CHAPTER 4

Interface Configuration Commands

This chapter contains the commands used to configure interface features. The commands are in alphabetical order. For hardware technical descriptions and interface configuration tasks and examples, refer to the *Cisco 1020 User Guide*.

async default ip address

To set the address used on the remote side, use the **async default ip address** interface configuration command. To remove the default address from your configuration, use the **no** form of this command.

async default ip address *ip-address [netmask]*
no async default ip address

Syntax Description

ip-address	IP Address of the client interface
netmask	Netmask of the client's interface

Default

No interface address is assigned.

Command Mode

Interface configuration

Example

The following example specifies address 182.32.7.51 as the destination of async interface 2:

```
interface async 2
no modem
async default ip address 182.32.7.51
```

dialer rotary-group

To include an interface in a dialer rotary group, use the **dialer rotary-group** interface configuration command.

dialer rotary-group *number*

Syntax Description

number	Number of the dialer interface in whose rotary group you want this interface included. An integer from 0 to 99 that you select that indicates the dialer rotary group.

Default

Group 0.

Command Mode

Interface configuration

Related Commands

site
dialgroup

encapsulation

To configure Serial Line Internet Protocol (SL/IP) encapsulation, use the **encapsulation slip** interface configuration command. To configure Point-to-Point Protocol (PPP) encapsulation, use the **encapsulation ppp** interface configuration command.

```
encapsulation slip
encapsulation ppp
```

Syntax Description

This command has no arguments or keywords.

Command Mode

Interface configuration

Usage Guidelines

SLIP is designed to encapsulate Internet Protocol (IP) datagrams over point-to-point links.PPP can encapsulate IP, IPX, or both over point-to-point links.

flowcontrol hardware

This command turns on hardware flow control on an async port using RTS/CTS. To disable hardware flow control use the **no** version of the command.

```
flowcontrol hardware
no flowcontrol hardware
```

Syntax Description

This command has no arguments or keywords.

Default

Default is hardware flowcontrol on.

Command Mode

Interface Configuration

Usage Guidelines

Always use hardware flow control with SLIP or PPP.

When the console DIP switch is in console mode, interface async 1 is automatically configured for software flow control, 9600 bps. Do not use async 1 for SLIP or PPP with the DIP switch in console mode.

ip access-group

To control access to an interface**,** use the **ip access-group** interface configuration command. To remove the specified access group, use the **no** form of this command.

ip access-group *access-list-number* {**in** | **out**}
no ip access-group *access-list-number* {**in** | **out**}

Syntax Description

access-list-number	Number of an access list. This is a decimal number from 1 through 199.
in	Filters on inbound packets (packets coming into interface).
out	Filters on outbound packets (packets going out to interface).

Default

Entering a keyword is strongly recommended, but if a keyword is not specified, **out** is the default.

Command Mode

Interface configuration

Usage Guidelines

For inbound access lists, after receiving a packet, the communication server checks the packet against the access list. If the access list permits the packet, the communication server continues to process the packet. If the access list rejects the packet, the communication server discards the packet and returns an *ICMP Host Unreachable* message.

For outbound access lists, after receiving and routing a packet to a controlled interface, the communication server checks the packet against the access list. If the access list permits the packet, the communication server transmits the packet. If the access list rejects the packet, the communication server discards the packet and returns an *ICMP Host Unreachable* message.

Access lists are applied on either outbound or inbound interfaces, or both.

If the specified access list does not exist, all packets are passed.

Example

The following example applies access list 101 on packets outbound to interface Ethernet 0:

```
interface ethernet 0
ip access-group 101 out
```

Related Commands

access-list (extended)
show access-lists

ip address

Use the **ip address** interface configuration command to set an IP address for an interface. Use the **no ip address** command to remove the specified address.

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

Syntax Description

ip-address	IP address
mask	Mask for the associated IP subnet, only used on Ethernet 0.

Default

No IP address is defined for an interface.

Command Mode

Interface configuration

Usage Guidelines

Async interfaces by default use the same ip address as the Ethernet interface. You can disable IP processing on the Ethernet interface by removing its IP address with the **no ip address** command.

Netmasks cannot be specified on Async interfaces on the Cisco 1020. They are specified as part of the **async default ip address** command.

ip broadcast-address

Use the **ip broadcast-address** interface configuration command to define a broadcast address for an Ethernet interface. Use the **no ip broadcast-address** command to restore the IP broadcast address to the default.

ip broadcast-address [*ip-address*]
no ip broadcast-address

Syntax Description

ip-address	(Optional) IP broadcast address for a network

Default

Default address: 1s in the host portion of the network address.

