Global Configuration Commands

This chapter contains the commands used to configure everything on the router except for specific interfaces and sites. The commands are in alphabetical order. For hardware technical descriptions and global configuration tasks and examples, refer to the Cisco 1020 User Guide on UniverCD or a printed copy can be ordered.

access-list (standard)

To define a standard IP access list, use the standard version of the access-list global configuration command. To remove a standard access lists, use the no form of this command.

access-list access-list-number {**deny** | **permit**} source [source-mask] no access-list access-list-number

Syntax Description

access-list-number Number of an access list. This is a decimal number from 1 through 99.

deny Denies access to matching conditions.

permit Permits access for matching conditions.

source Number of the network or host from which the packet is being sent. It is

a 32-bit quantity in four-part dotted-decimal format.

source-mask (Optional) Mask to be applied to *source*. It is a 32-bit quantity in

four-part dotted-decimal format. Place ones in the low-order bit positions

you want to mask.

Default

The access list defaults to an implicit deny statement for everything that has not been permitted.

Command Mode

Global configuration

Usage Guidelines

Plan your access conditions carefully and be aware of the implicit deny.

You can use access lists to control the transmission of packets on an interface to restrict contents of routing updates.

Use the **show access-lists** EXEC command to display the contents of all access lists.

Examples

The following example of a standard access list allows access for only those hosts on the three specified networks. It assumes that subnetting is not used; the masks apply to the host portions of the network addresses. Any host with a source address that does not match the access list statements will be rejected.

```
access-list 1 permit 192.5.34.0 0.0.0.255
access-list 1 permit 128.88.1.0 0.0.255.255
access-list 1 permit 36.0.0.0 0.255.255.255
! (Note: all other access implicitly denied)
```

To specify a large number of individual addresses more easily, you can omit the address mask; that is, all zeros from the access-list command. Thus, the following two configuration commands are identical in effect:

```
access-list 2 permit 36.48.0.3
access-list 2 permit 36.48.0.3 0.0.0.0
```

Related Commands ip access group

show access-lists

access-list (extended)

To define an extended IP access list, use the extended version of the access-list global configuration command. To remove the access lists, use the no form of this command.

access-list access-list-number {**deny** | **permit**} protocol source source-mask destination destination-mask [[[type] operator operand] [type operator operand]] [established] no access-list access-list-number

Syntax Description

access-list-number Number of an access list. This is a decimal number from 100

through 199.

deny Denies access if the conditions are matched.

Permits access if the conditions are matched. permit

protocol Name or number of an IP protocol. It can be one of the keywords ip, tcp,

udp, or icmp. To match any TCP, UDP, or ICMP, use the keyword ip.

Number of the network or host from which the packet is being sent. It is source

a 32-bit quantity in four-part dotted-decimal format.

Mask to be applied to *source*. It is a 32-bit quantity in four-part source-mask

dotted-decimal format. Place ones in the low-order bit positions you

want to mask.

destination Number of the network or host to which the packet is being sent. It is a

32-bit quantity in four-part dotted-decimal format.

destination-mask Mask to be applied to *destination*. It is a 32-bit quantity in four-part

dotted-decimal format. Place ones in the low-order bit positions you

want to mask.

Src for source port or dst for destination port. If not specified, defaults to type

destination port.

(Optional) Compares destination ports. Possible operands include lt (less operator

than), gt (greater than), and eq (equal). Note that the ip and icmp

protocol keywords do not allow port distinctions.

operand (Optional) Decimal destination port to compare. Note that the **ip** and

icmp protocol keywords do not allow port distinctions.

established (Optional) For the TCP protocol only: Indicates an established

> connection. A match occurs if the TCP datagram has the ACK, FIN or RST bits set. The nonmatching case is that of the initial TCP datagram to

form a connection.

Default

An extended access list defaults to an implicit deny statement for everything that has not been permitted.

Command Mode

Global configuration

Usage Guidelines

You can use access lists to control the transmission of packets on an interface. The router stops checking the extended access list after a match occurs.

