Novell IPX Commands

This chapter describes the function and displays the syntax of each Novell IPX command. For more information about defaults and usage guidelines, see the corresponding chapter of the *Router Products Command Reference* publication.

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

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-number	Number of the access list. This is a decimal number from 800 to 899.
deny	Denies access if the conditions are matched.
permit	Permits access if the conditions are matched.
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 FFFFFFFD. A network number of 0 matches the local network. 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 just enter 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-node-mask	(Optional) Mask to be applied to *source-node*. This is a 48-bit value represented as a dotted triplet of four-digit hexadecimal numbers (*xxxx.xxxx.xxxx*). Place ones in the bit positions you want to mask.
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 FFFFFFFD. A network number of 0 matches the local network. 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 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-node-mask	(Optional) Mask to be applied to *destination-node*. This is a 48-bit value represented as a dotted triplet of four-digit hexadecimal numbers (*xxxx.xxxx.xxxx*). Place ones in the bit positions you want to mask.

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

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-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.
protocol	Number of an IPX protocol type, in decimal. This also is sometimes referred to as the packet type. The IPX protocol numbers table in the *Router Products Command Reference* publication lists some IPX protocol numbers.
source-network	(Optional) 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 FFFFFFFD. A network number of 0 matches the local network. 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 just enter 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-network-mask	(Optional) Mask to be applied to *source-network*. This is an eight-digit hexadecimal mask. Place ones in the bit positions you want to mask. The mask must immediately be followed by a period, which must in turn immediately be followed by *source-node-mask*.
source-node-mask	(Optional) Mask to be applied to *source-node*. This is a 48-bit value represented as a dotted triplet of four-digit hexadecimal numbers (*xxxx.xxxx.xxxx*). Place ones in the bit positions you want to mask.
source-socket	Socket number from which the packet is being sent, in hexadecimal. The IPX socket numbers table in the *Router Products Command Reference* publication lists some IPX protocol numbers.
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 FFFFFFFD. A network number of 0 matches the local network. 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-network-mask	(Optional) Mask to be applied to *destination-network*. This is an eight-digit hexadecimal mask. Place ones in the bit positions you want to mask. The mask must immediately be followed by a period, which must in turn immediately be followed by *destination-node-mask*.
destination-node-mask	(Optional) Mask to be applied to *destination-node*. This is a 48-bit value represented as a dotted triplet of four-digit hexadecimal numbers (*xxxx.xxxx.xxxx*). Place ones in the bit positions you want to mask.
destination-socket	(Optional) Socket number to which the packet is being sent, in hexadecimal. The IPX socket numbers table in the *Router Products Command Reference* publication lists some IPX socket numbers.

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

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-number	Number of the SAP access list. This is a decimal number from 1000 to 1099.
deny	Denies access if the conditions are matched.
permit	Permits access if the conditions are matched.

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 FFFFFFFD. A network number of 0 matches the local network. 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 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*).
network.node-mask	(Optional) Mask to be applied to *network* and *node*. Place ones in the bit positions to be masked.
service-type	(Optional) Service type on which to filter. This is a hexadecimal number. A value of 0 means all services. The IPX SAP services table in the *Router Products Command Reference* publication lists examples of service types.
server-name	(Optional) Name of the server providing the specified service type. This can be any contiguous string of printable ASCII characters. Use double quotation marks (“ ”) to enclose strings containing embedded spaces. You can use an asterisk (*) at the end of the name as a wildcard to match one or more trailing characters.

[**no**] **area-address** *address mask*

To define a set of network numbers to be part of the current NLSP area, use the **area-address** router configuration command. To remove a set of network numbers from the current NLSP area, use the **no** form of this command.

address	Network number prefix. This is a 32-bit hexadecimal number.
mask	Mask that defines the length of the network number prefix. This is a 32-bit hexadecimal number.

clear ipx accounting [**checkpoint**]

To delete all entries in the accounting database when IPX accounting is enabled, use the **clear ipx accounting** EXEC command. If the keyword is not specified, all entries in the active database are deleted.

checkpoint	(Optional) Clears the checkpointed database.

clear ipx cache

To delete entries from the IPX fast-switching cache, use the **clear ipx cache** EXEC command.

clear ipx nlsp neighbors

To delete all NLSP adjacencies from the router's adjacency database, use the **clear ipx nlsp neighbors** EXEC command.

clear ipx route [*network* | *****]

To delete routes from the IPX routing table, use the **clear ipx route** EXEC command.

network	(Optional) Number of the network whose routing table entry you want to delete. This is an eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFFD. You do not need to specify leading zeros in the network number. For example, for the network number 000000AA, you can just enter AA.
*****	(Optional) Deletes all routes in the routing table.

clear ipx sse

To have the Cisco 7000 series route processor recompute the entries in the IPX SSE fast-switching cache, use the **clear ipx sse** EXEC command.

clear sse

To reinitialize the route processor on the Cisco 7000 series, use the **clear sse** EXEC command.