Command Mode

Interface configuration

Usage Guidelines

The only two broadcast addresses supported on the Cisco 1020 are all 0s in the host portion of the address and all 1s in the host portion of the address.

Example

```
interface ethernet 0
ip address 172.16.1.1 255.255.255.0
ip broadcast-address 172.16.1.255
```

ip tcp header-compression

Use the **ip tcp header-compression** interface configuration command to enable TCP header compression on an async interface. Use the **no ip tcp header-compression** command to disable compression.

ip tcp header-compression
no ip tcp header-compression

Syntax Description

This command has no arguments or keywords.

Default

Disabled

Command Mode

Interface configuration

Usage Guidelines

You can compress the headers of your TCP/IP packets in order to reduce the size of your packets. TCP header compression is supported on serial lines using SLIP or PPP encapsulation. You must enable compression on both ends of a serial connection. RFC 1144 specifies the compression process. Compressing the TCP header can speed up Telnet connections dramatically. In general, TCP header compression is advantageous when your traffic consists of many small packets, not for traffic that consists of large packets. Transaction processing (usually using terminals) tends to use small packets while file transfers use large packets. This feature only compresses the TCP header, so it has no effect on UDP packets or other protocol headers.

When using SLIP, both ends must agree on whether TCP header compression is to be used. PPP will negotiate for header compression and turn it off if either end is unwilling to support it.

ipx access-group

To apply a generic output filter to an interface, use **ipx access-group** interface configuration command. To remove the access list, use the **no** form of this command.

ipx access-group *access-list-number* **[in|out]**
no ipx access-group *access-list-number* **[in|out]**

Syntax Description

access-list-number	Number of the access list. All outgoing packets defined with either standard or extended access lists and forwarded through the interface are filtered by the entries in this access list. For standard access lists, *access-list-number* is a decimal number from 800 to 899. For extended access lists, *access-list-number* is a decimal number from 900 to 999.
in	Apply to IPX packets coming in on the interface.
out	Apply to IPX packets before they go out on the interface.

Default

No filters are predefined.

Command Mode

Interface configuration

Usage Guidelines

Generic filters control which packets are sent in or out on an interface based on the packet's source and destination addresses, IPX protocol type, and source and destination socket numbers. You use the standard **access-list** and extended **access-list** commands to specify the filtering conditions.

You can apply only one generic filter to an interface for each of **in** and **out**.

Example

In the following example, access list 801 is applied to interface Ethernet 0 for outgoing packets.

```
interface ethernet 0
ipx access-group 801 out
```

Related Commands

access-list (standard for ipx)
access-list (extended for ipx)

ipx network

To enable IPX routing on a particular interface and to optionally select the type of encapsulation (framing), use the **ipx network** interface configuration command. To disable IPX routing, use the **no** form of this command.

ipx network *number* [**encapsulation** *encapsulation-type*]
no ipx network

Syntax Description

number

Network number. This is an eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFFE.

You do not need to specify leading zeros in the network number. For example, for the network number 000000AA you can enter just AA.

encapsulation *encapsulation-type*

(Optional) Type of encapsulation. It can be one of the following values:

arpa (for Ethernet interfaces only)—Use Novell's Ethernet_II encapsulation. This encapsulation is recommended for networks that handle both TCP/IP and IPX traffic.

novell-ether (for Ethernet interfaces only)—Use Novell's "Ethernet_802.3" encapsulation.This encapsulation consists of a standard 802.3 MAC header followed directly by the IPX header with a checksum of FFFF. It is the default encapsulation used by NetWare Version 3.11.

sap (for Ethernet interfaces)—Use Novell's Ethernet_802.2 encapsulation.This encapsulation consists of a standard 802.3 MAC header followed by an 802.2 LLC header. This is the default encapsulation used by NetWare Version 4.0.

Default

IPX routing is disabled.

Encapsulation types

For Ethernet: **novell-ether**

Command Mode

Interface configuration

Usage Guidelines

The interface sends only packets with the specified encapsulation, but accepts packets with any encapsulation.

The following two commands also allow you to enable IPX routing on an interface and specify the encapsulation.

ipx network *number*
ipx encapsulation *encapsulation-type*

Related Commands

option ipx

ipx output-sap-filter

To control which services are included in Service Advertisement Protocol (SAP) updates sent by the communication server, use the **ipx output-network-filter** interface configuration command. To remove the filter, use the **no** form of this command.

ipx output-sap-filter *access-list-number*
no ipx output-sap-filter *access-list-number*

Syntax Description

access-list-number	Number of the SAP access list. All outgoing service advertisements are filtered by the entries in this access list. The argument access-list-number is a decimal number from 1000 to 1099.