Fragmented IP packets, other than the initial fragment, are immediately accepted by any extended IP access list.

Note After an access list is created initially, any subsequent additions (possibly entered from the terminal) are placed at the end of the list. In other words, you cannot selectively add or remove access list command lines from a specific access list.

Example

In the following example, the Ethernet network is a Class B network with the address 128.88.0.0, and the mail host's address is 128.88.1.2. The keyword **established** is used only for the TCP protocol to indicate an established connection. A match occurs if the TCP datagram has the ACK, FIN or RST bits set, which indicate that the packet belongs to an existing connection.

```
access-list 102 permit tcp 0.0.0.0 255.255.255.255 128.88.0.0 0.0.255.255 established
access-list 102 permit tcp 0.0.0.0 255.255.255.255 128.88.1.2 0.0.0.0 eq 25
interface ethernet 0
ip access-group 102 out
```

Related Commands

ip access-group show access-lists

access-list (standard for ipx)

To define a standard IPX access list, use the standard version of the access-list global configuration command. To remove a standard access list, use the **no** form of this command.

access-list access-list-number {**deny** | **permit**} source-network[.source-node] [destination-network[.destination-node]] no access-list access-list-number

Syntax Description

Number of the access list. This is a decimal number from 800 to 899. access-list-number

Denies access if the conditions are matched. deny

Permits access if the conditions are matched. permit

source-network Number of the network from which the packet is being sent. This is an

> eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFE. A network number of

−1 matches all networks.

You do not need to specify leading zeros in the network number. For example,

for the network number 000000AA, you can enter just AA.

(Optional) Node on *source-network* from which the packet is being sent. This is source-node

a 48-bit value represented by a dotted triplet of four-digit hexadecimal numbers

(xxxx.xxxx.xxxx).

destination-network (Optional) Number of the network to which the packet is being sent. This is an

> eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFE. A network number of

−1 matches all networks.

You do not need to specify leading zeros in the network number. For example,

for the network number 000000AA, you can enter just AA.

destination-node (Optional) Node on destination-network to which the packet is being sent. This

is a 48-bit value represented by a dotted triplet of four-digit hexadecimal

numbers (xxxx.xxxx.xxxx).

Default

No access lists are predefined.

Command Mode

Global configuration

Usage Guidelines

Standard IPX access lists filter on the source network. All other parameters are optional.

Use the ipx access-group command to assign an access list to an interface. You can apply only one extended or one standard access list to an interface for incoming packets, and another for outgoing packets.

To delete a standard access list, use the **no** form of the command.

no access-list access-list-number

Examples

The following example denies access to traffic from all IPX networks (-1) to destination network 2:

```
access-list 800 deny -1 2
```

The following example denies access to all traffic from IPX address 1.0000.0c00.1111:

```
access-list 800 deny 1.0000.0c00.1111
```

The following example denies access from source address 1111.1111.1111 on network 1 to destination address 2222.2222.2222 on network 2:

```
access-list 800 deny 1.1111.1111.1111 2.2222.2222.2222
```

Related Commands

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

access-list (extended for ipx)

To define an extended Novell IPX access list, use the extended version of the access-list global configuration command. To remove an extended access list, use the no form of this command.

access-list access-list-number {deny | permit} protocol [source-network[.source-node] source-socket [destination-network [.destination-node] destination-socket]]

no access-list access-list-number

Syntax Description

access-list-number Number of the access list. This is a decimal number from 900 to 999.

deny Denies access if the conditions are matched.

permit Permits access if the conditions are matched.

Number of an IPX protocol type, in decimal. This also is sometimes protocol

referred to as the packet type. Only -1 is supported on the Cisco 1020.

source-network Number of the network from which the packet is being sent. This is an

> eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFE. A network

number of -1 matches all networks.

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

source-node (Optional) Node on source-network from which the packet is being sent.

This is a 48-bit value represented by a dotted triplet of four-digit

hexadecimal numbers (xxxx.xxxx.xxxx).

source-socket Socket number from which the packet is being sent, in hexadecimal.

destination-network Number of the network to which the packet is being sent. This is an

> eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFE. A network

number of -1 matches all networks.

