|---|---|
| **framing crc4** | Configure E1 interface frame verify mode into 4bytes “CRC verify” |
| **no framing**<br>**framing no-crc4** | Configure E1 interface without frame verify |

### 2.4.3 Configuring E1 interface line coding/decoding format

E1 interface line support two coding/decoding format: AMI and HDB3

Default is HDB3 .

| Command | Purpose |
|---|---|
| **linecode ami** | configure E1 interface line coding/decoding format into AMI |
| **no linecode or linecode hdb3** | configure E1 interface line coding/decoding format INTO HDB3 |

### 2.4.4 Configuring E1 interface clock mode

When E1 is used as synchronization interface, there are two work modes: “DTE” and “DCE”, you need to choose line clock also. When E1 interfaces of two routers are directly connected , it is necessary to let two interfaces work at “DTE” OR “DCE”; when E1 of a router is connected into a switch ,because switch is a “DCE” device, E1 of a router need to work at “DTE” mode.

The default work mode of E1 is DTE.

| Command | Purpose |
|---|---|
| **clock interval** | Configure E1 to “DCE”, use synchronization in chip. |
| **clock external** | Configure E1 to “DTE”, use line asynchronism. |

### 2.4.5 Configuring E1 interface back-loop transinterfaceation mode

In remote back-loop transinterfaceation mode, E1 will send back message from the tunnel from which it receives the message.

| Command | Purpose |
|---|---|
| **loopback local** | Configure E1 to remote loopback mode |
| **no loop** | Cancel remote loopback setting |

### 2.4.6 Configuring E1 send pulse mode

Choose send pulse mode. When cable is 120Ω twisted-pair, choose Cable 120.

Default is 75Ω coax cable, according with “ITU-T G.703”. They send pulse differently.

| Command | Purpose |
|---|---|
| **cable 120** | Configure E1 interface cable to “120Ω twisted-pair” . |
| **no cable** | Default is 75Ω coax cable. |

### 2.4.7 disabled E1 interface line

You can disabled some E1. Just make all lines state on interface is “down”.

| Command | Purpose |
|---|---|
| **shutdown** | Disabled E1 interface line |
| **no shutdown** | Restart E1 interface line |

for an example:

Router_config#controller E1 2/0

Router_config_controller_E1_2/0#shutdown

Router_config_controller_E1_2/0#no shutdown

### 2.4.8 Configuring E1 interface channel-group parameter

Channel-group is tunnel number of E1, ranging from 0-30, timeslot is time interval number of E1, ranging from 1-31. Tunnel can use any indistributive timslot, and can group timeslot free. New interface will form after successfully configuring E1.

“no channel-group” will clear channel-group timeslots binding ,the corresponding interface will delete also.

| Command | Purpose |
|---|---|
| **channel-group channel-group timeslots** { *number* \| | Binding timeslots of E1 to channel-group |

| | |
|---|---|
| *number1-number2* } [*number* \| *number1-number2 ...* ] | |
| **no channel-group channel-group** | Cancel channel-group timeslots binding |

for an example:

Router_config#controller E1 2/0

Router_config_controller_E1_2/0#channel 5 timeslots 18，11-13，20，22，30-28，24-25

Router_config_controller_E1_2/0#interface s0/0:5

Router_config_interface_s1/0:5#

## 2.4.9 Configuring E1 interface parameter

In Channelized mode, after configuring E1 channel-group parameter, a new interface will appear. Its logic characters are the same as synchronization. Its name is " serial<slot>/<group>:<channel-group>", and <slot> and <group> are consistent with <slot> and <group> in "controller E1 <slot>/<group>".

