Distributed Routing Software

Quick Reference Guide

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This manual provides quick reference information about installing, configuring, and operating the Distributed Routing Software system software.

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Finding What You Need

This book

THIS is a quick reference guide to configuring and monitoring the main routing protocols and interfaces available with DIGITAL Distributed Routing Software.

The protocols and interfaces are in alphabetical order, from AppleTalk to X.25.

For each protocol or interface, we give you:

- A flowchart which shows the basic configuration procedure for that protocol or interface. Depending on your network, you will probably need to do more configuration than is shown here.
- A summary of the configuration commands.
- A summary of the console commands.

Overleaf, there is a summary of how to access the CONFIG and CGWCON processes, for configuration and console tasks.

The protocols and interfaces

AppleTalk Phase 1

AppleTalk Phase 2

Border Gateway Protocol 4 (BGP4)

Dial Circuits

Frame Relay

IP

IPX

ISDN

OSI/DNA V

Protocol Independent Multicast (PIM)

Point-to-Point Protocol (PPP)

SDLC Relay

SNMP

V.25 bis

WAN-Restoral and WAN-Reroute

X.25

X.25-LLC2

X.25 Switching Feature

Accessing the CONFIG Process

1 After the router boots, the console displays the OPCON prompt (*). Enter **status** to display the process ID (pid) of CONFIG, which is usually 6.

2 Enter **talk** and the pid (**6**) for CONFIG. This displays the following information:

```
* t 6
Gateway user configuration
Config>
```

If the Config> prompt does not appear, press RETURN again. You can now enter the configuration commands.

3 When you are done entering the configuration commands, do the following to make the new configuration active:

a Press **Ctrl/P** after the prompt:

```
Config> ^p
*
```

b Enter **restart** after the OPCON prompt (*).

c Respond **yes** to the following prompt:

```
Are you sure you want to restart the gateway?
```

The new configuration is loaded when the console displays the following information:

```
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MOS Operator Control
*
```

Accessing the CGWCON Process

Use the CGWCON process (also known as GWCON) to monitor protocols, network interfaces, and system messages. You cannot access the CGWCON process if the router is in configuration-only mode (the prompt is Config only>). To display the CGWCON prompt (+):

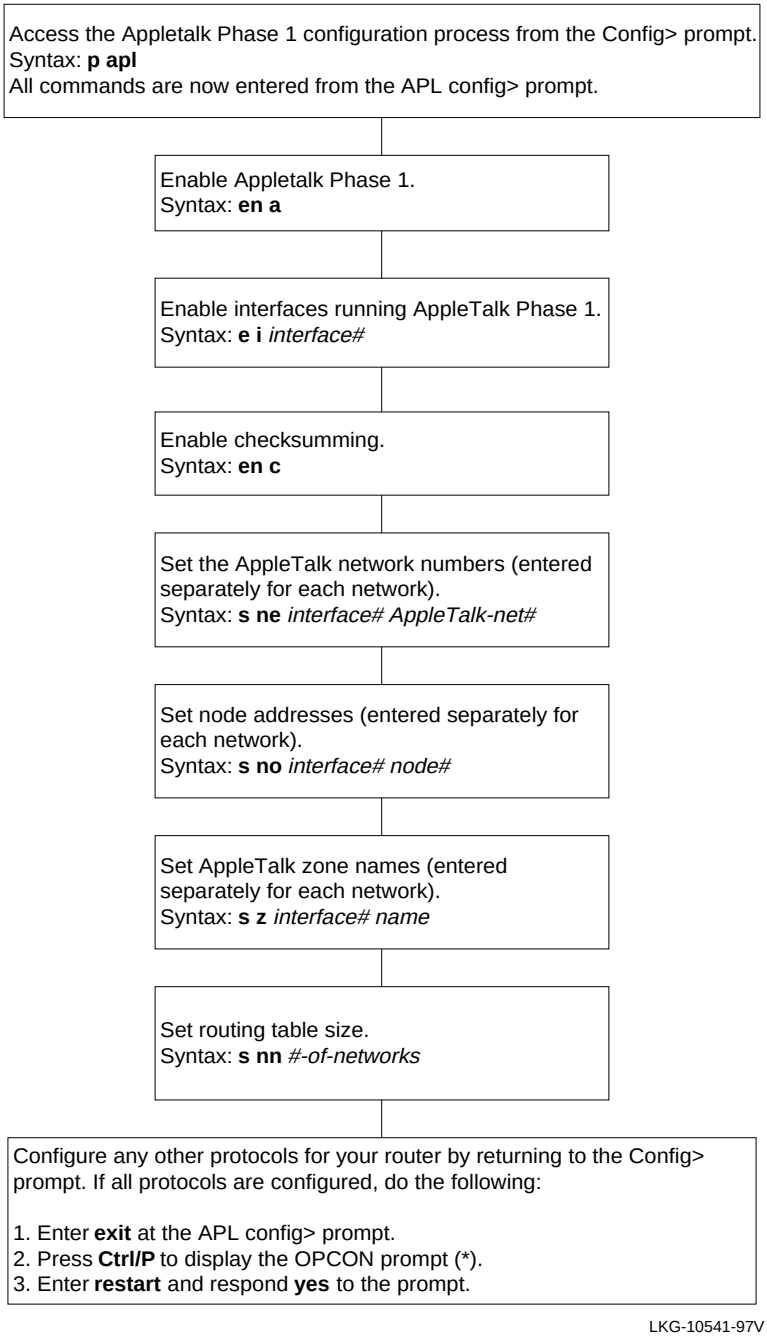
1 After the router boots, the console displays the OPCON prompt (*). Enter **status** to display the process ID (pid) of CGWCON.

2 Enter **talk** and the pid for CGWCON (usually 5). This displays the CGWCON prompt (+). You can now enter the monitoring commands.

```
* t 5
CGW Operator Console
+
```

3 To return to the * prompt, press **Ctrl/P**.

AppleTalk Phase 1



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AppleTalk Phase 1 Configuration Commands

Enter the following configuration commands at the APL config> prompt. To list the configuration commands and their options, enter a ?.

After you have configured all of the protocols, enter **restart** at the OPCON prompt (*), and respond **yes** after the following prompt:

Are you sure you want to restart the router?

disable

apl
Disables the AppleTalk Phase 1 protocol as a whole.

checksum
Disables checksumming on packets that the specified interface generates.

interface *interface#*
Disables AppleTalk Phase 1 on the specified interface.

takedown
Prevents ZIP takedown and bringup packets from affecting the routers network numbers and zone names. This is the default for security reasons.

enable

apl
Enables the AppleTalk Phase 1 packet forwarder.

checksum
Enables checksumming on packets that the specified interface generates.

interface *interface#*
Enables AppleTalk Phase 1 on the specified interface.

takedown
Allows any node to use ZIP takedown and bringup packets to change the routers network numbers and zone names.

list
Displays the current AppleTalk Phase 1 configuration.

set

ddp-header long *interface#*
Specifies long DDP headers for packets sent on that interface number. This is the default, and is recommended by Apple.

ddp-header short *interface#*
Specifies short DDP headers for packets sent on that interface number. Use this only for compatibility with software that does not support long DDP headers.

net-number *interface# AppleTalk Phase I-net#*
Assigns an AppleTalk Phase 1 network number to the associated directly connected network.

node-number *interface# node#*
Specifies the number of the interface. This is optional. The default is autoconfigure.

nnets*#*
Specifies the size of the AppleTalk Phase 1 routing table.

zone *interface# name*
Specifies the zone name to be seeded on this network.

exit
Returns to the previous prompt level.

AppleTalk Phase 1 Console Commands

Enter these commands after the APL> prompt.

To list the AppleTalk Phase 1 console commands and their options, enter a ? after the APL> prompt.

counters

Displays the number of packet overflows on each network that sends and receives AppleTalk Phase 1 packets.

dump

Displays the routing table information about the interfaces on the router that forwards AppleTalk Phase 1 packets.

- *dest net*
  The destination network number in decimal.
- *cost*
  The number of route hops to this destination network.
- *state*
  The state of the entry in the routing table.
- *next hop*
  The next hop for packets going to networks that are not directly connected. For directly connected networks, this is node number 0.
- *source*
  The originating network type for that routing table entry. *APL* indicates an AppleTalkPhase 1 network. *AP2* indicates an AppleTalk Phase II.
- *zone*
  Specifies the name for that network. The zone name is enclosed in double quotes in case there are embedded spaces or nonprinting characters.

interface

Displays the addresses of all the interfaces in the router on which AppleTalk Phase 1 is enabled.

exit

Returns to the previous prompt level

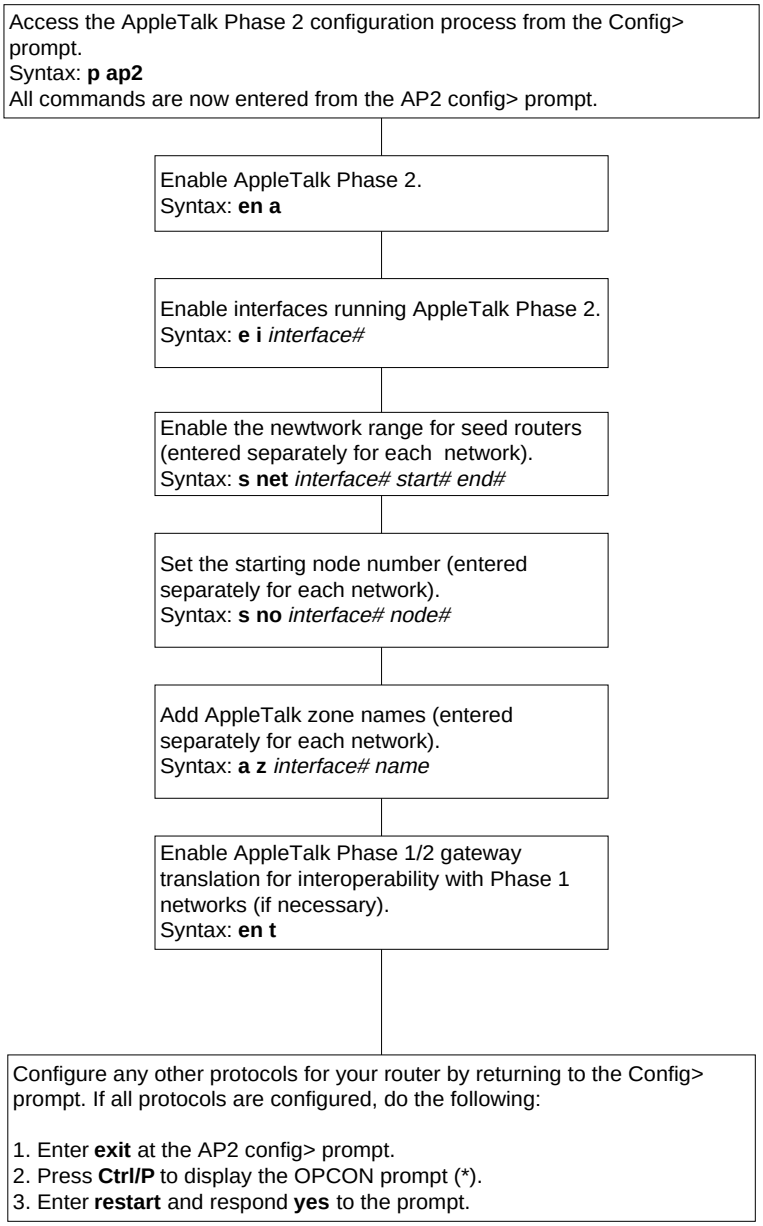
Further Configuration Considerations

To allow Phase1 hosts to transparently communicate with Phase 2 hosts, you must enter the AppleTalk Phase 2 configuration process on the router running AP2 and enable the AppleTalk Phase 1/2 translation function via that router's AP2 **enable translation** configuration command.

In addition to providing the gateway translation function, this router now acts as both a Phase1 and Phase 2 router on whatever interfaces these protocols are configured. Routing information is passed between Phase 1 and Phase 2 networks by the gateway resulting in a (logically) single internet.

For more information on the **enable translation** command and AppleTalk Phase 2, refer to the chapter "Configuring AppleTalk Phase 1" in the *Routing Protocols User's Guide.*

AppleTalk Phase 2



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AppleTalk Phase 2 Configuration Commands

Enter the following configuration commands at the AP2 config> prompt. To list the configuration commands and their options, enter a ?.

After you have configured all of the protocols, enter **restart** at the OPCON prompt (*), and respond **yes** after the following prompt:

Are you sure you want to restart the router?

add

defaultzone *interface# zonename*
Adds the zone name to the interface zone list as the default for the interface.

ip-tunnel-address *address* DEC
Adds an IP tunnel endpoint at *address* (*n.n.n.n*, each *n* a decimal integer). DEC specifies encapsulation.

nfilter in *interface# first-network# last-network#*
Adds a network filter to the input of the interface. The network range must match that of the interface.

nfilter out *interface# first-network# last-network#*
Adds a network filter to the output of the interface. The network range must match that of the interface.

zfilter in *interface# zonename*
Adds a zone name filter to the input of the interface.

zfilter out *interface# zonename*
Adds a zone name filter to the output of the interface.

zone *interface# zonename*
Adds the zone name to the interface zone list.

delete

interface *interface#*
Deletes the AppleTalk 2 interface.

ip-tunnel-address *address*
Deletes the IP-tunnel endpoint at *address*.

nfilter in *interface# first-network# last-network#*
Deletes a network filter from the input of the interface.

nfilter out *interface# first-network# last-network#*
Deletes a network filter from the output of the interface.

zfilter in *interface# zonename*
Deletes a zone name filter from the input of the interface.

zfilter out *interface# zonename*
Deletes a zone name filter from the output of the interface.

zone *interface# zonename*
Deletes a zone name from the interface zone list.

disable

ap2
Disables the AppleTalk Phase 2 packet forwarder as a whole.

checksum
Disables checksumming on packets that the specified interface generates.

interface *interface#*
Disables AppleTalk Phase 2 functions on the specified interface.

ip-tunnel
Disables IP tunneling.

split-horizon-routing *interface#*
Disables split horizon routing on the specified interface.

translation
Disables the translation process that allows Phase 2 hosts to transparently communicate with Phase 1 hosts.

nfilter in *interface#*
Disables, but does not delete, the input network filters on this interface.

nfilter out *interface#*
Disables, but does not delete, the output network filters on this interface.

zfilter in *interface# zonename*
Disables, but does not delete, the input zone filters on this interface.

zfilter out *interface# zonename*
Disables, but does not delete, the output zone filters on this interface.

enable

ap2
Enables the AppleTalk Phase 2 packet forwarder as a whole.

checksum
Enables checksumming on packets that the specified interface generates.

interface *interface#*
Enables AppleTalk Phase 2 functions on the specified interface.

ip-tunnel
Enables IP tunneling.

split-horizon-routing *interface#*
Enables split horizon routing on the specified interface.

translation
Enables the translation process that allows Phase 2 hosts to transparently communicate with Phase 1 hosts.

nfilter in *interface#* inclusive/exclusive
Enables network input filters and controls how the filter is applied to the interface. Inclusive forwards matches. Exclusive drops matches.

nfilter out *interface#* inclusive/exclusive
Enables network output filters and controls how the filter is applied to the interface. Inclusive forwards matches. Exclusive drops matches.

zfilter in *interface# zonename* inclusive/exclusive
Enables and controls how the zone input filter is applied to the interface. Inclusive forwards matches. Exclusive drops matches.

zfilter out *interface# zonename* inclusive/exclusive
Enables and controls how the zone output filter is applied to the interface. Inclusive forwards matches. Exclusive drops matches.

list

Displays the current AppleTalk Phase 2 configuration.