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

destination-node (Optional) Node on *destination-network* to which the packet is being

sent. This is a 48-bit value represented by a dotted triplet of four-digit

hexadecimal numbers (xxxx.xxxx.xxxx).

destination-socket (Optional) Socket number to which the packet is being sent, in

hexadecimal. Table 3-2 in the "Usage Guidelines" section lists some IPX

socket numbers.

Default

No access lists are predefined.

Command Mode

Global configuration

Usage Guidelines

Extended IPX access lists filter on protocol type. All other parameters are optional.

Use the ipx access-group command to assign an access list to an interface. You can apply only one extended or one standard access list to an interface for incoming IPX traffic, and another for outgoing.

To delete an extended access list, use the **no** form of the command:

no access-list access-list-number

Related Commands access-list (standard for IPX) ipx access-group show access-lists

access-list (SAP filtering)

To define an access list for filtering Service Advertisement Protocol (SAP) requests, use the SAP filtering form of the access-list global configuration command. To remove the access list, use the no form of this command.

access-list access-list-number {deny | permit} network[.node] [service-type [server-name]] **no access-list** access-list-number {**deny** | **permit**} network[.node] [service-type [server-name]]

Syntax Description

access-list-number Number of the SAP access list. This is a decimal number from 1000 to

1099.

Denies access if the conditions are matched. deny

Permits access if the conditions are matched. permit

network 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 FFFFFFE. A network number of –1 matches all networks.

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

node (Optional) Node on *network*. This is a 48-bit value represented by a

dotted triplet of four-digit hexadecimal numbers (xxxx.xxxx.xxxx).

(Optional) Service type on which to filter. This is a hexadecimal number. service-type

A value of 0 means all services. Table 3-1 in the "Usage Guidelines"

section lists examples of service types.

(Optional) Name of the server providing the specified service type. This server-name

can be any contiguous string of printable ASCII characters. Use double quotation marks ("") to enclose strings containing embedded spaces.

Default

No access lists are predefined.

Command Mode

Global configuration

Usage Guidelines

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 access-list command. Do not use the *network.node* address of the particular interface board.

Table 3-1 lists some sample IPX SAP types. For more information about SAP types, contact Novell.

Table 3-1 **Sample IPX SAP Services**

Service Type (Hexadecimal)	Description	
0	All SAP services; IPX defines server type 0 to be an unknown service, which means that you cannot define an access list to permit or deny unknown services	
1	User	
2	User group	
3	Print server queue	
4	File server	
5	Job server	
7	Print server	
9	Archive server	
A	Queue for job servers	
21	NAS SNA gateway	
2D	Time Synchronization VAP	
2E	Dynamic SAP	
47	Advertising print server	
4B	Btrieve VAP 5.0	
4C	SQL VAP	
7A	TES—NetWare for VMS	
98	NetWare access server	
9A	Named Pipes server	
9E	Portable NetWare—UNIX	
111	Test server	
166	NetWare management (Novell's Network Management Station [NMS])	
26A	NetWare management (NMS console)	
FFFF	Wildcard (any SAP service)	

To delete a SAP access list, specify the minimum number of keywords and arguments needed to delete the proper access list. For example, to delete the entire access list, use the following command:

no access-list access-list-number

Example

The following access list blocks all access to a file server (service type 4) on the directly attached network by resources on other Novell networks, but allows access to all other available services on the interface:

```
access-list 1001 deny -1 4
access-list 1001 permit -1
```

Related Commands ipx output-sap-filter show access-lists

chat-script

To create a script that will place a call over a modem, use the **chat-script** global configuration command. To disable the specified chat script, use the **no** form of this command.

chat-script scriptname expect-send no chat-script scriptname

Syntax Description

scriptname Name of the chat script

expect-send Content of the chat script

Default

No chat scripts are configured.

Command Mode

Global configuration

Usage Guidelines

Chat scripts are used in dial-on-demand routing to give commands to dial a modem and commands to log on to remote systems. The defined script will be used to place a call over a modem.