In Unchannelized mode, after configuring E1 channel-group parameter, a new interface will appear. Its name is serial<slot>/<group>:0

You can encapsulate PPP, frame relay, HDLC , SDLC ,X.25 and etc.line layer protocols on interface.

for an example:

in Chanelized mode:

Router_config#controller E1 2/0

Router_config_controller_E1_2/0#channel 1 timeslots 1-31

Router_config_controller_E1_2/0#int s0/0:1

Router_config_controller_s1/0:1#enca fr

Router_config_controller_s1/0:1#ip add 130.130.0.1 255.255.255.0

In Unchannelized mode

Router_config#controller E1 2/0

Router_config_controller_E1_2/0#unframed

Router_config_controller_E1_2/0#int s0/0:0

Router_config_controller_s1/0:0#enca fr

Router_config_controller_s1/0:0#ip add 130.130.0.1 255.255.255.0

## 2.4.10 Configuring Tx FIFO of E1 module in UNFRAME mode

When the channel of E1 module worked in UNFRAME mode, the user can change the size of the E1 channel's Tx FIFO to use PCI more effective.The base rule is that the more E1 modules the less Tx FIFO size.The range of it is from 1 to 63.The default Tx FIFO size is 8.Only NM-1CE1 , NM-2CE1 and NM-4CE1 support the command.

example:

Router_config#controller E1 2/0

Router_config_controller_E1_2/0#unframed

Router_config_controller_E1_2/0#txfifo 48

## 2.5 Configuring the Logic Interface

This part will introduce how to configure logic interface, include:

### 2.5.1 Configuring the Null Interface

Software supports a null interface. It is like a null equipment applied to mass operation systems. It will be in effect ,but will not transmit and receive data.

A only instruction “no ip unreachable” can be used on null interface. Null interface provide a optional way to filter communication, you can route a unexpected communication to null interface to avoid inordinate uses to visiting control listings.

You can appoint null interface through instructions below in "overall situation configuration" mode.

| Command | Purpose |
|---|---|
| **interface null 0** | Enter “null interface configuration” mode |

ip route 192.168.20.0 255.255.255.0 null 0

Null interface can be used as a parameter to any instruction used interface types. For an example: to configure a null interface to IP route “192.168.20.0”.

ip route 192.168.20.0 255.255.255.0 null 0

### 2.5.2 CONFIGURING loopback interface

Loopback interface is a logic interface, it will be in effect for always, and permit BGP session to run always even shutting off interface to out. You can use a loopback interface as a terminal address , that can be used to BGP sessions and etc. .

When other router tries to access this loopback , you should configure a dynamic route protocol to spread route including loopback interface address.

Message routed to loopback interface is routed back again to router and disposed in local; and the message whose target ip-address is not ip-address of loopback will be deleted. That is to say that loopback interface is still used as a null interface.

To appoint a loopback interface , enter the mode " interface configuration" ,use following instructions in "overall situation configuration" mode.

| Command | Purpose |
|---|---|
| **interface loopback number** | Enter to loopback interface configuration mode |

### 2.5.3 CONFIGURING interface dialer

Interface dialer is a logic interface , it can configure public dial configurations of multiple physical interfaces to a virtual interface, to setup a relation between physical interfaces and a interface dialer to manage multiple interfaces at the same time.

You can use following instructions to configure interface dialer:

| Command | Purpose |
|---|---|
| **interface dialer** *number* | Enter interface dialer configuration mode |
| **dialer rotary-group** *number* | setup a relation between physical interfaces and a interface dialer |

### 2.5.4 CONFIGURING Virtual template and Virtual access

Virtual template and virtual access are used together. Virtual access is dynamic created depend on protocol need, its configuration information derives from configurations of virtual template . Virtual template and virtual access are often used in special conditions as protocol transition (PPP over X.25, Multilink PPP and etc.).

You can define Virtual template use following instruction:

| Command | Purpose |
|---|---|
| **Interface virtual-template** *number* | Configure virtual template |

### 2.5.5 CONFIGURING Multilink interface

Mulitlink is a interface defined for Multilink PPP. This interface is usually used to serial interface Multilink PPP.

You can define multilink interface through following instructions:

| Command | Purpose |
|---|---|
| **Interface multilink** *number* | Configure multilink interface |

### 2.5.6 CONFIGURING Tunnel interface

Tunnel interface is defined for some encapsulation protocols. Current version support GRE/IP encapsulation protocol.