[**no**] **distribute-list** *access-list-number* **in** [*interface-name*]

To filter networks received in updates, use the **distribute-list in** router configuration command. To change or cancel the filter, use the **no** form of this command.

access-list-number	Standard IPX access list number in the range 800 to 899. The list explicitly specifies which networks are to be received and which are to be suppressed.
in	Applies the access list to incoming routing updates.

interface-name	(Optional) Interface on which the access list should be applied to incoming updates. If no interface is specified, the access list is applied to all incoming updates.

[**no**] **distribute-list** *access-list-number* **out** [*interface-name* | *routing-process*]

To suppress networks from being advertised in updates, use the **distribute-list out** router configuration command. To cancel this function, use the **no** form of this command.

access-list-number	Standard IPX access list number in the range 800 to 899. The list explicitly specifies which networks are to be sent and which are to be suppressed in routing updates.
out	Applies the access list to outgoing routing updates.
interface-name	(Optional) Interface on which the access list should be applied to outgoing updates. If no interface is specified, the access list is applied to all outgoing updates.
routing-process	(Optional) Name of a particular routing process (**rip** or **eigrp** *autonomous-system-number*).

[**no**] **ipx access-group** *access-list-number*

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.

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.

[**no**] **ipx accounting**

To enable IPX accounting, use the **ipx accounting** interface configuration command. To disable IPX accounting, use the **no** form of this command.

[**no**] **ipx accounting-list** *number mask*

To filter the networks for which IPX accounting information is kept, use the **ipx accounting-list** global configuration command. To remove the filter, use the **no** form of this command.

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

[**no**] **ipx accounting-threshold** *threshold*

To set the maximum number of accounting database entries, use the **ipx accounting-threshold** global configuration command. To restore the default, use the **no** form of this command.

threshold	Maximum number of entries (source and destination address pairs) that the router can accumulate. The default is 512.

ip accounting-transits *count*
no ip accounting-transits

To set the maximum number of transit entries that will be stored in the IPX accounting database, use the **ipx accounting-transits** global configuration command. To disable this function, use the **no** form of this command.

count	Number of transit entries that will be stored in the IPX accounting database. The default is 0.

[**no**] **ipx advertise-default-route-only** *network*

To advertise only the default route via the specified network, use the **ipx advertise-default-route-only** interface configuration command. To advertise all known routes out the interface, use the **no** form of this command.

network	Number of the network via which to advertise the RIP default route. This is the only network advertised.

ipx backup-server-query-interval *interval*
no ipx backup-server-query-interval

To change the time between successive queries of each IPX Enhanced IGRP neighbor's backup server table, use the **ipx backup-server-query-interval** global configuration command. To restore the default time, use the **no** form of this command.

interval	Minimum time, in seconds, between successive queries of each Enhanced IGRP neighbor's backup server table. The default is 15 seconds.

[**no**] **ipx default-route**

To forward towards the default network, if known, all packets for which a route to the destination network is unknown, use the **ipx default-route** global configuration command. To discard all packets for which a route to the destination network is unknown, use the **no** form of this command.

ipx delay *ticks*
no ipx delay

To set the tick count, use the **ipx delay** interface configuration command. To reset the default increment in the delay field, use the **no** form of this command.

ticks	Number of IBM clock ticks of delay to use. One clock tick is 1/18th of a second (approximately 55 milliseconds). The default is determined from the delay configured on the interface with the **delay** command. It is (interface delay + 333) / 334.

ipx down *network*
no ipx down

To administratively shut down an IPX network, use the **ipx down** interface configuration command. To restart the network, use the **no** form of this command.

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

[**no**] **ipx gns-reply-disable**

To disable the sending of replies to IPX GNS queries, use the **ipx gns-reply-disable** interface configuration command. To return to the default, use the **no** form of this command.

ipx gns-response-delay [*milliseconds*]
no ipx gns-response-delay

To change the delay when responding to Get Nearest Server (GNS) requests, use the **ipx gns-response-delay** global configuration command. To return to the default delay, use the **no** form of this command.

milliseconds	(Optional) Time, in milliseconds, that the router waits after receiving a Get Nearest Server request from an IPX client before responding with a server name to that client. The default is zero, which indicates no delay.

[**no**] **ipx gns-round-robin**

To rotate using a round-robin selection method through a set of eligible servers when responding to Get Nearest Server (GNS) requests, use the **ipx gns-round-robin** global configuration command. To use the most recently learned server, use the **no** form of this command.