Some characteristics of chat scripts are as follows:

- Chat scripts are case sensitive.
- A string within quotation marks is treated as a single entity.

Escape Sequences

Chat scripts are in the form expect send. Each send string is followed by a return unless it ends with

The escape sequences used in chat scripts are listed in Table 3-2.

Table 3-2 **Chat Script Escape Sequences**

Escape Sequence	Description	
,	Expect a null string.	
\ <u>c</u>	Suppress newline at the end of the send string.	
\ <u>r</u>	Send a return.	
	Send a backslash	

Example

```
chat-script hqdial "" "ATDT 5551212" "CONNECT" "" ":" "pr1" "word:"
"what4ever" ">" "ppp 192.168.1.1"
```

Related Commands system-script

default routing

This command controls whether default routes will be included or listened to in routing updates. Without arguments it will both include and listen for default routes in routing updates. When used in the **no** form it neither includes nor listens for default routes in routing updates.

default routing default routing {broadcast|listen} no default routing

Syntax Description

broadcast Send default route information as part of routing updates but do not

accept them in routing updates.

listen Accept default routes present in routing updates but do not include them

in routing updates.

Default

Off

Command Mode

Global Configuration

Usage Guidelines

If default routing or default routing broadcast is set, the router will send default route information as part of its normal RIP messages. If **default routing** or **default routing listen** is set, the router will accept default route information from other routers connected to any of the interfaces. The default is to not broadcast or listen for default routes. If selected, default routes are broadcast or listened to across all interfaces, including serial interfaces configured for PPP or SLIP.

Related Commands ip route

routing rip

enable password

To assign a password for the privileged EXEC level, use the enable password global configuration command.

enable password password

Syntax Description

password

Case-sensitive character string that specifies the line password prompted for in response to the EXEC command enable-password. The string can contain up to 16 characters.

Default

No password is assigned.

Command Mode

Global configuration

Usage Guidelines

When you enter **enable** at the Username: prompt, the router will prompt you for this password.

Example

This example sets the password secretword for the privileged command level on all lines, including the console:

enable password secretword

exit

To exit any command mode or close an active terminal session and terminate the EXEC, use the exit command at the system prompt.

exit

Syntax Description

This command has no arguments or keywords.

Command Mode

Available in all command modes

Usage Guidelines

When you enter the exit command at the EXEC levels, the EXEC mode is ended. Use the exit command at the configuration level to return to privileged EXEC mode. Use the exit command in interface and router command modes to return to global configuration mode. You can also press Ctrl-Z from any configuration mode to return to privileged EXEC mode.

Example

The following example shows how to exit an active session.

Router# exit

Related Commands

logout

hostname

To specify or modify the host name for the router, use the **hostname** global configuration command. The host name is used in prompts, default configuration filenames, and as the system ID certifier for CHAP authentication.

hostname name

Syntax Description

name

New host name for the router; the name is case sensitive.

Default

No default.

Command Mode

Global configuration.

Example

The following example changes the host name to *sandbox*:

hostname sandbox

interface

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

interface interface-type interface-number

Syntax Description

interface-type Type of interface to be configured. See Table 3-3.

interface-number Port number. The numbers are assigned at the factory and can be displayed

> with the show interfaces command. On the Cisco 1020 the port number of the interface can be 0, 1, or 2, depending on the type of interface. See

Table 3-3.

Table 3-3 **Interface Type Keywords**

Keyword	Interface Type	Interface Numbers
ethernet	Ethernet IEEE 802.3 interface.	0
async	Asynchronous serial port.	1, 2

Command Mode

Global configuration

Related Commands

show interface

ip domain-lookup

Use the **ip domain-lookup** global configuration command to enable the IP Domain Name System-based host name-to-address translation. Use the no ip domain-lookup command to disable the Domain Name System.

ip domain-lookup no ip domain-lookup

Syntax Description

This command has no arguments or keywords.