- *AP2 globally*
  Indicates whether AppleTalk Phase 2 is globally enabled or disabled.
- *AP2 IP tunnek*
  Indicates whether AppleTalk Phase 2 IP tunnel is globally enabled or disabled.
- *checksumming*
  Indicates whether checksum is enabled or disabled.
- *translation gateway*
  Indicates whether the AppleTalk Phase 1/ Phase2 translation is globally enabled or disabled.
- *configured interfaces*
  Lists each interface number and its associated net range, node number, and zone and multi-zone names, as well as the default zone. The zone name is enclosed in double quotes in case there are embedded spaces or nonprinting characters.

set

netrange *interface# start# end#*
Assigns the network range in seed routers.

node *interface# node#*
Specifies short DDP headers for packets sent on that interface number. Use this only for compatibility with software that does not support long DDP headers.

exit

Returns to the previous prompt level.

AppleTalk Phase 2 Console Commands

Enter these commands after the AP2> prompt.

To list the AppleTalk Phase 2 console commands and their options, enter a ? after the AP2> prompt.

counters

Displays the number of packet overflows on each network (interface) that sends and receives AppleTalk Phase 2 packets.

dump

Displays the routing table information about the interfaces on the router that forwards AppleTalk Phase 2 packets.

- *dest net*
  Specifies the destination network number in decimal.
- *cost*
  Specifies the number of router hops to this destination network.
- *state*
  Specifies the state of the entry in the routing table.
- *next hop*
  Specifies the next hop for packets going to networks that are not directly connected. For directly connected networks, this is node number 0.
- *zone(s)*
  Specifies the user-assigned name for that network. The zonename(s) is enclosed in double quotes in case there are embedded spaces or nonprinting characters.

interface

Displays the addresses of all the interfaces in the router on which AppleTalk Phase 2 is enabled.

exit

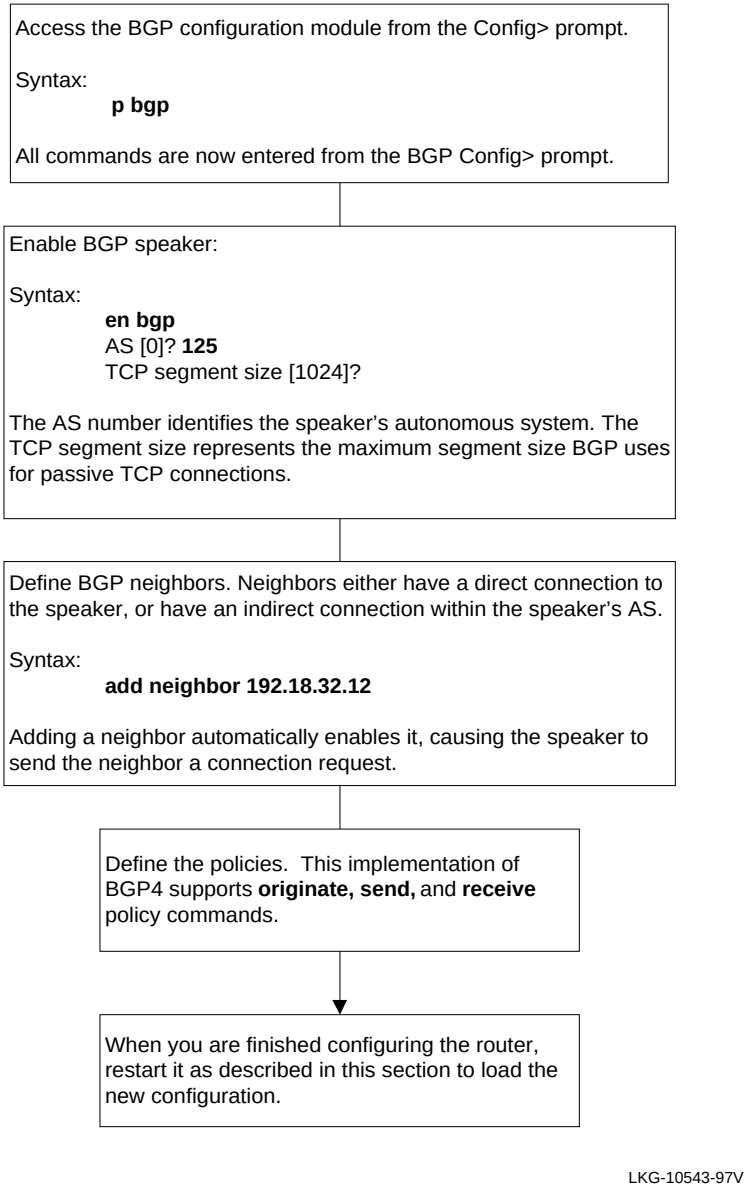
Returns to the previous prompt level.

Further Configuration Considerations

To allow Phase 1 hosts to transparently communicate with Phase 2 hosts, you must enter the AppleTalk Phase 2 configuration process on the router running AP2 and enable the AppleTalk Phase 1/2 translation function via that router's AP2 **enable translation** configuration command.

In addition to providing the gateway translation function, this router now acts as both a Phase 1 and Phase 2 router on whatever interfaces these protocols are configured. Routing information is passed between Phase 1 and Phase 2 networks by the gateway resulting in a (logically) single internet.

For more information on the enable translation command and AppleTalk Phase 2, refer to the chapter "Configuring and Monitoring AppleTalk Phase 2" in the *Routing Protocols User's Guide.*



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BGP4 Configuration Commands

Enter these commands at the BGP Config> prompt. Enter ? to list available commands or their options.

add

aggregate *network-prefix network-mask*
Causes the BGP speaker to aggregate a block of addresses and advertise a single address to its neighbors.

neighbor
Defines a BGP neighbor. An external neighbor must be on the same network as the speaker.

no-receive *AS number*
Excludes updates from a specified AS.

originate-policy...
Adds an originate-policy definition.

receive-policy...
Adds a receive-policy definition.

send-policy...
Adds a send-policy definition.

change

aggregate...
Changes information associated with the current aggregate.

neighbor...
Changes information associated with a neighbor router.

originate-policy...
Changes an existing originate-policy definition.

receive-policy...
Changes an existing receive-policy definition.

send-policy...
Changes an existing send-policy definition.

delete

aggregate *index number*
Deletes an aggregate.

neighbor *network address*
Deletes a BGP neighbor.

no-receive *AS number*
Deletes the no-receive policy associated with a specified AS.

originate-policy *index number*
Deletes an originate-policy.

receive-policy *index number*
Deletes a receive-policy.

send-policy *index number*
Deletes a send-policy.

disable *BGP speaker or neighbor*
Disables a previously enabled BGP speaker or neighbor.

enable *BGP speaker* or *neighbor*
Disables a BGP speaker or neighbor.

list

aggregate
Lists all aggregated records defined with the **add aggregate** command.

all
Lists the BGP neighbors, policies, aggregated routes, and no-receive-AS records in the current configuration.

BGP speaker
Lists information on the BGP speaker.

neighbor
Lists information on BGP neighbors.

no-receive
Lists information on no-receive-AS definitions.

originate-policy
Lists information on originate policies.

receive-policy
Lists information on receive policies.

send-policy
Lists information on send policies.

exit
Returns to the Config> prompt.

BGP4 Console Commands

Enter these commands at the BGP> prompt. Enter ? to list available commands or their options.

destinations *network-address*

advertised-to *network-address*
Dump information on routes advertised to a specified network address.

received-from *network-address*
Dump information on routes received from a specified network address.

neighbors *internet-address*
Displays information on all active neighbors, or a specified BGP neighbor.

paths
Displays the path descriptors stored in the path descriptions database.

sizes
Displays the number of entries stored in various databases.

exit
Returns to the Config> prompt.

Configuring the Router

Enter configuration commands at the Config> prompt. To access the Config> prompt:

```
*talk 6
Gateway user configuration
Config>
```

If the Config> prompt does not appear, press **Return** again.

To enter BGP4 configuration commands, display the BGP config> prompt:

```
Config>protocol bgp
BGP Config>
```

To return to the * prompt, press **Ctrl/P**.

Restarting the Router

When you are done configuring the router, restart it to load the new configuration. Enter **restart** at the * prompt and respond **yes** to the prompt:

```
Are you sure you want to restart the gateway?
```

When the new configuration is finished loading, the terminal displays the * prompt.

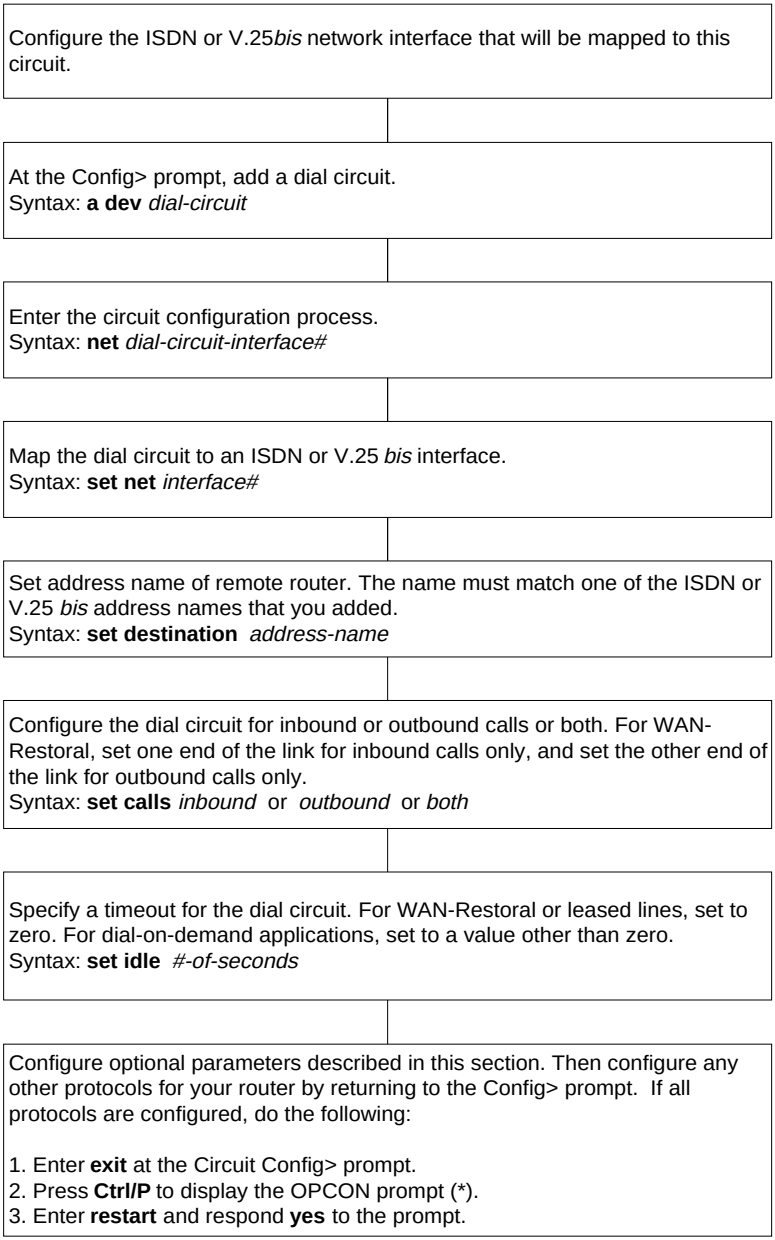
Monitoring the Router

To enter monitoring commands, display the GWCON prompt (+):

```
*talk 5

CGW Operator Console
+protocol bgp
BGP>
```

To return to the * prompt, press **Ctrl/P**.



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Dial Circuit Configuration Commands

Enter these commands at the Circuit Config> prompt. Enter ? to list available commands or their options.

delete

inbound destination
Removes the **inbound destination** and the **any_inbound** settings from the dial circuit configuration.

encapsulator

Displays the configuration prompt for the link-layer protocol running on the dial circuit. V.25 *bis* dial circuits support PPP, PPP-FR, Multilink PPP/PPP-FR and PSL datalinks ISDN dial circuits support these protocols plus X.25 and Frame Relay.

list

Displays the current dial circuit configuration.

profile-list

Displays the telesaving profiles that have been configured on the router

blocking *profile-name*
Displays the named call-blocking profile, or all call-blocking profiles.

call-back *profile-name*
Displays the named call-back profile, or all call-back profiles.

initial-minimum-timer *profile-name*
Displays the named initial-minimum-timer profile, or all initial-minimum-timer profiles.

set

any_inbound
Specifies that inbound calls that do not identify themselves be mapped to this circuit.

blocking *profile-name*
Specifies the call-blocking profile which this dial circuit is to use.

call-back *profile-name*
Specifies the call-back profile which this dial circuit is to use.

calls *outbound* or *inbound* or *both*
Sets up dial circuit to initiate outbound calls only, accept inbound calls only, or both initiate and accept calls. Default is both.

destination *address-name*
Required for the dial circuit to operate. Specifies the network dial address of the remote router to which this dial circuit will connect.

inbound-destination *address-name*
Enter this address name if the dial circuit is set up for inbound calls or both inbound and outbound calls, and if the remote router's local address is different from the address this router would use to call that remote router.

idle *#-of-seconds*
If there is no traffic over the circuit for this length of time, the dial circuit hangs up. For WAN-Restoral or dedicated (leased line) circuits, set to zero. Default is 60. Range is 0 to 65535.

initial-minimum-timer *profile-name*
Specifies the initial-minimum-timer profile which this dial circuit is to use.