[**no**] **ipx hello-interval eigrp** *autonomous-system-number seconds*

To configure the interval between IPX Enhanced IGRP hello packets, use the **ipx hello-interval eigrp** interface configuration command. To restore the default interval, use the **no** form of this command.

autonomous-system-number	Autonomous system number. It can be a decimal integer from 1 to 65535.
seconds	Interval between hello packets, in seconds. The default interval is 5 seconds, which is one-third of the default hold time.

[**no**] **ipx helper-address** *network.node*

To forward broadcast packets (except type 20 propagation packets) to a specified server, use the **ipx helper-address** interface configuration command. To disable this function, use the **no** form of this command.

network	Network on which the target IPX server resides. This is an eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFFD. A network number of –1 indicates all-nets flooding. You do not need to specify leading zeros in the network number. For example, for the network number 000000AA you can enter AA.
node	Node number of the target Novell server. This is a 48-bit value represented by a dotted triplet of four-digit hexadecimal numbers (*xxxx.xxxx.xxxx*). A node number of FFFF.FFFF.FFFF matches all servers.

[**no**] **ipx helper-list** *access-list-number*

To assign an access list to an interface to control broadcast traffic (including type 20 propagation packets), use the **ipx helper-list** interface configuration command. To remove the access list from an interface, use the **no** form of this command.

access-list-number	Number of the access list. All outgoing packets defined with either standard or extended access lists 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, it is a decimal number from 900 to 999.

[**no**] **ipx hold-time eigrp** *autonomous-system-number seconds*

To specify the length of time a neighbor should consider IPX Enhanced IGRP hello packets valid, use the **ipx hold-time eigrp** interface configuration command. To restore the default time, use the **no** form of this command.

autonomous-system-number	IPX Enhanced IGRP autonomous system number. It can be a decimal integer from 1 to 65535.
seconds	Hold time, in seconds. The hold time is advertised in hello packets and indicates to neighbors the length of time they should consider the sender valid. The default hold time is 15 seconds, which is three times the hello interval.

[**no**] **ipx input-network-filter** *access-list-number*

To control which networks are added to the router's routing table, use the **ipx input-network-filter** interface configuration command. To remove the filter from the interface, use the **no** form of this command.

access-list-number	Number of the access list. All incoming packets defined with either standard or extended access lists 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, it is a decimal number from 900 to 999.

[**no**] **ipx input-sap-filter** *access-list-number*

To control which services are added to the router's SAP table, use the **ipx input-sap-filter** interface configuration command. To remove the filter, use the **no** form of this command.

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

ipx internal-network *network-number*
no internal-network [*network-number*]

To set an internal network number for use by NLSP and IPXWAN, use the **ipx internal-network** global configuration command. To remove an internal network number, use the **no** form of this command.

network-number	Number of the internal network.

ipx ipxwan [*local-node* {*network-number* | **unnumbered**}
local-server-name retry-interval retry-limit]
no ipxwan

To configure the IPXWAN protocol on a serial interface, use the **ipx ipxwan** interface configuration command. To disable the IPXWAN protocol, use the **no** form of this command.

local-node	(Optional) Primary network number of the router. This is an IPX network number that is unique across the entire internet. On NetWare 3.*x* servers, the primary network number is called the internal network number. The router with the higher number is determined to be the link master. A value of 0 causes the router to use the configured internal network number.
network-number	(Optional) IPX network number to be used if this router is the one determined to be the link master. The number is an eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFFD. A value 0 is equivalent to specifying the keyword **unnumbered**. You do not need to specify leading zeros in the network number. For example, for the network number 000000AA you can enter AA.
unnumbered	(Optional) Specifies that no IPX network number is defined for the link. This is equivalent to specifying a value of 0 for the *network-number* argument.

local-server-name	(Optional) Name of the local router. It can be up to 47 characters long, and can contain uppercase letters, digits, underscores (_), hyphens (–), and at signs (@). On NetWare 3.*x* servers, this is the router name. For our routers, this is the name of the router as configured via the **hostname** command (that is, the name that precedes the standard prompt, which is an angle bracket (>) for EXEC mode or a pound sign (#) for privileged EXEC mode).
retry-interval	(Optional) Retry interval, in seconds. This interval defines how often the router will retry the IPXWAN startup negotiation if a startup failure occurs. Retries will occur until the retry limit defined by the *retry-limit* argument is reached. It can be a value from 1 through 600. The default is 20 seconds.
retry-limit	(Optional) Maximum number of times the router retries the IPXWAN startup negotiation before taking the action defined by the **ipx ipxwan error** command. It can be a value from 1 through 100. The default is 3.

[**no**] **ipx ipxwan error** [**shutdown** | **reset** | **resume**]

To define how to handle IPXWAN when a serial link fails, use the **ipx ipxwan error** interface configuration command. To restore the default, use the **no** form of this command.

reset	(Optional) Resets the link when it fails. This is the default action.
resume	(Optional) When a link fails, IPXWAN ignores the failure, takes no special action, and resumes the connection.
shutdown	(Optional) Shuts down the link when it fails.