You can input instructions below to enter the mode " interface configuration" to appoint a Tunnel interface in "overall situation configuration" mode.

| Command | Purpose |
|---|---|
| **Interface Tunnel** *number* | Configure Tunnel interface |

# Chapter 3 Examples of Interface Configuration

## 3.1 Examples of the Interface's Common Attribute Configuration

### 3.1.1 Example for Starting Interface Configuration

The following example shows how to start interface configuration on a serial interface. The PPP protocol is encapsulated on serial interface 1/0.

```
!
interface serial 1/0
 encapsulation ppp
!
```

### 3.1.2 Example for Interface Description

The following example shows how to add a description for an interface.

```
!
interface ethernet 1/1
 description First Ethernet in network 1
 ip address 192.168.1.23 255.255.255.0
!
```

### 3.1.3 Example of Interface Shutdown

1. Shutting down the Ethernet interface in slot1

```
!
interface ethernet 1/1
 shutdown
!
```

2. Restarting the interface

```
!
interface ethernet 1/1
 no shutdown
!
```

3. Disabling an E1 channel

```
!
interface serial 1/3:23
 shutdown
```

!

## 3.2 Example for Serial Interface Configuration

### 3.2.1 Example for Hi-Speed Interface Configuration

The following example shows how to designate PPP encapsulation on interface 1/0.

```
!
interface serial 1/0
 encapsulation ppp
!
```

### 3.2.2 Example for Low-Speed Serial Interface

1. Changing serial interface 1/0 from the synchronous mode to the asynchronous mode

```
!
interface serial 1/0
 physical-layer mode async
!
```

2. Changing serial interface 1/0 from the asynchronous mode to the default synchronous mode

```
!
interface serial 1/0
 physical-layer mode sync
!
```

Or

```
!
interface serial 1/0
 no physical-layer mode
!
```

3. Configuring the typical asynchronous serial interface

```
!
interface serial 1/0 (Note: the syntax is inter async 0/0 when the card is the 16 asynchronous card)
 physical-layer mode async
 ip address 192.168.1.1 255.255.255.0
 encapsualtion ppp
!
```

4. Configuring the typical synchronous serial interface

```
!
interface serial 1/0
 physical-layer mode sync
 ip address 192.168.1.2 255.255.255.0
 no shutdown
!
```

## 3.3 Example for E1 Interface Configuration

### 3.3.1 Configuring the Working Mode of the E1 Interface

```
Router_config#controller E1 2/0
Router_config_controller_E1_2/0# unframed
Router_config_controller_E1_2/0# no unframed
```

### 3.3.2 Forbidding the Link of the E1 Interface

```
Router_config#controller E1 2/0
Router_config_controller_E1_2/0#shutdown
Router_config_controller_E1_2/0#no shutdown
```

### 3.3.3 Configuring the channel-group parameter of the E1 interface

```
Router_config#controller E1 2/0
Router_config_controller_E1_2/0#channel 5 timeslots 18，11-13，20，22，30-28，24-25
Router_config_controller_E1_2/0#interface s2/0:5
Router_config_interface_s2/0:5#
```

### 3.3.4 Configuring the interface parameter of the E1 interface

In case of the channelized mode:

```
Router_config#controller E1 2/0
Router_config_controller_E1_2/0#channel 1 timeslots 1-31
Router_config_controller_E1_2/0#int s2/0:1
Router_config_controller_s2/0:1#enca fr
Router_config_controller_s2/0:1#ip add 130.130.0.1 255.255.255.0
```

In case of the unchannelized mode:

```
Router_config#controller E1 2/0
Router_config_controller_E1_2/0#unframed
Router_config_controller_E1_2/0#int s2/0:0
Router_config_controller_s2/0:0#enca fr
```

Router_config_controller_s2/0:0#ip add 130.130.0.1 255.255.255.0

### 3.3.5 Configuring the E1 Interface to Transmit FIFO in Unframed Mode

Router_config#controller E1 2/0
Router_config_controller_E1_2/0#unframe
Router_config_controller_E1_2/0#txfifo 48