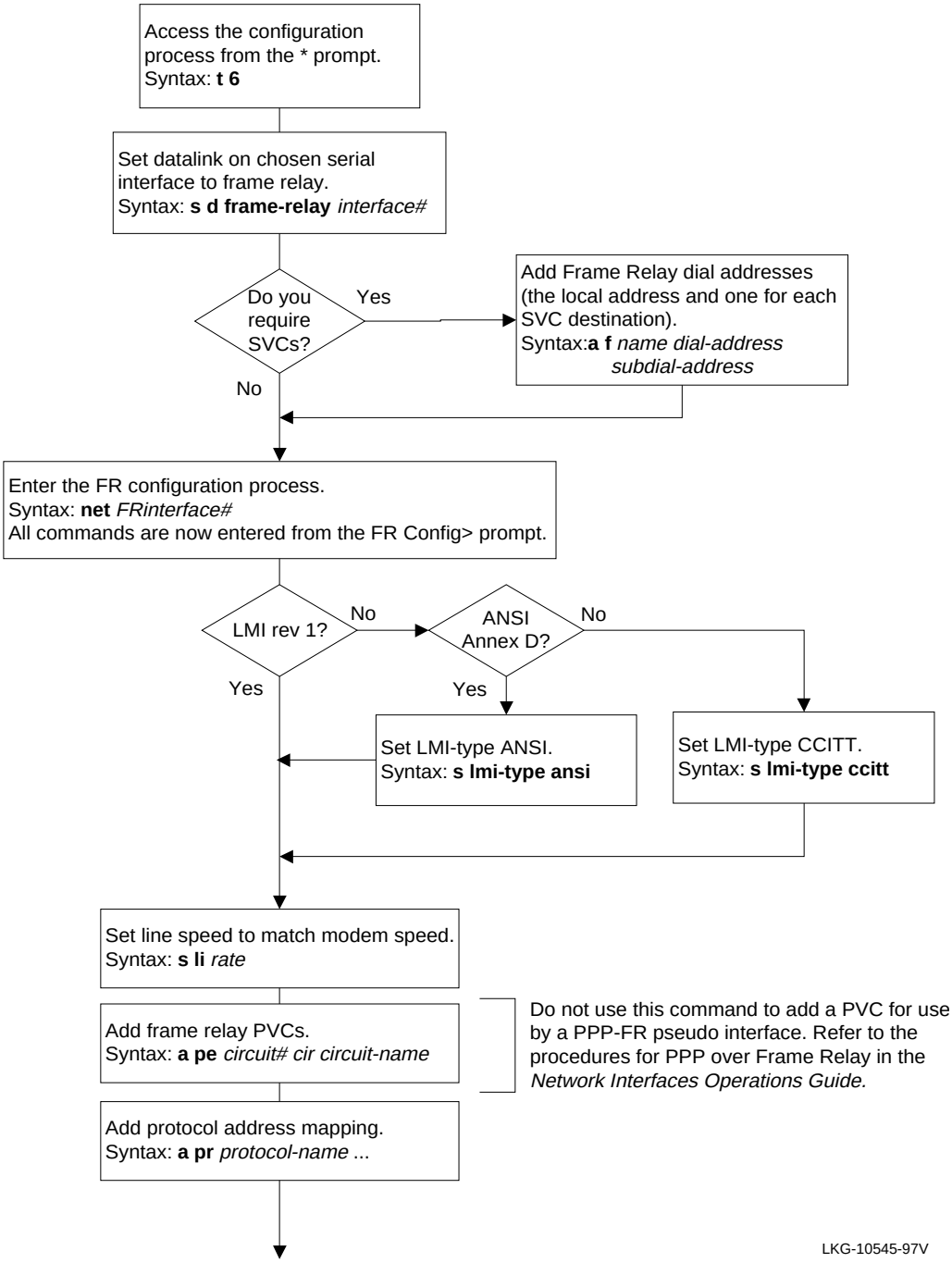
net *#-of-ISDN-[*or *V.25-bis-]interface*
Sets number of the ISDN or V.25 *bis* interface to which you want to map this circuit.

selftest-delay *#-of-milliseconds*
Delays the time between establishing the call and sending the initial packet. Default is 150. Range is 0 to 65535.

send_line_id *yes* o*r no*
Specifies whether propietary local ID messages are sent. Default is no.

exit

Returns to the Config> prompt.



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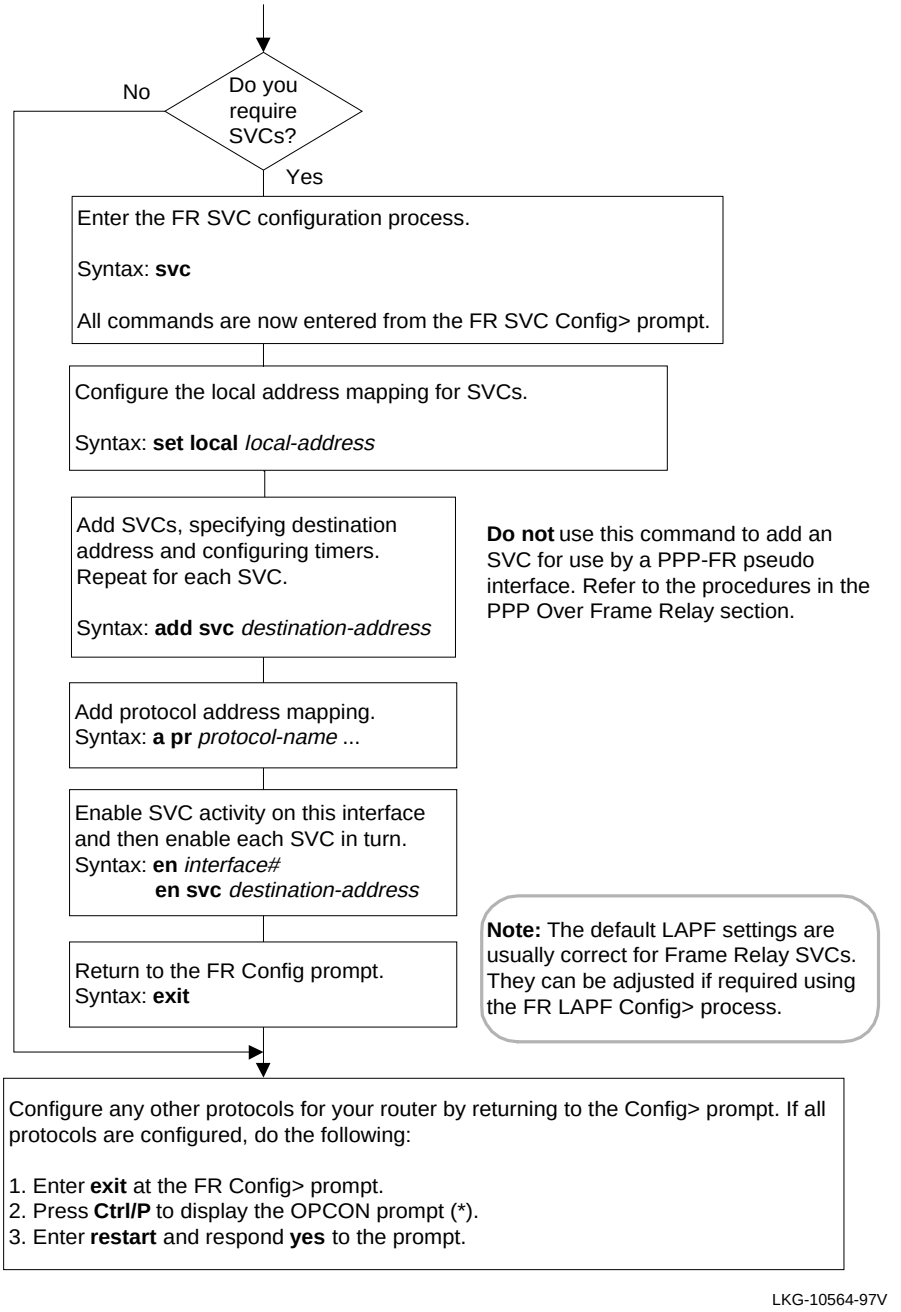
No
Do you require SVCs?
Yes
Enter the FR SVC configuration process.
Syntax: **svc**
All commands are now entered from the FR SVC Config> prompt.
Configure the local address mapping for SVCs.
Syntax: **set local** *local-address*
Add SVCs, specifying destination address and configuring timers. Repeat for each SVC.
Syntax: **add svc** *destination-address*
Do not use this command to add an SVC for use by a PPP-FR pseudo interface. Refer to the procedures in the PPP Over Frame Relay section.
Add protocol address mapping.
Syntax: **a pr** *protocol-name* ...
Enable SVC activity on this interface and then enable each SVC in turn.
Syntax: **en** *interface#*
en svc *destination-address*
Return to the FR Config prompt.
Syntax: **exit**
Note: The default LAPF settings are usually correct for Frame Relay SVCs. They can be adjusted if required using the FR LAPF Config> process.
Configure any other protocols for your router by returning to the Config> prompt. If all protocols are configured, do the following:
1. Enter **exit** at the FR Config> prompt.
2. Press **Ctrl/P** to display the OPCON prompt (*).
3. Enter **restart** and respond **yes** to the prompt.
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Frame Relay Configuration Commands

Enter these commands at the FR config> prompt
Enter ? to list available commands or their options.

add

permanent-virtual-circuit
Adds PVCs in the range 16 to 1007. The maximum number is approximately 64, but the actual number supported by the interface is affected by the configured size of the receive buffer on the interface.

protocol-address
Adds statically configured destination protocol addresses to the FR interface.

change permanent-virtual-circuit

Modifies a PVC that was added with the **add permanent-virtual-circuit** command.

disable

cir-monitor
Disables the circuit monitoring feature that enforces the transmission rate, which was configured using **add permanent-virtual-circuit**.

congestion-monitor
Disables the varying of a circuit's information rate in response to congestion.

dn-length-field
Disables the feature which includes a length field in DECnet packets.

lmi
Disables all management activity.

multicast-emulation
Disables multicast emulation on each active PVC.

orphan-circuits
Prohibits the use of nonconfigured circuits at the interface.

protocol-broadcast
Prohibits protocols such as RIP from functioning over the FR interface.

enable

cir-monitor
Enables the circuit monitoring feature that enforces the transmission rate configured using **add permanent-virtual-circuit**.

congestion-monitor
In response to congestion, allows a circuit's information rate to vary between a minimum of 0.25 times the CIR and a maximum of the line speed.

dn-length-field
Enables the length field to be included in DECnet packets.

lmi
Enables all management activity.

multicast-emulation
Enables multicast emulation on each PVC when a protocol multicast is forwarded.

orphan-circuits
Enables the use at the interface of all nonconfigured circuits.

protocol-broadcast
Allows protocols like RIP to function over the FR interface.

lapf

Displays the FR SVC Config> prompt for configuring Frame Relay SVCs.

list

all
Includes the output of:
list hdlc
list lmi
list permanent-virtual-circuits
list protocol-addresses

hdlc
Displays frame relay HDLC configuration.

lmi
Displays logical management and related configuration information about the FR interface.

permanent-virtual-circuits
Displays all the configured PVCs on the FR interface.

protocol-address
Displays all the statically configured protocol address circuit mappings at the FR interface.

remove

permanent-virtual-circuit
Deletes any configured PVC in the range of 16 to 1007.

protocol-address
Deletes any statically configured protocol address.

set

encoding *type*
Sets the transmission encoding scheme for the interface to NRZ or NRZI.

frame-size *size*
Sets the size of the network layer portion of frames transmitted and received on the data link.

idle *state*
Sets the data-link state to either Flag or Mark.

line-speed *rate*
Sets data transfer rate to match the speed of the connected modem.

lmi-type *management type*
Sets management mode to Rev1, ANSI, or CCITT.

n1-parameter *count*
Sets the number of t1 time intervals that expire before the FR interface queries management for complete PVC status.

n2-parameter *max#*
Sets the number of errors that can occur in the management window monitored by the n3-parameter before the interface resets.

n3-parameter *max#*
Configures the number of monitored management events for measuring the n2-parameter.

p1-parameter *max#*
Configures the maximum number of PVCs supported by the FR interface.

t1-parameter *time*
Configures the interval (in seconds) that the FR interface takes to perform a sequence number exchange with FR management.

transmit-delay
Allows the insertion of a delay between each transmitted HDLC frame.

svc
Displays the FR SVC Config> prompt for configuring Frame Relay SVCs.

exit
Returns to the previous prompt level.

Frame Relay Console Commands

To list the frame Relay console commands and their options, enter a ? at the FR> prompt.

clear

Removes all statistics from the FR interface.

disable

cir-monitor
Disables CIR monitoring.

congestion-monitor
Disables congestion monitoring.

svc *destination-name*
Disables active SVCs. Changes made are not saved across a reboot.

enable

cir-monitor
Enables CIR monitoring.

congestion-monitor
Enables congestion monitoring.

svc *destination-name*
Enables SVCs which have been disabled or have failed. Changes made are not saved across a reboot.

list

call-control
Displays statistical information about SVC call controls.

circuit *pvc#*
Displays detailed information for the specified PVC.

lapf
Displays statistics relevant to the lower layer protocol LAPF.

lmi
Displays statistics relevant to the logical management on the FR interface.

permanent-virtual-circuits
Displays information for all configured PVCs on the FR interface.

svcs
Displays general link layer statistics and configuration information for all active SVCs on this interface.

all
Displays circuit, management, and PVC statistics on the FR interface.

set circuit

Assigns values to a PVC for the committed information rate (CIR), committed burst rate, and excess burst rate.

exit

Returns to the previous prompt level.

Frame Relay SVC Configuration Commands

Enter these commands at the FR SVC Config> prompt
Enter ? to list available commands or their options.

add

svc
Adds a frame relay SVC and configures timers and parameters.

protocol-address
Adds statically configured destination protocol addresses to the SVC.

change svc

Modifies an SVC that was added with the **add svc** command.

delete

local-address
Deletes the local address defined using the **set local-address** command.

disable

interface
Disables all frame relay SVC activity on this interface.

svc *destination-name*
Disables the named frame relay SVC.

enable

interface
Enables frame relay SVC activity on this interface.

svc *destination-name*
Enables the named frame relay SVC.

list

all

Displays the entire Frame Relay SVC configuration.

local-address
Displays Frame Relay SVC local address configuration.

maintenance-mode
Displays status of SVC maintenance mode, enabled or disabled.

state
Displays status of Frame Relay SVC activity on this interface, enabled or disabled.

svc
Displays configuration of all SVCs on this interface.

timers
Displays Frame Relay SVC timer configuration.

remove

svc
Deletes an SVC that was added with the **add svc** command.

protocol-address
Deletes any statically configured protocol address.

set

local-address
Configures Frame Relay SVC local addresses.

maintenance-mode
Sets status of SVC maintenance mode to enabled or disabled.

timers
Configures Frame Relay SVC timers.

exit

Returns to the previous prompt level.