Default

Enabled

Command Mode

Global configuration

Example

The following example enables the IP Domain Name System-based host name-to-address translation:

ip domain-lookup

Related Commands

ip domain-name

ip name-server

ip domain-name

Use the ip domain-name global configuration command to define a default domain name that the router uses to complete unqualified host names (names without a dotted-decimal domain name). Use the no ip domain-name command to disable host name lookup.

ip domain-name name no ip domain-name

Syntax Description

name

Default domain name used to complete unqualified host names; do not include the initial period that separates an unqualified name from the domain name.

Default

Enabled

Command Mode

Global configuration

Example

The following example defines cisco.com as the default domain name:

ip domain-name cisco.com

Related Commands

ip domain-lookup ip name-server

ip host

Use the **ip host** global configuration command to define a static host name-to-address mapping in the host cache. Use the **no ip host** command to remove the name-to-address mapping.

ip host name address **no ip host** name address

Syntax Description

Name of the host. The first character can be either a letter or a number, name

but if you use a number, the operations you can perform are limited.

address Associated IP address.

Default

Disabled

Command Mode

Global configuration

Usage Guidelines

The first character can be either a letter or a number, but if you use a number, the operations you can perform (such as ping) are limited.

Example

The following example uses the **ip host** command to define two static mappings:

```
ip host croff 192.31.7.18
ip host bisso-gw 10.2.0.2
```

ip name-server

Use the **ip name-server** global configuration command to specify the address of one or two name servers to use for name and address resolution. Use the no ip name-server command to remove the addresses specified.

```
ip name-server server-address1 [server-address2]
no ip name-server server-address1 [server-address2]
```

Syntax Description

server-address1...2

IP addresses of up to two name servers

Default

No name server addresses are specified.

Command Mode

Global configuration

Example

The following example specifies host 131.108.1.111 as the primary name server and host 131.108.1.2 as the secondary server:

```
ip name-server 131.108.1.111 131.108.1.2
```

This command will be reflected in the configuration file as follows:

```
ip name-server 131.108.1.111
ip name-server 131.108.1.2
```

Related Commands

ip domain-lookup ip domain-name

ip route

Use the **ip route** global configuration command to establish static routes. The **no ip route** command removes the static route.

ip route network address [distance] **no ip route** network

Syntax Description

network Internet address of the target network or subnet

address Internet address of the next hop that can be used to reach that network

(Optional) An administrative distance from 1 to 14. Distance defaults to distance

1 if no value is entered.

Default

No static routes are established.

Command Mode

Global configuration

Usage Guidelines

A static route is appropriate when the router cannot dynamically build a route to the destination.

Examples

In the following example, packets for network 131.108.0.0 will be routed to the router at 131.108.6.6:

ip route 131.108.0.0 131.108.6.6

ipx netbios

The command ipx netbios enables broadcasts of type 20 packets (NetBIOS, Network Adapter Basic Input/Output System) across all active interfaces running the IPX protocol. The no version of the command disables such broadcasts.

ipx netbios no ipx netbios

Syntax Description

This command has no arguments or keywords.

Default

Disabled.

Command Mode

Global configuration

Related Commands option ipx ipx network

ipx route

To add a static route to the routing table, use the **ipx route** global configuration command. To remove a route from the routing table, use the **no** form of this command.

ipx route network network.node [distance] [ticks] no ipx route network

Syntax Description

network Network to which you want to establish a static route.

> This is an eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFE. You do not need to specify leading zeros in the network number. For example, for the network number 000000AA, you can enter just AA.

network.node Router to which to forward packets destined for the specified network.

> The argument *network* is an eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFE. You do not need to specify leading zeros in the network number. For example, for the network number 000000AA, you

can enter just AA.

The argument *node* is the node number of the target router. This is a 48-bit value represented by a dotted triplet of four-digit hexadecimal

numbers (xxxx.xxxx.xxxx).

(Optional) Distance metric for this route. A number from 1 to 15. distance

Distance defaults to 1 if not specified.

ticks (Optional) Distance tick metric for this route. A number from 1 to 65536.

Default

No static routes are predefined.

Command Mode

Global configuration

Usage Guidelines

The **ipx route** command forwards packets destined for the specified network (network) via the specified router (network.node), regardless of whether that router is sending dynamic routing information.