[**no**] **ipxwan static**

To negotiate static routes on a link configured for IPXWAN, use the **ipx ipxwan static** interface configuration command. To disable static route negotiation, use the **no** form of this command.

[**no**] **ipx link-delay** *microseconds*

To specify the link delay, use the **ipx link-delay** interface configuration command. To return to the default link delay, which is no delay, use the **no** form of this command.

microseconds	Delay, in microseconds. The default is no link delay (a delay of 0).

[**no**] **ipx maximum-hops** *hops*

To set the maximum hop count allowed for IPX packets, use the **ipx maximum-hop** global configuration command. To return to the default number of hops, use the **no** form of this command.

hops	Maximum number of hops considered to be reachable by non-RIP routing protocols. Also, maximum number of routers that an IPX packet can traverse before being dropped. It can be a value from 16 through 254. The default is 16 hops.

ipx maximum-paths *paths*
no ipx maximum-paths

To set the maximum number of equal-cost paths the router uses when forwarding packets, use the **ipx maximum-paths** global configuration command. To restore the default value, use the **no** form of this command.

paths	Maximum number of equal-cost paths which the router will use. It can be an integer from 1 to 512. The default is 1.

[**no**] **ipx netbios input-access-filter** {**host** | **bytes**} *name*

To control incoming IPX NetBIOS messages, use the **ipx netbios input-access-filter** interface configuration command. To remove the filter, use the **no** form of this command.

host	Indicates that the following argument is the name of a NetBIOS access filter previously defined with one or more **netbios access-list host** commands.
bytes	Indicates that the following argument is the name of a NetBIOS access filter previously defined with one or more **netbios access-list bytes** commands.
name	Name of a NetBIOS access list.

[**no**] **ipx netbios output-access-filter** {**host** | **bytes**} *name*

To control outgoing NetBIOS messages, use the **ipx netbios output-access-filter** interface configuration command. To remove the filter, use the **no** form of this command.

host	Indicates that the following argument is the name of a NetBIOS access filter previously defined with one or more **netbios access-list host** commands.
bytes	Indicates that the following argument is the name of a NetBIOS access filter previously defined with one or more **netbios access-list bytes** commands.
name	Name of a previously defined NetBIOS access list.

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

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.

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 FFFFFFFD. You do not need to specify leading zeros in the network number. For example, for the network number 000000AA you can enter 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.
- **hdlc** (for serial interfaces only)—Use HDLC encapsulation.
- **novell-ether** (for Ethernet interfaces only)—Use Novell's "Ethernet_802.3" encapsulation, which 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, which 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.
  (for Token Ring interfaces)—This encapsulation consists of a standard 802.5 MAC header followed by an 802.2 LLC header.
  (for FDDI interfaces)—This encapsulation consists of a standard FDDI MAC header followed by an 802.2 LLC header.
- **snap** (for Ethernet interfaces)—Use Novell Ethernet_Snap encapsulation, which consists of a standard 802.3 MAC header followed by an 802.2 SNAP LLC header.
  (for Token Ring and FDDI interfaces)— This encapsulation consists of a standard 802.5 or FDDI MAC header followed by an 802.2 SNAP LLC header.

secondary	(Optional) Indicates an additional (secondary) network configured after the first (primary) network.

[**no**] **ipx nlsp csnp-interval** *seconds*

To configure the NLSP complete sequence number PDU (CSNP) interval, use the **ipx nlsp csnp-interval** interface configuration command. To restore the default value, use the **no** form of this command.

seconds	Time, in seconds, between the transmission of CSNPs on multiaccess networks. This interval applies to the designated router only. The interval can be a number in the range 1 to 600. The default is 30 seconds.

[**no**] **ipx nlsp enable**

To enable NLSP routing on the primary network configured on this interface or subinterface, use the **ipx nlsp enable** interface configuration command. To disable NLSP routing on the primary network configured on this interface or subinterface, use the **no** form of this command.

[**no**] **ipx nlsp hello-interval** *seconds*

To configure the interval between the transmission of hello packets, use the **ipx nlsp hello-interval** interface configuration command. To restore the default value, use the **no** form of this command.

seconds	Time, in seconds, between the transmission of hello packets on the interface. It can be a decimal integer in the range 1 to 1600. The default is 10 seconds for the designated router and 20 seconds for nondesignated routers.

[**no**] **ipx nlsp metric** *metric-number*

To configure the NLSP cost for an interface, use the **ipx nlsp metric** interface configuration command. To restore the default cost, use the **no** form of this command.

metric-number	Metric value for the interface. It can be a decimal integer from 0 to 63. The default varies based on the throughput of the link connected to the interface.