Frame Relay LAPF Configuration Commands

Enter these commands at the FR LAPF Config> prompt Enter ? to list available commands or their options.

list

all

Displays the entire Frame Relay LAPF configuration.

frame-size
: Displays maximum frame size that can be sent on an LAPF link.

retransmission-count
: Displays the number of times a frame will be retransmitted before the link is considered to be down.

timers
: Displays Frame Relay LAPF timer configuration.

window-size
: Displays the LAPF window size.

set

frame-size
: Configures maximum frame size that can be sent on an LAPF link.

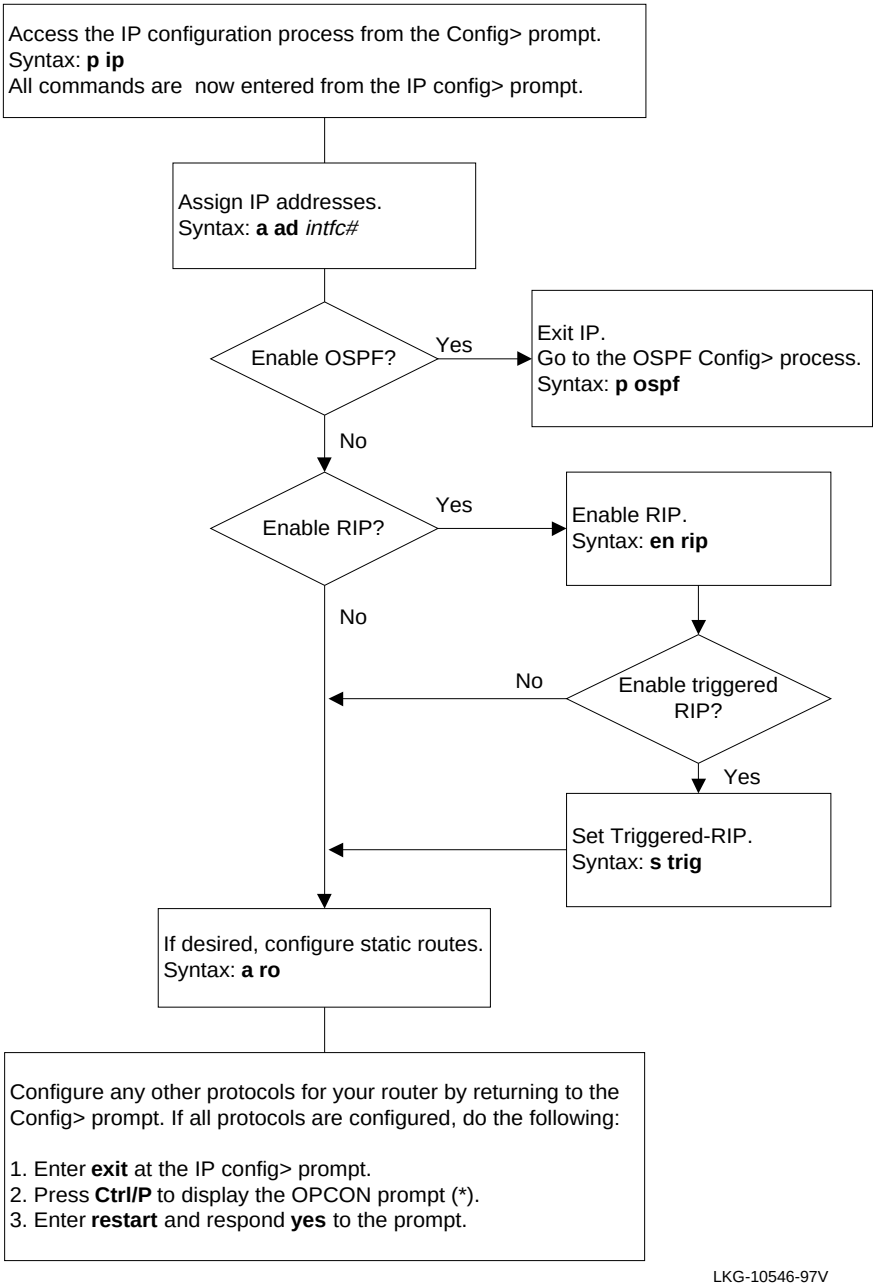
retransmission-count
: Specifies the number of times a frame will be retransmitted before the link is considered to be down.

timers
: Configures the Frame Relay LAPF timers.

window-size
: Configures the LAPF window size.

exit

Returns to the previous prompt level.



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IP Configuration Commands

Enter the following configuration commands at the IP config> prompt. To list the configuration commands and their options, enter a ?.

After you have configured all of the protocols, enter restart at the OPCON prompt (*), and respond yes after the following prompt:

Are you sure you want to restart the router?

add

accept-rip-route
Allows an interface to accept a particular RIP route when input filtering is enabled.

access-control
Adds an access control entry to the end of the access control list.

address
Assigns an IP address to the specified interface.

bootp-server
Adds a BootP server to the network configuration.

broadcast-forwarder udp
Adds a broadcast forwarding server for a specified UDP on a specified network interface.

egp-as-info
Defines the type of EGP routing exchange that takes place when communicating with another autonomous system (AS).

egp-neighbor
Adds an EGP neighbor to the router's IP configuration.

filter
Designates a range of IP destinations to be filtered.

input-interchange
Adds an IP network to the list of routes that, when received from an AS, are readvertised via OSPF and RIP.

output-interchange
Adds an IP network that will be advertised via EGP.

packet-filter
Adds one or more packet filters and the corresponding access controls.

route
Adds a static route.

change

address
Changes an interface's address mask.

egp-as-info
Modifies the interchange flag associated with a neighboring AS.

egp-neighbor
Modifies the configured the EGP-neighbor's AS membership.

filter
Changes the mask associated with a range of filtered destinations.

input-interchange
Modifies the cost with which an EGP-learned network is imported into the IGPs (OSPF and RIP).

output-interchange
Modifies the cost advertised by EGP for a given network.

route
Modifies either the designated subnet mask, the next hop, or the hop cost.

delete

accept-rip-route
When input filtering is enabled, it prohibits an interface from receiving a particular network through the RIP protocol.

access-control
Removes an access control record.

address
Removes an IP interface address.

bootp-server
Removes a BootP server from the configuration.

broadcast-forwarder udp
Removes a specfied broadcast forwarding server.

default network/subnet-gateway
Removes either the default network gateway or the default subnet gateway.

egp-as-info
Removes the route exchange information that pertains to the neighboring AS.

egp-neighbor
Removes an EGP neighbor.

filter
Stops the router from filtering a range of IP destinations.

input-interchange
Stops importing an EGP-learned route into the IGPs.

output-interchange
Stops advertising a network through EGP.

packet-filter
Deletes one or more packet filters and the corresponding access controls.

route
Removes a static route.

triggered-rip
Deletes triggered RIP from the specified interface.

disable

arp-subnet-routing
Turns off proxy ARP.

bootp-forwarding
Turns off BootP packet forwarding.

broadcast-forwarding
Turns off broadcast forwarding to a server for a specified UDP on a specified interface.

directed-broadcast
Disables the forwarding of IP packets whose destination is a nonlocal broadcast address.

egp
Turns off EGP.

egp-readvertising
Prevents the router from readvertising EGP-learned information via EGP.

override default
Prevents a received RIP default route from being installed in the routing table.

override static-routes
Prevents received RIP routes from overriding configured static routes.

per-packet-multipath
Turns off the per-packet-multipath feature. Causes IP to use a single path to a destination subnet.

receiving rip
Prevents RIP packets from being received on the interface.

receiving dynamic nets
Turns on input filtering of network routes received by RIP on the interface.

receiving dynamic subnets
Turns on input filtering of subnet routes received by RIP on the interface.

rfc925-routing
Prevents router from responding to ARP requests for off-net destinations.

rip
Turns off RIP.

sending default-routes
Prevents the router from advertising a default route in RIP updates.

sending net-routes
Prevents the router from sending network-level routes in RIP updates.

sending poisoned-reverse-routes
Prevents the router from advertising a certain set of network routes in RIP updates.

sending subnet-routes
Prevents the router from advertising subnet routes in RIP updates.

sending static-routes
Prevents the router from advertising static routes in RIP updates.

enable

arp-subnet-routing
Turns on Proxy ARP.

bootp-forwarding
Turns on BootP packet forwarding.

broadcast-forwarding udp
Turns on broadcast forwarding to a server for a specified UDP on a specified interface.

directed-broadcast
Enables the forwarding of IP packets whose destination is a nonlocal broadcast address.

egp
Turns on EGP.

egp-readvertise
Allows the router to readvertise EGP-learned information via EGP.

override default
Allows the RIP default route to be installed as the router's default route.

override static
Allows RIP information to override configured static routes.

per-packet-multipath
Enables multipath on a per-packet basis.

receiving rip
Allows the router to receive RIP updates.

receiving dynamic nets
Allows all network routes to be received by the RIP protocol on the interface.

receiving dynamic subnets
Allows all subnet level routes to be received by the RIP protocol on the interface.

rfc925-routing
Tells the router to respond to ARP requests for off-net destinations.

rip
Turns on RIP.

sending default-routes
Allows the router to advertise a default route in RIP updates.

sending net-routes
Allows the router to advertise a network route in RIP updates.

sending poisoned-reverse-routes
Allows the router to advertise a certain set of network routes in RIP updates.

sending subnet-routes
Allows the router to advertise subnet routes in RIP updates.

sending static-routes
Allows the router to advertise static routes in RIP updates.

list

all
Displays the entire IP configuration.

access-controls
Displays the configured access control mode and the list of configured access control records.

addresses
Displays the IP internet addresses of the router.

bootp
Displays the BOOTP relay agent configuration of the router.

broadcast-forwarding
Displays broadcast forwarding configuration.

egp-as-info
Displays the routing interchange configured for each neighboring AS.

egp-neighbors
Displays the configured initial EGP neighbors.

filters
Displays a list of all the IP networks/subnets that are being filtered.

input-interchange
Displays the network interchanges that, when learned through EGP, will be imported into the IGPs (OSPF and RIP).

output-interchange
Displays the set of routes that will be advertised to the AS neighbor by EGP.

packet-filter
Displays the configured packet filters.

protocols
Displays the state of the IP routing protocols (OSPF, RIP, and EGP).

rip-routes-accept
Displays the set of routes that will be accepted when RIP input filtering is enabled.

routes
Displays the list of static routes.

sizes
Displays the configured size of the routing table.

tags
Displays the tags that will be associated with RIP information learned on the interface.

triggered-rip
Displays the triggered RIP options, timers, and maximum retransmission limits for response and polling messages.

move
Changes the order of the access control records.

set
access-control
Turns access control on or off.

broadcast address
Specifies the format of the IP broadcast used when the router send broadcasts.

cache-size
Sets the size of the routing cache.

default network-gateway
Configures a static default route.

default subnet-gateway
Configures a static subnet default route.

egp-system-number
Configures the router's autonomous system number, which is used when running the EGP protocol.

internal-IP-address
Configures the internal IP address that belongs to the router as a whole.

ip-host-only-default network-gateway-ip-host-only
Configures the route to a gateway router when operating in ip-host-only mode.

ip-host-only-default subnet-gateway-ip-host-only
Configures the route to a subnet gateway router when operating in ip-host-only mode.

originate-rip-default
Configures the conditions under which the router originates a RIP default route, and the cost that will be used when originating the default.

reassembly-size *size*
Configures the maximum size for a reassembled packet.

router-id
Sets the address used by the router when sourcing IP traffic.

routing table-size
Sets the size of the routing table.

tags
Sets the tags that will be associated with RIP information learned on the interface.

triggered-rip
Sets the triggered RIP options, timers, and maximum retransmission limits for response and polling messages.

update

packet-filter
Accesses the packet filter update prompt which lets you modify packet filters created with the **add packet-filter** command.

exit
Returns to the previous prompt level.

IP Console Commands

Enter these commands after the IP> prompt.

To list the IP console commands and their options, enter a ? after the IP> prompt.

access controls
Displays a list of configured access control records.

cache
Displays the routing cache.

counters
Displays IP forwarding statistics.

dump routing tables
Displays the routing table.

egp-neighbors
Displays the current EGP state and the interchange flag of each of the router's EGP neighbors.

egp-routes
Displays the routes that are being sent to and received from an EGP neighbor.

interface addresses
Displays the router's IP interface addresses.

packet-filter *filter-name*
Displays packet filter configuration and status.

ping *interface-address*
Lets the router send ICMP echo requests to a given destination. You can use this command for troubleshooting.

route *ip-destination*
Displays the route to a given IP destination (if one exists).