Default

No filters are predefined.

Command Mode

Interface configuration

Usage Guidelines

The router applies output SAP filters prior to sending SAP packets.

You can issue only one **ipx output-sap-filter** command on each interface.

When configuring SAP filters for NetWare 3.11 and later servers, use the server's internal network and node number (the node number is always 0000.0000.0001) as its address in the SAP **access-list** command. Do not use the *network.node* address of the particular interface board.

Example

The following example denies service advertisements about server 0000.0000.0001 on network aa from being sent on network 4d (via interface Ethernet 0). All other services are advertised via this network.

```
access-list 1000 deny aa.0000.0000.0001
access-list 1000 permit -1
interface ethernet 0
ipx net 4d
ipx output-sap-filter 1000
```

Related Commands

access list (SAP filtering)

modem

To configure a line for both incoming and outgoing calls, use the **modem** line configuration command. The command enables a line to be used for both incoming and outgoing calls on dial-in/dial-out modems.

modem {in|out|inout}
no modem

Syntax Description

in	Only allow incoming calls on this line.
inout	Allow both incoming and outgoing calls on this line.
out	Only allow outgoing calls on this line.

Default

inout

Command Mode

Interface configuration

modem-type

This command defines the type of modem attached to an asynchronous interface using the definitions created by **modem-def**.

modem-type *modem*

Syntax Description

modem	A modem name previously defined by modem-def.

Command Mode

Interface Configuration

Usage Guidelines

The initialization string defined by **modem-def** is sent to the modem when the **clear interface async** *port* command is given.

Example

```
interface async 1
modem-type usrv32
!
interface async 2
modem-type pcmcia-att-288
```

Related Commands

clear interface
modem-def

mtu

To adjust the maximum packet size or maximum transmission unit (MTU) size, use the **mtu** interface configuration command. Use the **no mtu** command to restore the MTU value to its original default value.

mtu *bytes*
no mtu

Syntax Description

bytes	Desired size in bytes

Default

Table 4-1 lists default MTU values according to media type.

Table 4-1 Default Media MTU Values

Media Type	Default MTU
Ethernet	1500
Serial	1500

Command Mode

Interface configuration

Usage Guidelines

Each interface has a default maximum packet size or maximum transmission unit (MTU) size. This number generally defaults to the largest size possible for that type interface. On serial interfaces, the MTU size varies, but cannot be set smaller than 64 bytes.

routing rip

When used on an interface this command controls whether routing updates will be sent or listened to on the interface. Without arguments it will both broadcast and listen for updates. When used in the **no** form it neither broadcasts nor listens for routing updates.

```
routing rip
routing rip {broadcast|listen}
no routing rip
```

Syntax Description

broadcast	Send routing updates on this interface but do not listen for them.
listen	Listen for routing updates on this interface but do not broadcast them.

Default

On

Command Mode

Interface Configuration

Usage Guidelines

Caution This command controls both IP and IPX routing updates for this interface. Caution should be used when passing routing packets unidirectionally.

shutdown

To disable an interface, use the **shutdown** interface configuration command. To restart a disabled interface, use the **no shutdown** command.

shutdown
no shutdown

Syntax Description

This command has no arguments or keywords.

Default

Enabled

Command Mode

Interface configuration

Usage Guidelines

The **shutdown** command disables all functions on the specified Ethernet interface. Not supported on async interfaces.

Related Commands

show interfaces

speed

To set the async port baud rate, use the **speed** line configuration command. The command sets both the transmit (to modem) and receive (from modem) speeds.

speed *bps*

Syntax Description

bps Baud rate in bits per second (bps); see Table 4-2 for settings.

Default

9600 bps

Command Mode

Interface configuration

Usage Guidelines

This command pertains to the asynchronous ports only. Set the speed to match the baud rate of whatever device you have connected to the port. Some baud rates available on devices connected to the port might not be supported on the router. The router will indicate if the speed you select is not supported. Use the following table as a guide for setting the line speeds.

Table 4-2 Router Line Speeds in Bits per Second

Router Model	Baud Rates
Cisco 7000, AGS, CGS, MGS	50, 75, 110, 134, 150, 200, 300, 600, 1050, 1200, 2000, 2400, 4800, 9600, 19200, 38400
IGS, Cisco 2000, Cisco 3000, Cisco 4000	75, 110, 134, 150, 300, 600, 1200, 2000, 2400, 4800, 1800, 9600, 19200, 38400
Cisco 1020	300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200