[**no**] **ipx nlsp priority** *priority-number*

To configure the election priority of the specified interface for designated router election, use the **ipx nlsp priority** interface configuration command. To restore the default priority, use the **no** form of this command.

priority-number	Election priority of the designated router for the specified interface. This can be a number in the range 0 to 127. This value is unitless. The default is 44.

[**no**] **ipx nlsp retransmit-interval** *seconds*

To configure the link-state packet (LSP) retransmission interval on WAN links, use the **ipx nlsp retransmit-interval** interface configuration command. To restore the default interval, use the **no** form of this command.

seconds	LSP retransmission interval, in seconds. This can be a number in the range 1 to 30. The default is 5 seconds.

[**no**] **ipx nlsp rip** [**on** | **off** | **auto**]

To configure RIP compatibility when NLSP is enabled, use the **ipx nlsp rip** interface configuration command. To restore the default, use the **no** form of this command.

on	(Optional) Always generates and sends RIP periodic traffic.
off	(Optional) Never generates and sends RIP periodic traffic.
auto	(Optional) Sends RIP periodic traffic only if another RIP router in sending periodic RIP traffic. This is the default.

[**no**] **ipx nlsp sap** [**on** | **off** | **auto**]

To configure SAP compatibility when NLSP in enabled, use the **ipx nlsp sap** interface configuration command. To restore the default, use the **no** form of this command.

on	(Optional) Always generates and sends SAP periodic traffic.
off	(Optional) Never generates and sends SAP periodic traffic.
auto	(Optional) Sends SAP periodic traffic only if another SAP router in sending periodic SAP traffic. This is the default.

[**no**] **ipx output-gns-filter** *access-list-number*

To control which servers are included in the Get Nearest Server (GNS) responses sent by the router, use the **ipx output-gns-filter** interface configuration command. To remove the filter from the interface, use the **no** form of this command.

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

[**no**] **ipx output-network-filter** *access-list-number*

To control the list of networks included in routing updates sent out an interface, use the **ipx output-network-filter** interface configuration command. To remove the filter from the interface, use the **no** form of this command.

access-list-number	Number of the access list. All outgoing packets defined with either standard or extended access lists 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, it is a decimal number from 900 to 999.

ipx output-rip-delay *delay*
no ipx output-rip-delay

To adjust the delay between the individual packets sent in a multiple-packet routing update, use the **ipx output-rip-delay** interface configuration command. To return to the default value, use the **no** form of this command.

delay	Delay, in milliseconds, between packets in a multipacket RIP update. The default delay is 0 (that is, no delay). The delay recommended by Novell is 55 ms.

ipx output-sap-delay *delay*
no ipx output-sap-delay

To set a delay between packets sent in a multipacket Service Advertisement Protocol (SAP) update, use the **ipx output-sap-delay** interface configuration command. To disable the delay mechanism, use the **no** form of this command.

delay	Delay, in milliseconds, between packets in a multipacket SAP update. The default delay is 0 (that is, no delay). The delay recommended by Novell is 55 ms.

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

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

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.

[**no**] **ipx pad-process-switched-packets**

To control whether odd-length packets are padded so as to be sent as even-length packets on an interface, use the **ipx pad-process-switched-packets** interface configuration command. To disable padding, use the **no** form of this command.

[**no**] **ipx ping-default** {**cisco** | **novell**}

To select the ping type that the router transmits, use the **ipx ping-default** global configuration command. To return to the default ping type, use the **no** form of this command.

cisco	Transmits standard Cisco pings. This is the default.
novell	Transmits standard Novell pings.

[**no**] **ipx rip-max-packetsize** *bytes*

To configure the maximum packet size of RIP updates sent out the interface, use the **ipx rip-max-packetsize** interface configuration command. To restore the default packet size, use the **no** form of this command.

bytes	Maximum packet size in bytes. The default is 432 bytes, which allows for 50 routes at 8 bytes each plus a 32-byte IPX RIP header.

[**no**] **ipx rip-multiplier** *multiplier*

To configure the interval at which a network's or server's RIP entry ages out, use the **ipx rip-multiplier** interface configuration command. To restore the default interval, use the **no** form of this command.

multiplier	Multiplier used to calculate the interval at which to age out RIP routing table entries. This can be any positive integer. The value you specify is multiplied by the RIP update interval to determine the aging-out interval. The default is three times the RIP update interval.

ipx route {*network* | **default**} *network.node* [**floating-static**]
no 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.

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 FFFFFFFD. You do not need to specify leading zeros in the network number. For example, for the network number 000000AA, you can just enter AA.
default	Default network number as defined by the **ipx default-route** global configuration command.
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 FFFFFFFD. You do not need to specify leading zeros in the network number. For example, for the network number 000000AA, you can enter 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*).
floating-static	(Optional) Specifies that this route is a floating-static route. This is a static route that can be overridden by a dynamically learned route.