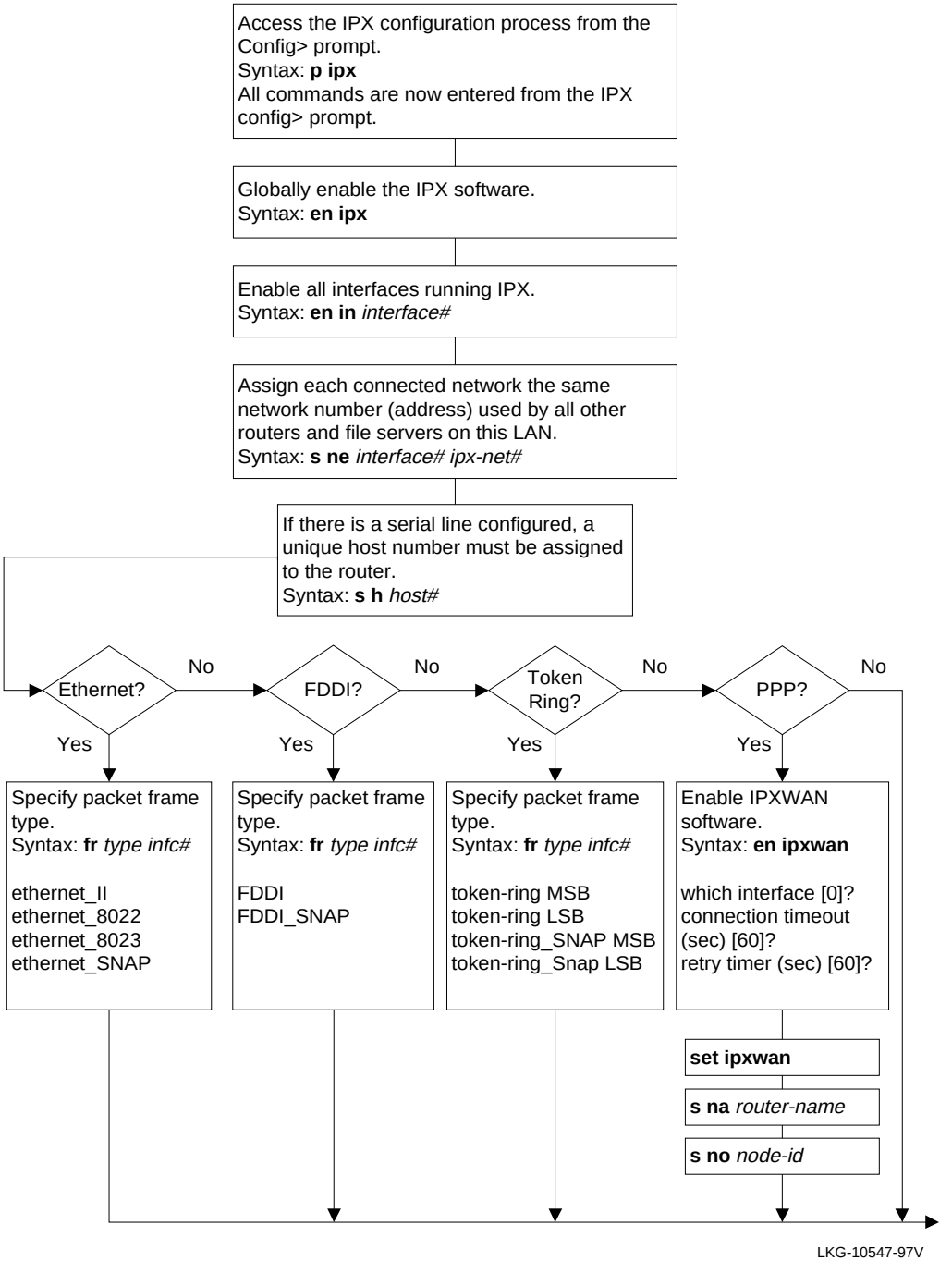
sizes
Displays the configured sizes of specific IP parameters.

static routes
Displays the list of configured static routes and filter entries.

traceroute *interface-address*
Displays the entire hop-by-hop path to a given destination.

triggered-rip
Displays the triggered RIP status and counters for all triggered RIP interfaces.

exit
Returns to the GWCON (+) prompt.



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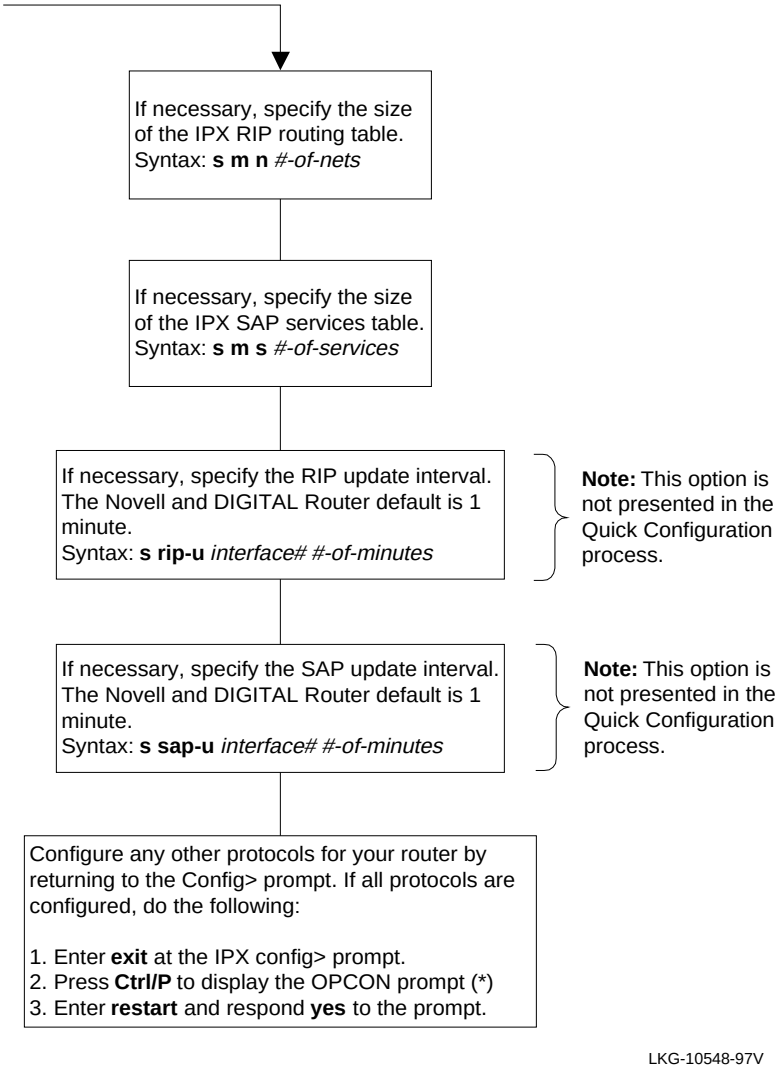
If necessary, specify the size of the IPX RIP routing table.
Syntax: **s m n** *#-of-nets*
If necessary, specify the size of the IPX SAP services table.
Syntax: **s m s** *#-of-services*
If necessary, specify the RIP update interval. The Novell and DIGITAL Router default is 1 minute.
Syntax: **s rip-u** *interface# #-of-minutes*
Note: This option is not presented in the Quick Configuration process.
If necessary, specify the SAP update interval. The Novell and DIGITAL Router default is 1 minute.
Syntax: **s sap-u** *interface# #-of-minutes*
Note: This option is not presented in the Quick Configuration process.
Configure any other protocols for your router by returning to the Config> prompt. If all protocols are configured, do the following:
1. Enter **exit** at the IPX config> prompt.
2. Press **Ctrl/P** to display the OPCON prompt (*)
3. Enter **restart** and respond **yes** to the prompt.
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IPX Configuration Commands

Enter the following configuration commands at the IPX config> prompt.

To list the configuration commands and their options, enter a **?**

After you have configured all of the protocols, enter **restart** at the OPCON prompt (*), and respond **yes** to the following prompt

Are you sure you want to restart the router?

add

access-control *type dest-net dest-host dest-socket-range src-net src-host src-socket-range*
Adds the access control feature. Determines whether IPX packets are dropped or forwarded.

filter *hops service-type service-name*
Adds IPX filtering. Prevents NetWare bindery overflows on large networks by letting you determine the reasonable number of hops for a given service.

ip-tunnel-address i*p-address*
Constructs the IPX IP address peer list. Assigns IP unicast or multicast address one at a time to form the list.

delete

access-control *line#*
Deletes the access control feature for the desired line number.

filter *hops service-type service-name*
Removes IPX filtering.

ip-tunnel-address i*p-address*
Deletes an IP address from the IP peer list.

disable

interface *interface#*
Disables specific interfaces from sending IPX packets.

ip-tunnel
Disables IPX on the IP network.

ipx
Disables all interfaces from sending IPX packets.

ipxwan *interface#*
Prevents IPX from functioning over an interface supporting the Point-to-Point Protocol (PPP).

keepalive *interface#*
Prevents the router from sending IPX packets over specific interfaces.

netbios *interface#*
Prevents the router from filtering NetBIOS packets on the specified interface.

reply-to-get-nearest-server
Prevents the router from responding to GET NEAREST SERVER requests from workstations that are attempting to locate a server.

enable

interface *interface#*
Enables specific interfaces to send IPX packets.

ip-tunnel
Enables IPX on the IP network.

ipx
Allows the router to send IPX packets over all enabled interfaces.

ipxwan
Allows the router to send IPX packets over configured PPP interfaces.

keepalive *interface# timeout*
Allows the router to respond to keepalive packets on the interface specified by interface# for the number of minutes specified in timeout.

netbios *interface#*

Allows the router to filter NetBIOS packets on the specified interface.

reply-to-get-nearest-server

Lets the router respond to GET NEAREST SERVER requests from workstations that are attempting to locate a server.

frame

Specifies the packet format for IPX interfaces.

ethernet-format interface#

Selects the Ethernet encapsulation format:
ethernet_II
ethernet_8022
ethernet_8023(default)
ethernet_SNAP

FDDI *interface#*

Selects the FDDI encapsulation format.

FDDI_SNAP *interface#*

Selects the FDDI encapsulation format. FDDI_SNAP is the default.

token-ring-format interface#

Selects the Token-Ring encapsulation format:
token-ring MSB (default)
token-ring LSB
token-ring_SNAP MSB
token-ring_SNAP LSB

list

Displays the current IPX configuration.

move

access-control *line# line#*

Changes the line numbers for the access controls. After you move the lines, they are immediately re-numbered to reflect the new order.

set

access-control *toggle*

Turns access controls on or off. Enter **on** or **off** as the *toggle* value.

filter *toggle*

Turns the IPX SAP filter on or off. Enter **on** or **off** as the *toggle* value.

host-number *host#*

Specifies that each IPX router with serial line support must have a unique host number. This is required because the serial lines do not have hardware node addresses from which to build a host number. The host number is a 12-digit hexadecimal number.

ip-tunnel-net-number *host# ipx-net#*

Assigns a network number to the associated IP tunnel. The interface number is decimal and the net number is hexadecimal.

ipxwan *interface timeout retry-timer #*

Sets up an interface to support the routing of IPX traffic over a WAN interface supporting the Point-to-Point Protocol (PPP). The command also sets up the connection timer and the retry timer.

local-cache-size #

Specifies the size of the local cache routing table. The range is 1– 10000. The default size is 64.

maximum alternate-routes-per-destination #

Specifies the number of alternate routes that you want to assign to a give destination network. The range is 1– 64. The default value is 3.

maximum networks #

Specifies the size of IPX's RIP routing table. This reflects the number of networks in the internet on which IPX operates. There is no maximum size limit; however, it is possible for the router to run out of memory. The default is 32.

maximum services #

Specifies the size of IPX's SAP service table. This reflects the number of services (such as file servers or SNA gateways) on the internet on which IPX operates. There is no maximum size limit. The default is 32.

maximum total-alternate-route-entries #

Specifies the actual number of entries available for alternate routes.

name
Assigns a symbolic name. The name can be between 1 and 47 characters in length and can contain the characters “A” through “Z”.

net-number *host# ipx-net#*
Assigns an IPX network number to the associated directly connected network. Every IPX interface must have a unique network number. The only exception is that serial lines can be assigned network numbers of zero. (Serial lines without network numbers do not pass IPX NetBIOS emulation packets.) The interface number is decimal and the net number is hexadecimal.

node-id *primary-net#*
Assigns a primary network number. The node-id is the primary network number for the router and must be assigned before the exchange of IPXWAN packets can begin.

remote-cache *size*
Specifies the size of the remote cache routing table. The range is 1– 10000. The default size is 64.

rip-interval *delay*
Specifies the delay in minutes between complete RIP updates given on an interface. The range is 1 through 1440. The default is 1.

rip-ip-tunnel-update-interval *interface# delay#*
Specifies the time delay in minutes between transmissions of complete RIP updates through an IP tunnel on an interface.

sap-interval *delay*
Specifies the delay in minutes between complete SAP updates given on an interface. The range is 1 through 1440. The default is 1.

sap-ip-tunnel-update-interval *interface# delay#*
Specifies the delay in minutes between complete SAP updates given on an interface. The range is 1 through 1440. The default is 1.

exit
Returns to the previous prompt level.

IPX Console Commands

Enter these commands at the IPX> prompt.

To list the IPX console commands and their options, enter a ? after the IPX> prompt.

access controls
Lists the status of IPX access controls, the IPX access control statements, and a count of how many times each control statement has been followed.

cache
Displays the contents of the IPX routing cache.

configuration
Lists the network numbers of all the router interfaces on which the IPX protocol is enabled.

counters
Displays the number of routing errors and packet overflows that have occurred.

disable *interface#*
Interactively disables specific IPX interfaces from sending IPX packets over the specified interface.

dump routing tables
Displays the contents of the current IPX RIP network routing tables.

enable *network#*
Returns to the GWCON (+) prompt.
Interactively enables IPX on an interface. To enable IPX, the interface must be up (that is, has passed the self-test).

filters

Lists the current filters and the states of these filters.

ipxwan

Lists the current configuration information for IPX running over a WAN interface via the Point-to-Point Protocol (PPP).

detailed *interface#*

Lists the current configuration information for IPX running over the specified interface.

summary

Lists the current configuration information for IPX running over all WAN interfaces.

shutdown

Performs an orderly shutdown of IPX functions on all router interfaces.