Be careful when assigning static routes. When links associated with static routes are lost, traffic may stop being forwarded, even though alternative paths might be available.

Example

In the following example, the router at address 3abc.0000.0c00.1ac9 handles all traffic destined for network 5e:

ipx route 5e 3abc.0000.0c00.1ac9

Related Commands show ipx route

logging

To log messages to a syslog server host use the logging global configuration command. The nologging command deletes the syslog server.

logging host no logging

Syntax Description

host

Name or IP address of the host to be used as a syslog server

Default

No messages are logged to a syslog server host.

Command Mode

Global configuration

Usage Guidelines

This command identifies a syslog server host to receive logging messages. The auth facility is used.

Example

The following example logs messages to a host named *johnson*:

logging johnson

modem-def

This command is used to define the optimum speed and initialization string to use for a particular modem.

modem-def modem "description" bps expect-send

Syntax Description

modem A name for the modem to be used by **modem-type**.

A longer descriptive name for the modem, which must be enclosed in description

double-quotes if it contains spaces.

bps The optimum speed to lock the DTE rate of the port at when using this

modem, typically 38400, 57600 or 115200.

expect-send A series of Expect-Send pairs inside double quotes to be used when

initially configuring the modem.

Command Mode

Global configuration

Usage Guidelines

The Expect-Send sequence should configure the modem to raise DCD when carrier is detected, to lock the DTE rate at the specified speed, to reset the modem when DTR is dropped, to use hardware flow control, and to save these values to the modem's nonvolatile storage. Consult your modem's manual to determine the proper settings for these. For use with dial-in, set S0=1 to answer the phone.

It is suggested that you differentiate between external modems (for use on async 1) and PCMCIA modems (for use on async 2).

Example

```
modem-def usrv34 "USR V.34 Courier" 115200 "" "AT&F1S0=1&W" "OK" ""
```

Related Commands

clear interface modem-type show modem

option ipx

The option ipx global configuration command is used to turn on IPX functionality in the Cisco 1020.

option ipx key

Syntax Description

key

Key value is based on your serial number. The key value is provided to you by Cisco when you purchase the IPX option for the Cisco 1020.

Command Mode

Global configuration

Usage Guidelines

None of the IPX commands do anything until a valid ipx key is installed with the option ipx command.

Related Commands

access-list (ipx standard) access-list (ipx extended) debug ipx packet ipx access-group ipx netbios ipx network ipx output-sap-filter ipx route show ipx route

reverse-telnet-port

This command sets the TCP port number for incoming administrative telnet sessions.

reverse-telnet-port number

Syntax Description

number

The TCP port number that the router will listen on for incoming administrative telnet sessions. It must be between 0 and 65535.

Default

23

Command Mode

Global configuration

Usage Guidelines

Note Setting this to 0 turns off the ability to telnet into the router, and will require all further configuration to be done from the console.

site

The site command is used to define a remote location that can either dial into the router, be dialed out to, or both.

site name

Syntax Description

name

An identifier for the site used for the dial command. It can be up to 12 characters that are alphanumeric or dash, underscore or period. If it contains spaces it must be enclosed in double quotes.

Command Mode Global Configuration

Related Commands dial show sites

snmp-server community

To set up the community access string, use the **snmp-server community** global configuration command. This command enables SNMP server operation on the router. The no snmp-server community command removes the specified community string or access list.

snmp-server community [string [**RO** | **RW**] [number]] **no snmp-server** [community [string]]

Syntax Description

string (Optional) Community string that acts like a password and permits access to the

SNMP protocol.

RO (Optional) Specifies read-only access.

RW (Optional) Specifies read-write access.

(Optional) Integer from 1 to 99 that specifies an access list of IP addresses that may number

use the community string.

Default

SNMP community string "public" permits read-only access.

Command Mode

Global configuration

Example

The following example assigns the string *comaccess* to the SNMP allowing read-only access and specifies that Internet access list 4 can use the community string.

snmp-server community comaccess RO 4