[**no**] **ipx route-cache** [**cbus** | **sse**]

To enable IPX fast switching and autonomous switching, use the **ipx route-cache** interface configuration command. To disable fast switching, use the **no** form of this command. If no keywords are specified, fast switching is enabled. By default, fast switching is enabled, and autonomous switching and SSE switching are disabled.

cbus	(Optional) Enables IPX autonomous switching.
sse	(Optional) Enables SSE fast switching.

ipx router {**eigrp** *autonomous-system-number* | **nlsp** | **rip**}

To specify the routing protocol to use, use the **ipx router** global configuration command.

eigrp *autonomous-system-number*	Enables the Enhanced IGRP routing protocol. The argument *autonomous-system-number* is the IPX Enhanced IGRP autonomous system number. It can be a decimal integer from 1 to 65535.
nlsp	Enables the NLSP routing protocol.
rip	Enables the RIP routing protocol. It is on by default.

ipx router-filter *access-list-number*
no ipx router-filter

To control the routers from which packets are accepted, use the **ipx router-filter** interface configuration command. To remove the filter from the interface, use the **no** form of this command.

access-list-number	Number of the access list. All incoming packets defined with either standard or extended access lists 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, it is a decimal number from 900 to 999.

[**no**] **ipx router-sap-filter** *access-list-number*

To filter Service Advertisement Protocol (SAP) messages received from a particular router, use the **ipx router-sap-filter** interface configuration command. To remove the filter, use the **no** form of this command.

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

ipx routing [*node*]
no ipx routing

To enable IPX routing, use the **ipx routing** global configuration command. To disable IPX routing, use the **no** form of this command.

node	(Optional) Node number of the router. This is a 48-bit value represented by a dotted triplet of four-digit hexadecimal numbers (*xxxx.xxxx.xxxx*). It must not be a multicast address. If you omit *node*, the router uses the hardware MAC address currently assigned to it as its node address. This is the MAC address of the first Ethernet, Token Ring, or FDDI interface card. If no satisfactory interfaces are present in the router (such as only serial interfaces), you must specify *node*.

[**no**] **ipx sap** *service-type name network.node socket hop-count*

To specify static Service Advertisement Protocol (SAP) entries, use the **ipx sap** global configuration command. To remove static SAP entries, use the **no** form of this command.

service-type	SAP service-type number. The sample IPX SAP services table in the *Router Products Command Reference* lists some IPX SAP services.
name	Name of the server that provides the service.

network.node	Network number and node address of the server. 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 FFFFFFFD. 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 Novell server. This is a 48-bit value represented by a dotted triplet of four-digit hexadecimal numbers (*xxxx.xxxx.xxxx*).
socket	Socket number for this service. The IPX socket numbers table in the *Router Products Command Reference* publication lists some IPX socket numbers.
hop-count	Number of hops to the server.

[**no**] **ipx sap-incremental** [**eigrp** *autonomous-system-number*] [**rsup-only**]

To send SAP updates only when a change occurs in the SAP table, use the **ipx sap-incremental eigrp** interface configuration command. To send periodic SAP updates, use the **no** form of this command.

autonomous-system-number	(Optional) IPX Enhanced IGRP autonomous system number. It can be a decimal integer from 1 to 65535.
rsup-only	(Optional) Indicates that the system uses Enhanced IGRP on this interface to carry reliable SAP update information only. RIP routing updates are used, and Enhanced IGRP routing updates are ignored.

ipx sap-interval *interval*
no ipx sap-interval

To configure less frequent Service Advertisement Protocol (SAP) updates over slow links, use the **ipx sap-interval** interface configuration command. To return to the default value, use the **no** form of this command.

interval	Interval, in minutes, between SAP updates sent by the router. The default value is 1 minute. If *interval* is 0, periodic updates are never sent.

[**no**] **ipx sap-max-packetsize** *bytes*

To configure the maximum packet size of SAP updates sent out the interface, use the **ipx sap-max-packetsize** interface configuration command. To restore the default packet size, use the **no** form of this command.

bytes	Maximum packet size in bytes. The default is 480 bytes, which allows for seven servers (64 bytes each) plus a 32-byte IPX SAP header.

[**no**] **ipx sap-multiplier** *multiplier*

To configure the interval at which a network's or server's SAP entry ages out, use the **ipx sap-multiplier** interface configuration command. To restore the default interval, use the **no** form of this command.

multiplier	Multiplier used to calculate the interval at which to age out SAP routing table entries. This can be any positive integer. The value you specify is multiplied by the SAP update interval to determine the aging-out interval. The default is three times the SAP update interval.

ipx sap-queue-maximum *number*
no ipx sap-interval

To configure the maximum length of the queue of pending input SAP GNS requests and SAP query packets, use the **ipx sap-queue-maximum** global configuration command. To return to the default value, use the **no** form of this command.

number	Maximum length of the queue of pending SAP requests. By default, there is no limit to the number of pending SAP requests that the router stores in this queue.