sizes

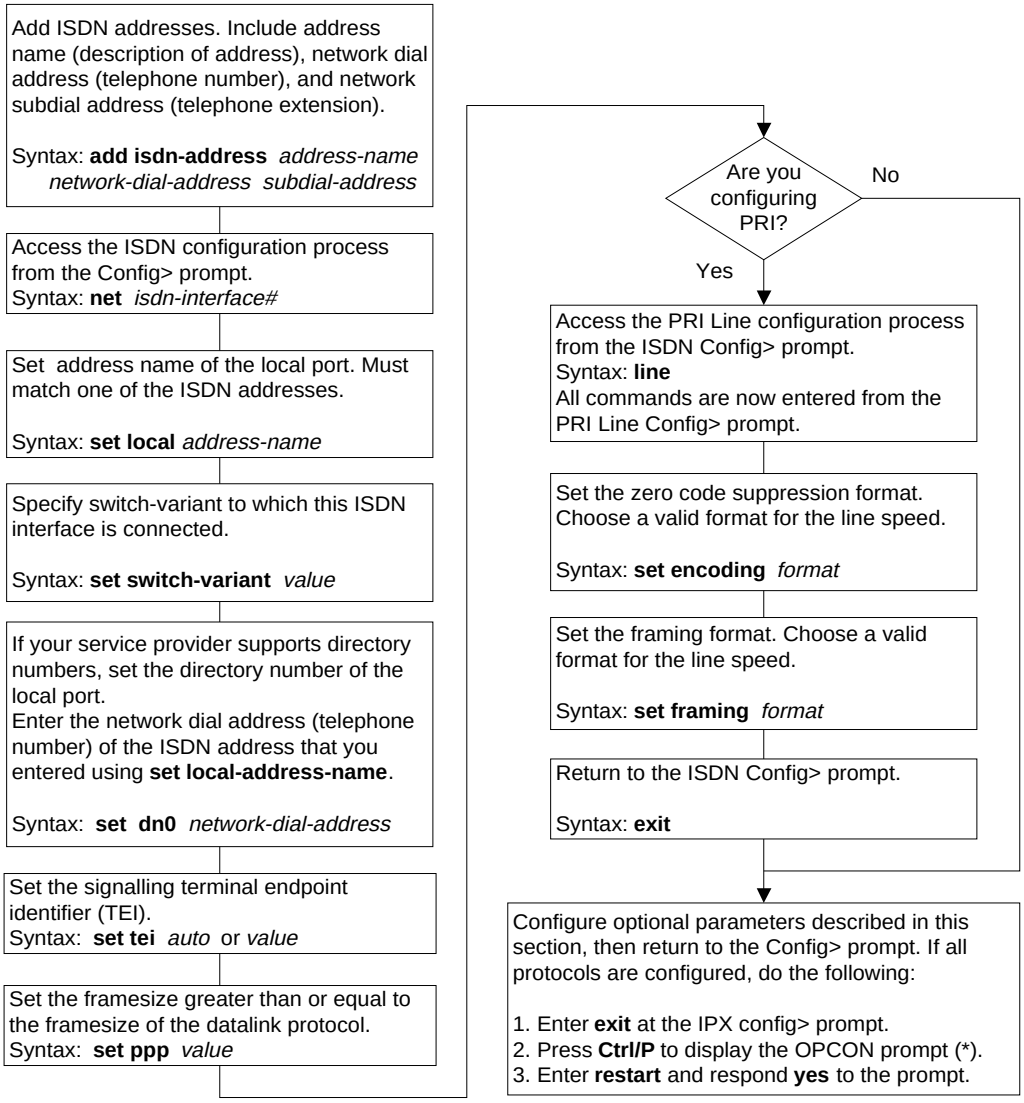
Lists the current size and contents of the local node and remote network caches.

slist

Displays the contents of the current IPX SAP routing tables. This command is similar to the NetWare **slist** command.

exit

Returns to the GWCON (+) prompt.



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ISDN Configuration Commands

Enter these commands at the ISDN config> prompt. Enter ? to list available commands or their options.

add

accounting-entry *address-name*
If your ISDN service provides accounting information, you can track telephone charges for specific network addresses. You can add up to eight entries. Must match ISDN address names.

enable

ps1
Enables Power Source 1 (PS1) detection. If your ISDN switch supplies PS1, enable PS1.

disable

ps1
Disables PS1 detection.

line

Accesses the Primary Rate ISDN (PRI) Line configuration prompt PRI Line Config>.

list

Displays the current ISDN configuration.

remove

accounting-entry
Removes accounting entries you set using **add accounting-entry**.

set

dn0 *network-dial-address*
Applies only if your service provider supports directory numbers. Enter the network dial address of the local port. Must match the network dial address (telephone number) of the ISDN address you entered using the **set local-address-name** command.

dn1 *network-dial-address*
Some service providers support a second directory number (**dn1**).

framesize *1024* or *2048* or *4096*
Size of the network layer portion of frames on the ISDN interface. Must be greater than or equal to the frame size of the data-link protocol (PSL or PPP) running on the link. The default is 2048.

local-address-name *address-name*
Network address name of the local ISDN interface. Must match one of the ISDN address names.

multipoint-selection *on* or *off*
Applies only to switch variant 5ESS. Default is *off* (point-to-point operation). Specifying *on* selects multipoint operation.

retries-call-address *value*
Maximum number of calls the router attempts to a nonresponding address during the **timeout-call-address** period. The range is 0 to 10. The default is 2.
If you set the switch-variant to INS64, you cannot change **retries-call-address**. It is fixed at 2.

service-profile-id *value*
Sets the service profile identifier (SPID) for a specified B-channel. The SPID value is ignored if the switch variant is not DMS100, NI1, or 5ESS multipoint.

switch-variant *variant-id*
Model of the switch to which this ISDN interface is connected. Basic Rate ISDN (BRI) supports NET3 (*default*), INS64, 5ESS, DMS100, VN3, NI1 or AUSTEL. Primary Rate ISDN supports NET5 (*default*), INS1500, 4ESS, 5ESS, DMS100, NI2 or AUSTEL.

tei *auto* or *value*
Signalling terminal endpoint identifier (TEI) for the ISDN interface. Must match the signalling TEI of your ISDN switch. The range is 0 to 63 or Auto. The default is Auto.

timeout-call-address *#-of-seconds*

When the router reaches **retries-call-address**, it does not make further calls to that address until this time has expired. The default is 180 seconds. The range is 0 to 65535 seconds. Zero causes the router to retry until the call is established.

If you set the switch-variant to INS64, you cannot change **timeout-call-address**. It is fixed at 180 seconds.

exit

Returns to the Config> prompt.

ISDN Console Commands

Enter these commands at the ISDN> prompt. Enter ? to list available commands or their options.

accounting

Displays accrued telephone charges for all Dial circuits on the current interface.

all-accounting

Displays accrued telephone charges for all Dial circuits on all ISDN interfaces.

calls

Lists the number of completed and attempted connections made for each dial circuit mapped to this interface since the last time statistics were reset on the router.

circuits

Shows the status of dial circuits.

line

Accesses the Primary Rate ISDN (PRI) Line console prompt PRI Line>.

parameters

Displays the current ISDN configuration.

statistics

Displays the current state of the link and the dial circuit and displays the firmware revision. Also shows statistics on what was transmitted and received on the interface.

exit

Returns to the GWCON (+) prompt.

PRI Line Configuration Commands

Enter these commands at the PRI Line Config> prompt. Enter ? to list available commands or their options.

list

Displays the current Primary Rate ISDN line speed (E1 or T1) and configuration.

set

clocking internal *or* external

Specifies the source of the transmit clock. The default is external.

encoding *format*

Specifes the encoding format to be used. On an E1 line the format may be AMI, JBZS, or HDB3 (*default*). On a T1 line the format may be AMI, JBZS, or B8ZS3 (*default*).

framing *format*

Specify the zero code suppression format to use. On an E1 line the format may be E1-DF, E1-DF-CRC, E1-MF, or E1-MF-CRC (*default*). On a T1 line the format may be T1-SF or T1-ESF (*default*).

exit

Returns to the ISDN Config> prompt.

PRI Line Console Commands

Enter these commands at the PRI Line> prompt. Enter ? to list available commands or their options.

parameters

Displays the current Primary Rate ISDN line speed and configuration.

statistics

all

Displays the current error and alarm statistics for this PRI interface.

alarms

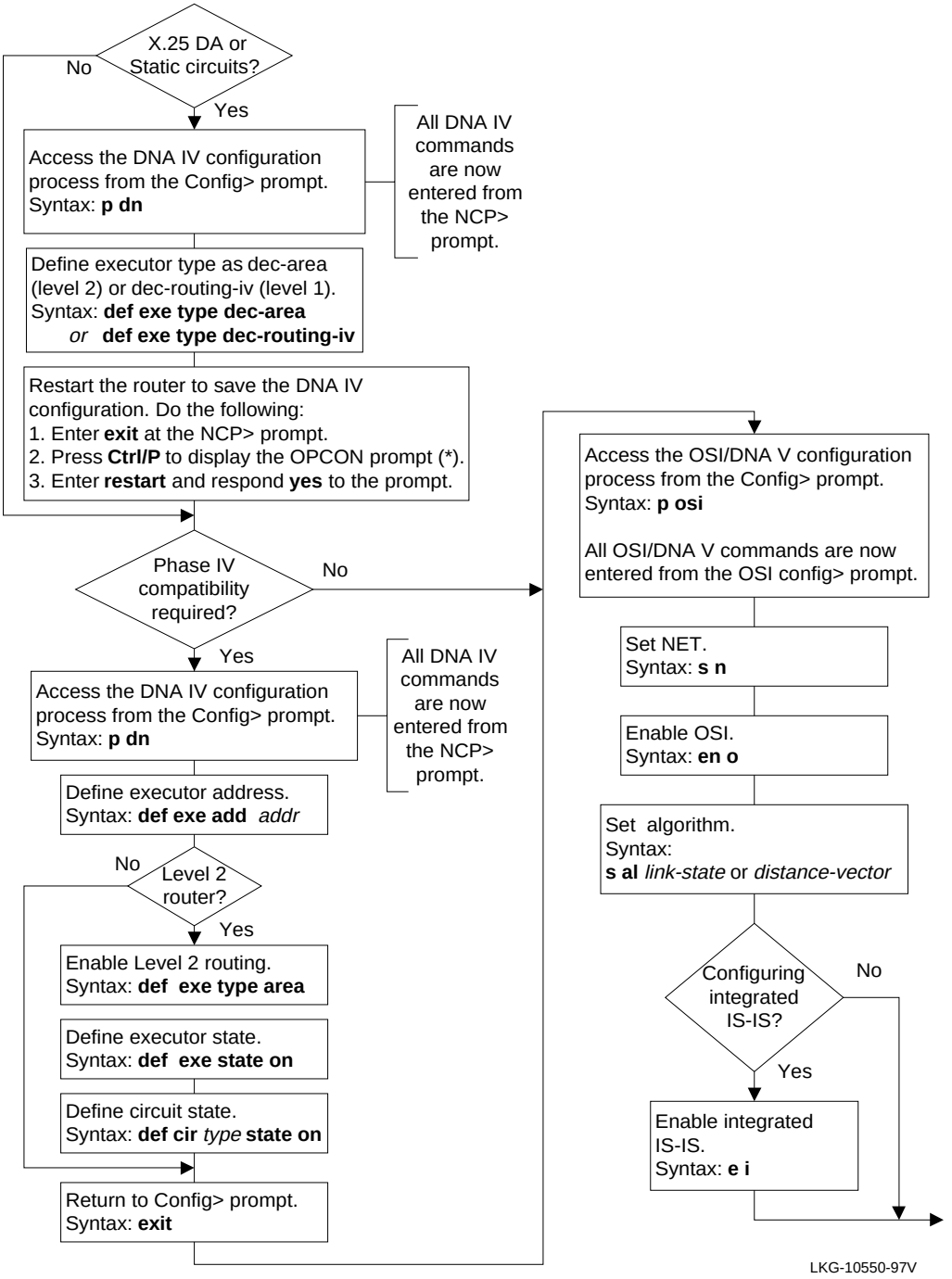
Displays the status of the alarm indicators.

errors

Displays the status of the error counters.

exit

Returns to the ISDN> prompt.



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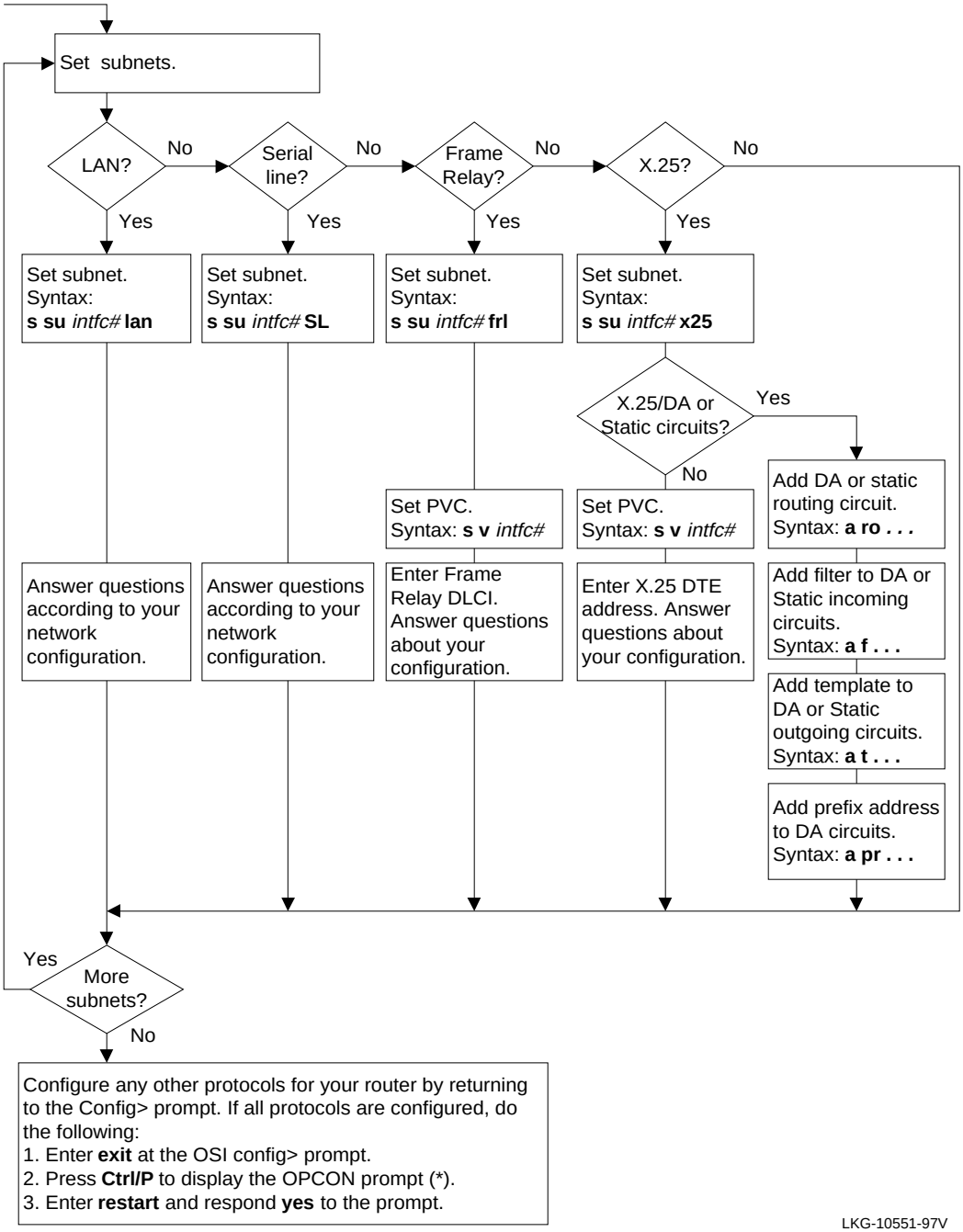

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OSI/DNA V Configuration Commands

Enter the following configuration commands at the OSI config> prompt. To list the configuration commands and their options, enter a ?