[**no**] **ipx source-network-update**

To repair corrupted network numbers, use the **ipx source-network-update** interface configuration command. To disable this feature, use the **no** form of this command.

[**no**] **ipx split-horizon eigrp** *autonomous-system-number*

To configure split horizon, use the **ipx split-horizon eigrp** interface configuration command. To disable split horizon, use the **no** form of this command.

autonomous-system-number	IPX Enhanced IGRP autonomous system number. It can be a decimal integer from 1 to 65535.

[**no**] **ipx throughput** *bits-per-second*

To configure the throughput, use the **ipx throughput** interface configuration command. To restore the default throughput, use the **no** form of this command.

bits-per-second	Throughput, in bits per second. No default throughput is defined.

[no] ipx type-20-helpered

To forward IPX type 20 propagation packet broadcasts to specific network segments, use the **ipx type-20-helpered** interface configuration command. To disable this function, use the **no** form of this command.

[no] ipx type-20-input-checks

To restrict the acceptance of IPX type 20 propagation packet broadcasts, use the **ipx type-20-input-checks** global configuration command. To remove these restrictions, use the **no** form of this command.

[no] ipx type-20-output-checks

To restrict the forwarding of IPX type 20 propagation packet broadcasts, use the **ipx type-20-output-checks** global configuration command. To remove these restrictions, use the **no** form of this command.

[no] ipx type-20-propagation

To forward IPX type 20 propagation packet broadcasts to other network segments, use the **ipx type-20-propagation** interface configuration command. To disable both the reception and forwarding of type 20 broadcasts on an interface, use the **no** form of this command.

ipx update-time *interval*
no ipx update-time

To adjust the IPX routing update timers, use the **ipx update-time** interface configuration command. To restore the default value, use the **no** form of this command.

interval	Interval, in seconds, at which IPX routing updates are sent. The default is 60 seconds. The minimum interval is 10 seconds.

[**no**] **ipx watchdog-spoof**

To have the router respond to a server's watchdog packets on behalf of a remote client, use the **ipx watchdog-spoof** interface configuration command. To disable spoofing, use the **no** form of this command.

[**no**] **lsp-gen-interval** *seconds*

To set the minimum interval at which link-state packets (LSPs) are generated, use the **lsp-gen-interval** router configuration command. To restore the default interval, use the **no** form of this command.

seconds	Minimum interval, in seconds. It can be a number in the range 0 through 120. The default is 5 seconds.

[**no**] **lsp-mtu** *bytes*

To set the maximum size of a link-state packet (LSP), use the **lsp-mtu** router configuration command. To restore the default MTU size, use the **no** form of this command.

bytes	MTU size, in bytes. It can be a decimal number in the range 512 through 4096. The default is 512 bytes.

[**no**] **lsp-refresh-interval** *seconds*

To set the link-state packet (LSP) refresh interval, use the **lsp-refresh-interval** router configuration command. To restore the default refresh interval, use the **no** form of this command.

seconds	Refresh interval, in seconds. It can be a value in the range 1 through 50000 seconds. The default is 7200 seconds.

[**no**] **max-lsp-lifetime** *seconds*

To set the maximum time that link-state packets (LSPs) persist, use the **max-lsp-lifetime** router configuration command. To restore the default time, use the **no** form of this command.

seconds	Lifetime of LSP, in seconds. It can be a number in the range 1 through 50000 seconds. The default is 7500 seconds.

[**no**] **netbios access-list host** *name* {**deny** | **permit**} *string*
[**no**] **netbios access-list bytes** *name* {**deny** | **permit**} *offset byte-pattern*

To define an IPX NetBIOS access list filter, use the **netbios access-list** interface configuration command. To remove a filter, use the **no** form of the command.

host	Indicates that the following argument is the name of a NetBIOS access filter previously defined with one or more **netbios access-list host** commands.
bytes	Indicates that the following argument is the name of a NetBIOS access filter previously defined with one or more **netbios access-list bytes** commands.
name	Name of the access list being defined. The name can be an alphanumeric string.
deny	Denies access if the conditions are matched.
permit	Permits access if the conditions are matched.
string	Character string that identifies one or more NetBIOS host names. It can be up to 14 characters long. The argument *string* can include the following wildcard characters: • *—Match one or more characters. You can use this wildcard character only at the end of a string. • ?—Match any single character.

offset	Decimal number that indicates the number of bytes into the packet at which the byte comparison should begin. An offset of 0 indicates the beginning of the NetBIOS packet header, which is at the end of the IPX header.
byte-pattern	Hexadecimal pattern that represents the byte pattern to match. It can be up to 16 bytes (32 digits) long and must be an even number of digits. The argument *byte-pattern* can include the following wildcard character: • **—Match any digits for that byte.

[**no**] **network** {*network-number* | **all**}

To enable IPX Enhanced IGRP on the router, use the **network** IPX-router configuration command. To disable IPX Enhanced IGRP on the router, use the **no** form of this command.

network-number	IPX network number.
all	Enables the routing protocol for all IPX networks configured on the router.

ping [**ipx**] [*address*]

To check host reachability and network connectivity, use the **ping** privileged EXEC command.

ipx	(Optional) Specifies the IPX protocol.
address	(Optional) Address of system to ping.

ping ipx {*host* | *address*}

To check host reachability and network connectivity, use the **ping ipx** user EXEC command.

ipx	Specifies the IPX protocol.

host	Host name of system to ping.
address	Address of system to ping.

[**no**] **redistribute** {**rip** | **eigrp** *autonomous-system-number* | **connected** | **static** | **floating-static**}

To redistribute from one routing domain into another, and vice versa, use the **redistribute** IPX-router configuration command. To disable this feature, use the **no** form of this command.

rip	Specifies the RIP protocol.
eigrp *autonomous-system-number*	Specifies the Enhanced IGRP protocol and the autonomous system number. It can be a decimal integer from 1 to 65535.
connected	Specifies connected routes.
static	Specifies static routes.
floating-static	Specifies a floating static route. This is a static route that can be overridden by a dynamically learned route.

show ipx accounting [**checkpoint**]

To display the active accounting or checkpointed database, use the **show ipx accounting** EXEC command.

checkpoint	(Optional) Displays entries in the checkpointed database.

show ipx cache

To display the contents of the IPX fast-switching cache, use the **show ipx cache** EXEC command.

show ipx eigrp neighbors [**servers**] [*autonomous-system-number* | *interface*]

To display the neighbors discovered by Enhanced IGRP, use the **show ipx eigrp neighbors** EXEC command.

servers	(Optional) Displays the server list advertised by each neighbor. This is displayed only if the **ipx sap incremental** command is enabled on the interface on which the neighbor resides.
autonomous-system-number	(Optional) Autonomous system number. It can be a decimal integer from 1 to 65535.
interface	(Optional) Interface type and number.

show ipx eigrp topology [*network-number*]

To display the IPX enhanced IGRP topology table, use the **show ipx eigrp topology** EXEC command.

network-number	(Optional) IPX network number whose topology table entry to display

show ipx interface [*type number*]

To display the status of the IPX interfaces configured in the router and the parameters configured on each interface, use the **show ipx interface** privileged EXEC command.

type	(Optional) Interface type. It can be one of the following types: asynchronous, dialer, Ethernet (IEEE 802.3), FDDI, loopback, null, serial, Token Ring, or tunnel.
number	(Optional) Interface number.

show ipx nlsp database [*lspid*] [**detail**]

To display the entries in the link-state packet (LSP) database, use the **show ipx nlsp database** EXEC command.

lspid	(Optional) Link-state protocol ID (LSPID). You must specify this in the format *xxxx.xxxx.xxxx.yy-zz* or *name.yy-zz*.
detail	(Optional) Displays the contents of the LSP database entries. If you omit this keyword, only a summary display is shown.

show ipx nlsp neighbors [*interface*] [**detail**]

To display the router's NLSP neighbors and their states, use the **show ipx nlsp neighbors** EXEC command.

interface	(Optional) Interface type and number.
detail	(Optional) Displays detailed information about the neighbor. If you omit this keyword, only a summary display is shown.

show ipx route [*network*] [**default**] [**detailed**]

To display the contents of the IPX routing table, use the **show ipx route** user EXEC command.

network	(Optional) Number of the network whose routing table entry you want to display. This is an eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFFD. You do not need to specify leading zeros in the network number. For example, for the network number 000000AA, you can just enter AA.
default	(Optional) Displays the default route.
detailed	(Optional) Displays detailed route information.

show ipx servers [**sorted** [**name** | **net** | **type**]]

To list the IPX servers discovered through SAP advertisements, use the **show ipx servers** user EXEC command.

unsorted	(Optional) Does not sort entries when displaying IPX servers.
sorted	(Optional) Sorts the display of IPX servers according to the keyword that follows.
name	(Optional) Displays the IPX servers alphabetically by server name.
net	(Optional) Displays the IPX servers numerically by network number.
type	(Optional) Displays the IPX servers numerically by SAP service type. This is the default.

show ipx traffic

To display information about the number and type of IPX packets transmitted and received by the router, use the **show ipx traffic** user EXEC command.

[**no**] **spf-interval** *seconds*

To control how often the router performs the Shortest Path First (SPF) calculation, use the **spf-interval** router configuration command. To restore the default interval, use the **no** form of this command.

seconds	Minimum amount of time between Shortest Path First (SPF) calculations, in seconds. It can be a number in the range 1 through 120. The default is 5 seconds.