After you have configured all the protocols, enter **restart** at the OPCON prompt (*), and respond **yes** to the prompt:

Are you sure you want to restart the router?

add

alias *alias segment offset*
Adds an ASCII string that designates a particular address or system ID.

area *area-address*
Adds additional area addresses that the node supports.

filter *filter-name circuit-name dte-address userdata priority*
Adds parameters to determine acceptance of incoming X.25 calls on a routing circuit (static incoming circuit or DA circuit).

permitted-neighbor *entry-name system-id verifier*
Adds a system ID (permitted neighbor) and its verifier password for system level security.

prefix-address ...
Adds static routes to destinations external to the IS-IS domain. Parameter prompts depend on subnet type.

receive-password *type password1 password2*
Adds an ASCII character string (8 characters maximum) that authenticates all incoming packets.

routing-circuit *interface# circuit-name* [static | da] [in | out]
Adds a communication channel for X.25 SVCs (*static-in*, *static-out* or *DA*). Additional parameters depend on type and direction.

summary-address *address mask default-metric*
Adds a summary address for abbreviating IP routing information at Level 2.

template *template-name circuit DTE-address userdata compression*
Adds a template for making outgoing X.25 static-out or X.25 DA circuits.

change

filter *name dte-address userdata*
Modifies an incoming X.25 call filter.

permitted-neighbor *entry-name system-id verifier*
Modifies a permitted neighbor and its verifier password.

prefix-address ...
Modifies a static route.

routing-circuit *circuit-name ...*
Modifies the configuration of an X.25 routing circuit.

summary-address *address mask default-metric*
Modifies an IP summary address.

template *template-name circuit DTE-address userdata compression*
Modifies an outgoing X.25 call template.

clear

receive-password *type*
Erases all configured receive-passwords.

sram
Erases the OSI configuration from SRAM.

transmit-password *type*
Erases the configured transmit-password.

delete

adjacency *interface# area-address system-id*
Removes statically configured ES adjacency.

alias *alias-name*
Removes a configured alias.

area *address*
Removes the specified configured area address.

filter *filter-name*
Removes a configured incoming X.25 filter.

permitted-neighbor *entry-name*
Removes a permitted neighbor and its verifier password.

prefix-address *interface# address-prefix*
Removes a configured prefix-address.

routing-circuit *circuit-name*
Removes a configured routing circuit.

subnet *interface#*
Removes a configured subnet from the specified interface.

summary-address *address*
Removes the specified statically configured IP summary address.

template *template-name*
Removes a configured outgoing X.25 call template.

virtual-circuit *interface# dte-address*
Removes a configured X.25 or Frame Relay virtual circuit.

disable

integrated-isis
Disables Integrated IS-IS. Disables capability to route IP traffic in addition to OSI traffic using OSI IS-IS Routing.

osi
Disables the OSI protocol running on the router.

routing-circuit *routing-circuit-name*
Disables the specified routing circuit.

subnet *interface#*
Disables the subnet on the specified interface.

enable

integrated-isis
Enables Integrated IS-IS to use a single routing protocol for routing both OSI and IP packets.

osi
Enables the OSI protocol running on the router.

routing-circuit *routing-circuit-name*
Enables the specified routing circuit.

subnet *interface#*
Enables the subnet on the specified interface.

list

adjacencies
Displays all statically configured ES adjacencies.

algorithm
Displays the routing algorithm when running the DNA V protocol.

alias
Displays the configured aliases and their corresponding address segments.

filter
Displays the defined filters for incoming X.25 routing circuits

globals
Displays a summary of the OSI configuration.

integrated-isis
Displays Integrated IS-IS configuration parameter settings.

permitted-neighbor
Displays the permitted neighbors and their verifier passwords.

phaseivpfx
Displays the configured DNA IV address prefix.

prefix-addresses
Displays all the SNPAs for statically configured routes.

routing-circuit [detailed | summary]
Displays a summary of all routing circuits or details of each circuit.

subnets [detailed | summary] *interface#*
Displays either a summary or detailed report for the specified interface.

summary-addresses
Displays all statically configured IP summary address entries.

template
Displays a list of all the defined templates for outgoing X.25 routing circuits.

timers
Displays the OSI/DNA V timer configuration.

virtual-circuit
Displays all configured X.25 or Frame Relay virtual circuits.

set

adjacency *interface# area-address system-id MAC-address*
Adds or changes an ES adjacency.

algorithm *level-1-algorithm level-2-algorithm*
This is a DNA V command that selects the routing algorithm, link-state or distance-vector.

globals ...
Configures the global parameters required by the OSI protocol.

network-entity-title *area-address system-id*
Configures the router's NET.

phaseivpfx *local-prefix*
Configures the prefix-address of an attached DNA IV network.

subnet *interface# subnet-type ...*
Adds or changes a subnet. Additional parameters depend on subnet type.

switches [on | off] [on | off] [on | off]
Turns OSI options (ES-IS checksum, ES-IS init, and authentication) on or off.

timers ...
Configures the OSI timers, excluding any circuit timers.

transmit-password *type password1 password2*
Sets or changes a transmit password.

virtual-circuit *interface# dte-address ...*
Configures an X.25 or Frame Relay virtual circuit.

exit
Returns to the previous prompt level.

OSI/DNA V Console Commands

Enter these commands after the OSI> prompt.

To list the OSI/DNA V console commands and their options, enter a ? after the OSI> prompt.

addresses
Displays the router's NET and area addresses.

change metric
Modifies the cost of a circuit.

clnp-stats
Displays OSI CLNP information.

designated-router
Displays the designated router for the LAN subnets that are actively running IS-IS.

dnav-info
Displays the Level 1 and Level 2 routing algorithm currently running on the router.

es-adjacencies
Displays all ES adjacencies.

es-is-stats
Displays the statistics for the ES-IS protocol.

is-adjacencies
Displays all IS adjacencies.

is-is-stats
Displays information associated with the IS-IS protocol.

l1-routes
Displays all L1 routes in the L1 database.

l2-routes
Displays all L2 routes in the L2 database.

l1-summary
Displays a summary of the L1 link state database.

l2-summary
Displays a summary of the L2 link state database.

l1-update
Displays a LSP for the specified L1 IS.

l2-update
Displays a LSP for the specified L2 IS.

route
Displays the next hop of a packet.

send
Encodes an echo request message in the CLNP packet to the specified destination NSAP.

show routing circuit
Displays the state of routing circuits for the specified interface.

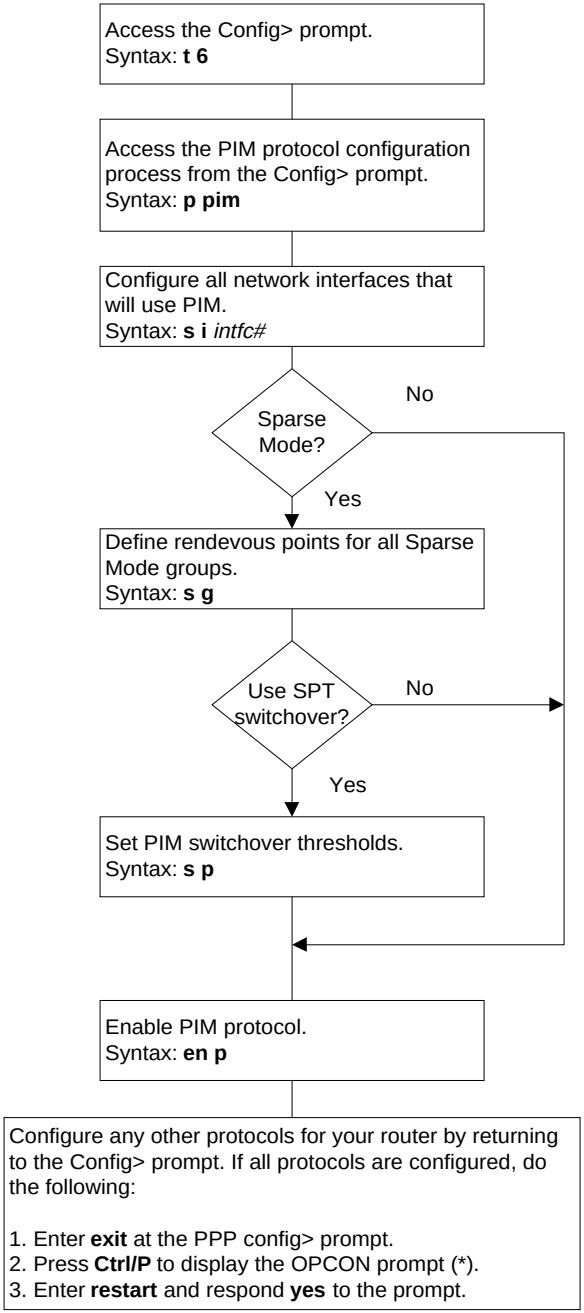
subnets
Displays information on all operational subnets.

toggle
Enables or disables the NSAP alias display function.

traceroute
Tracks the path an OSI packet takes to a destination.

virtual-circuits
Displays information on all X.25 virtual circuits.

exit
Returns to the previous prompt level.



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PIM Configuration Commands

Enter the following configuration commands at the PIM Config> prompt. To list the configuration commands and their options, enter a ?

After you have configured all the protocols, enter **restart** at the OPCON prompt (*), and respond **yes** to the prompt:

Are you sure you want to restart the router?

delete

group *group-address mask*
Removes the specified group entry from the group configuration table (Sparse Mode only).

interface *ip-address*
Removes the specified interface from the PIM interface configuration table.

disable

pim
Disables PIM protocol globally at system startup.

enable

pim *#-of-groups #-of-SPTs #-of-OIFs*
Enables PIM protocol globally at system startup, and reserves memory for routing tables.

join *group-address*

Sets permanent group membership for the router at system startup.

leave *group-address*

Removes permanent group membership previously configured using the **join** command.

list

all
Displays all information related to PIM options and parameters.

set

group *group-address mask RP1 RP2 RP3 RP4*
Maps a list of Rendezvous Point routers to a multicast group (Sparse Mode only).

interface *ip-address ...*
Identifies the specified interface for use by PIM and configures threshold timers and polling intervals.

pim ...
Sets global timers and thresholds and enables SPT switchover for Sparse Mode PIM. Sets (S,G) entry timeout for Dense Mode and Sparse Mode PIM.

exit

Returns to the Config> prompt.

PIM Console Commands

Enter these commands after the PIM> prompt.

To list the PIM console commands and their options, enter a ? at the PIM> prompt.

dump *source group*

Displays a summary of the (S,G) entries in the PIM routing table or a detailed listing of a selected (S,G) entry.

interface *ip-address* or *interface#*

Displays a summary listing of all PIM interfaces or a detailed listing of a selected interface.

join *group-address*

Sets group membership for the router. Used for testing purposes only. For example, use this command to set group membership at several routers, then use the **ping** command to verify the multicast group.

leave *group-address*

Removes group membership for the router previously requested using the **join** command. Used for testing purposes only.

mgroups

Displays the group membership for this router.

neighbor

Displays a summary of the neighboring PIM routers.

ping *destination-address*

Lets the router send ICMP echo requests to a given destination. You can use this command to ping a multicast group for troubleshooting.

routes

Displays the IP routing table. This command is equivalent to the IP console **dump** command.

stat

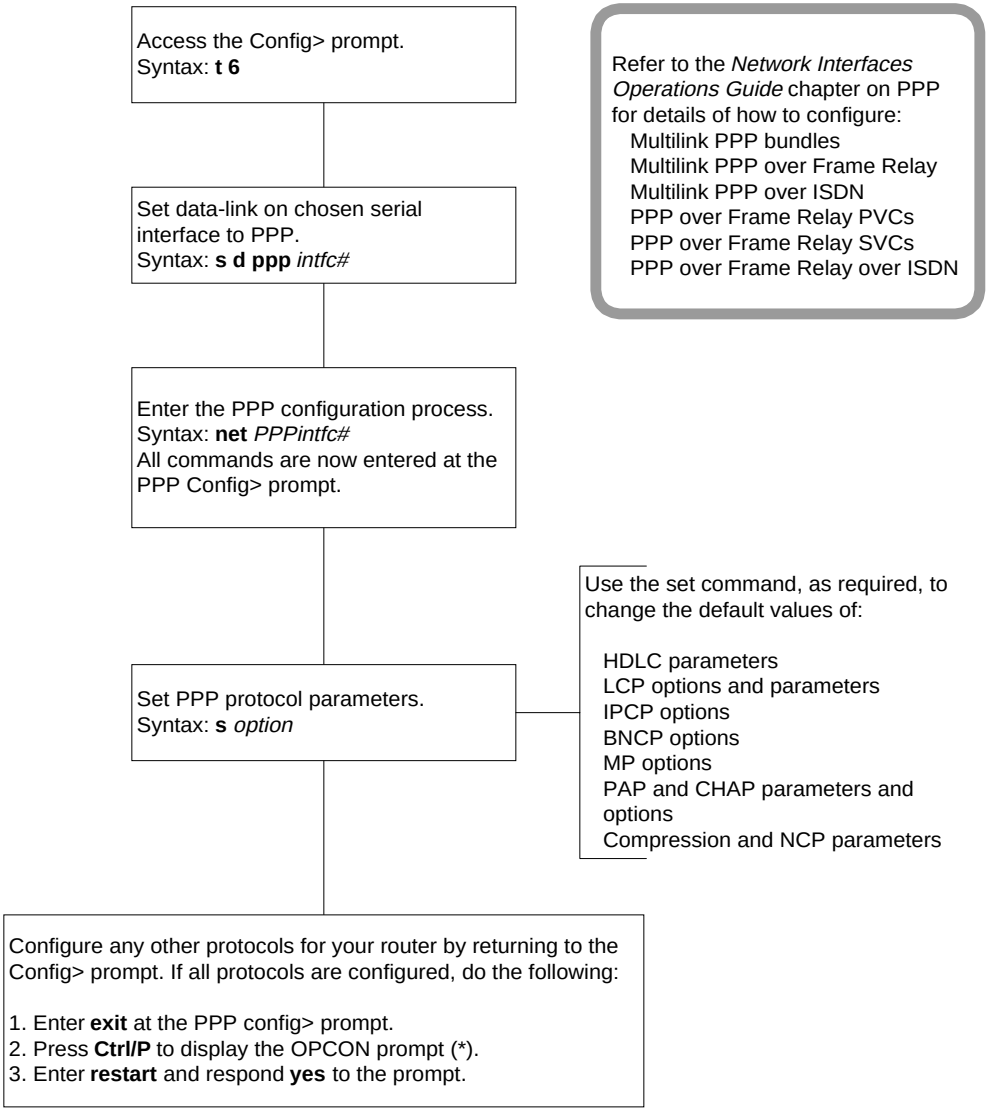
Displays static memory usage, data throughput, and error rates.

traceroute *destination-address*

Displays the entire hop-by-hop path to a given destination.

exit

Returns to the CGWCON prompt (+).



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PPP Interface Configuration Commands

Enter the following configuration commands at the PPP Config> prompt. To list the configuration commands and their options, enter a ?.

After you have configured all the protocols, enter restart at the OPCON prompt (*), and respond **yes** to the prompt

Are you sure you want to restart the router?

delete

chap
Deletes remote CHAP identifiers and passwords.

pap
Deletes local PAP identifiers and passwords.

link *circuit#*

Access the Link Circuit Config> prompt, or list link details if no *circuit#* is specified. This command is available only when configuring Multilink PPP Bundle (MPB) devices.

list

all
Lists all PPP options and parameters.

authentication
Lists the authentication protocol parameters and options (CHAP and PAP).

bncp
Lists Bridging Network control protocol options and parameters.

ccp
Lists the Compression Control Protocol options and parameters.

fixed
Lists the fixed links in a MP Bundle.This command is available only when configuring MPB devices.

frame-relay
Lists the frame relay parameters associated with a PPP-FR (PVC) pseudo interface. This command is available only when configuring PPP-FR or MPPP-FR devices.

hdlc
Lists the HDLC protocol options and parameters.

ipcp
Lists the Internet Protocol control protocol options and parameters.

lcp
Lists the Link Control Protocol options and parameters.

mp
Lists the Multilink Protocol and Bandwidth on Demand (BoD) options. This command is available only when configuring MPB devices.

parameters
Lists network control protocol options and parameters.

profile-list
Lists telesaving profiles configured on the router. This command is available only when configuring MPB devices.

profile-list

blocking *profile-name* or all
Lists the call blocking telesaving profiles which have been configured on the router. This command is available only when configuring MPB devices.

call-back *profile-name* or all
Lists the call back telesaving profiles which have been configured on the router. This command is available only when configuring MPB devices.

initial-minimum-timer *profile-name* or all
Lists the initial minimum timer telesaving profiles which have been configured on the router. This command is available only when configuring MPB devices.

set

authentication
Sets the authentication protocol parameters and options (CHAP and PAP).

bncp
Sets Bridging Network control protocol Tinygram compression yes or no.

ccp *options* or *parameters*
Sets the Compression Control Protocol options and parameters.

fixed add
Sets the fixed links in a MP Bundle.This command is available only when configuring MPB devices.

fixed delete
Removes a fixed link from a MP Bundle.This command is available only when configuring MPB devices.

frame-relay
Creates a frame relay PVC and associates it with a (M)PPP-FR pseudo interface. This command is available only when configuring PPP-FR or MPPP-FR devices.

hdlc encoding *nrz* or *nzri*
Sets to NRZ or NRZI.

hdlc frame-size *size*
Sets maximum frame size, in bytes, that can be received over the data-link, in the range 576 to 4088.

hdlc idle *flag* or *mark*
Sets data-link idle state to either Flag or Mark.

hdlc speed *value*
Sets the reported clock speed, in buts per second. Used by SNMP to indicate the modem speed.

hdlc transmit-delay *# of microseconds*
Sets period of time to elapse between the transmission of each frame.

ipcp
Enables and configures all Internet Protocol control protocol options for the link, including IP compression, sending and requesting IP address.

lcp *options* or *parameters*
Sets the Link Control Protocol options and parameters.

mp
Sets the Multilink Protocol and Bandwidth on Demand (BoD) options. This command is available only when configuring MPB devices.

parameters
Sets network control protocol parameters including retry timer, configuration tries, NAK tries, and Terminate tries.

blocking
Specifies the call blocking telesaving profile for a Multilink PPP dial (link) circuit to use. This command is available only when configuring MPB devices.

call-back
Specifies the call back telesaving profile for a Multilink PPP dial (link) circuit to use. This command is available only when configuring MPB devices.

initial-minimum-timer
Specifies the initial minimum timer telesaving profile for a Multilink PPP dial (link) circuit to use. This command is available only when configuring MPB devices.

exit
Returns to the Config> prompt.

PPP Interface Console Commands

Enter these commands after the PPP> prompt.

To list the PPP console commands and their options, enter a ? at the PPP> prompt

clear

Clears all statistics from point-to-point interfaces.

link *circuit#*

Accesses the MP Link> prompt, or list link details if no *circuit#* is specified. This command is available only when monitoring Multilink PPP Bundle (MPB) devices.

list

all

Displays all information and counters related to the point-to-point interface and the PPP options and parameters.

ap2

Lists the number of AppleTalk Phase 2 packets, bytes, and protocol-reject packets transmitted and received over the current point-to-point interface.

atcp

Lists the number of ATCP packets, bytes in octets, and protocol-reject packets transmitted and received over the current point-to-point interface.

bncp

Lists the number of BNCP packets, bytes in octets, and protocol-reject packets transmitted and received over the current point-to-point interface.

bod

Lists Bandwidth on Demand statistics. This command is available only when monitoring MPB devices or MP fixed links.

ccp

Lists the number of CCP packets, bytes in octets, protocol reset requests, acknowledgements and reject packets, and the recent compression ratios transmitted and received over the current point-to-point interface.

chap

Lists the number of CHAP packets, bytes in octets, and authentication request, acknowledgement, and reject packets transmitted and received over the current point-to-point interface.

compression

Lists the number of compressed packets, bytes in octets, compressed octets, incompressible packets, discarded packets, and protocol-reject packets transmitted and received over the current point-to-point interface.

control *control protocol*

Lists information and counters related to the specified control protocol: LCP, PAP, CHAP IPCP, DNCP, IPXCP, BNCP, ATCP, OSICP, CCP, MP.

dn

Lists the number of DECnet packets, bytes in octets, and protocol-reject packets transmitted and received over the current point-to-point interface.

dncp

Lists the number of DECnet control protocol packets, bytes in octets, and protocol-reject packets transmitted and received over the current point-to-point interface.

errors

Displays all error conditions tracked by the PPP software.

fixed

Lists the fixed links in an MP Bundle. This command is available only when monitoring MPB devices.

frame-relay
Lists the frame relay parameters associated with a PPP-FR pseudo interface.

ip
Lists the number of IP packets, bytes in octets, and protocol-reject packets transmitted and received over the current point-to-point interface.

ipcp
Lists the number of IPCP packets, bytes in octets, and protocol-reject packets transmitted and received over the current point-to-point interface.

ipx
Lists the number of IPX packets, bytes in octets, and protocol-reject packets transmitted and received over the current point-to-point interface.

ipxcp
Lists the number of IPXCP packets, bytes in octets, and protocol-reject packets transmitted and received over the current point-to-point interface.

lcp
Lists all of the Link Control Protocol statistics.

mp
Lists the number of Multilink Protocol packets, bytes in octets, and protocol-reject packets transmitted and received over the current point-to-point interface.

osi
Lists the number of OSI packets, bytes in octets, and protocol-reject packets transmitted and received over the current point-to-point interface.

osicp
Lists the number of OSICP packets, bytes in octets, and protocol-reject packets transmitted and received over the current point-to-point interface.

pap
Lists the number of PAP packets, bytes in octets, and authentication request, acknowledgement, and reject packets transmitted and received over the current point-to-point interface.

exit
Returns to the CGWCON prompt (+)

PPP Multilink Link Circuit Configuration Commands

Enter the following configuration commands at the MP Link Config> prompt. To list the configuration commands and their options, enter a ?.

After you have configured all the parameters, return to the PPP Config> prompt using the exit command.

delete

inbound-destination
Deletes inbound call settings from the link circuit configuration.

list

Displays the current link circuit configuration.

set

any_inbound
Specifies that inbound calls that do not match any other link circuit are mapped to this circuit and accepted as inbound calls.

calls outbound *or* inbound *or* both (*default)*
Restricts the link circuit to making outbound calls only, accepting inbound calls only or both initiating and accepting calls.

destination *address-name*
Network dial address of the remote station.

inbound *local-address-name*
Network dial address of the local station.

net *interface#*
Specifies the number of the network interface to map the link circuit to. The interface may be V.25 *bis*, ISDN, Frame Relay dial circuit (SVC), or Frame Relay over ISDN.

selftest-delay *#milliseconds*
Set the time interval to wait after the call is established before the first packet is sent.

send_line_id yes *or* no
Specifies whether the proprietary local id messages are sent. Select **yes** for V.25 *bis* circuits.

exit

Returns to the PPP Config> prompt.

Multilink PPP Link Circuit Console Commands

Enter these commands after the MP Link> prompt.

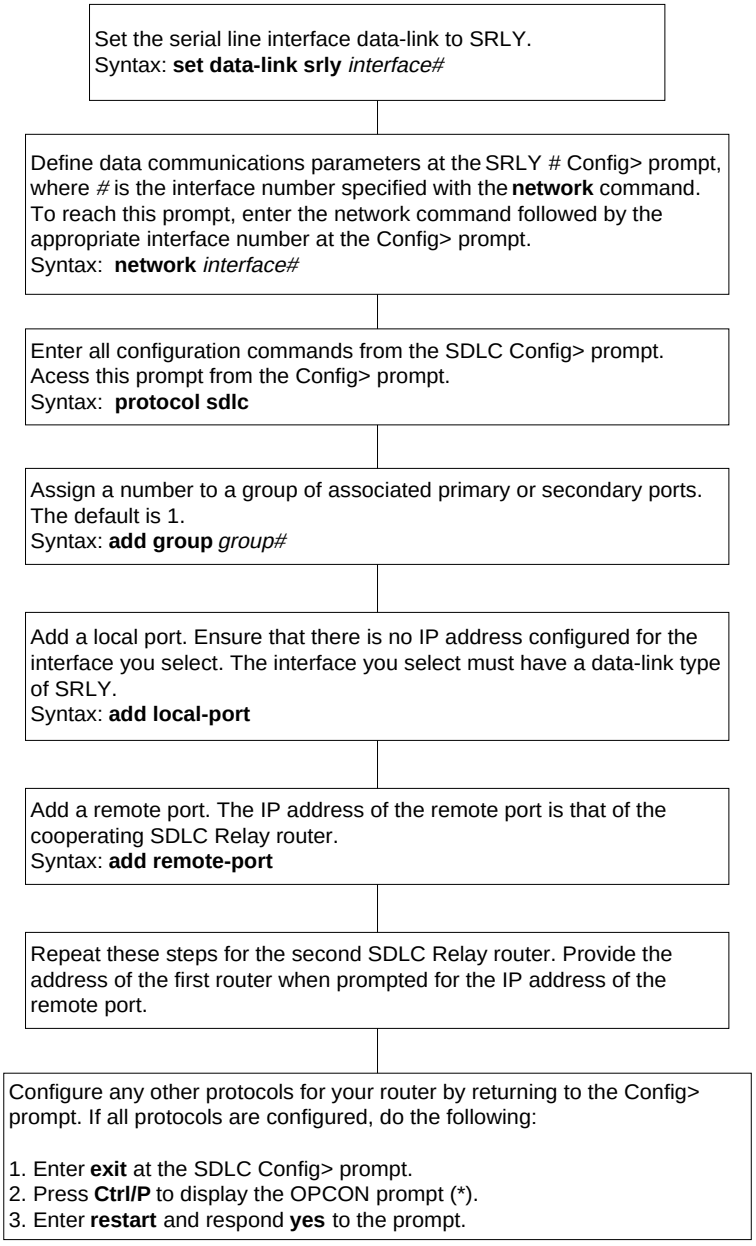
To list the MP Link console commands and their options, enter a ? at the MP Link> prompt.

list

The list commands and options are the same as the PPP console list command. The listing displays the current state of these options on the selected Multilink PPP Link circuit.

exit

Returns to the PPP> prompt .



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SDLC Relay Protocol Configuration Commands

Enter these commands at the SDLC Config> prompt. The end of this section tells you how to display this prompt. Enter ? to list available commands or their options.

It is important to note the following about the roles of local and remote ports:

- You need a port for both primary and secondary in each group (the local port takes one role and the remote port takes the opposite role)
- On the participating neighbor router, the port role designations are logically reversed on neighbor routers. For example, if router A has a local primary and a remote secondary, then its neighbor router B has a local secondary and a remote primary.

add

group *group#*
Assigns a number to a group of primary or secondary ports added to the router.

local-port *group# interface# primary-or-secondary*
Identifies the interface that you are using for the local port.

remote-port *group# IP address primary-or-secondary*
Identifies the IP address of the port directly connected to the serial line on the remote router.

delete

group *group#*
Removes a group of SDLC Relay configured ports.

local-port *interface#*
Removes the local port for the specified interface.

remote-port *group# primary-or-secondary*
Removes the remote port for the specified group.

disable

group *group#*
Suppresses the transfer of SDLC Relay frames to or from a specific group.

port *interface# primary-or-secondary*
Suppresses the transfer of SDLC Relay frames to or from a specific port.

enable

group *group#*
Allows the transfer of SDLC Relay frames to or from a specific group.

port *interface# primary-or-secondary*
Allows the transfer of SDLC Relay frames to or from a specific port.

list

all
Displays the configuration for all groups, and includes:
- group number
- port status
- interface number
- packets forwarded and discarded
- remote IP adress

group *group#*
Displays the configuration of the specified group, and includes:
- group number
- port status
- interface number
- packets forwarded and discarded
- remote IP address

exit
Returns to the Config> prompt.

SDLC Relay Protocol Console Commands

Enter these commands at the SDLC> prompt. The end of this section tells you how to display this prompt. Enter ? to list available commands or their options.

clear-port-statistics

Clears port statistics gathered since the last time the router was restarted or statistics were cleared.

disable

group *group#*

Suppresses the transfer of SDLC Relay frames to or from a specific group.

port *interface# primary-or-secondary*

Suppresses the transfer of SDLC Relay frames to or from a specific local port.

enable

group *group#*

Allows the transfer of SDLC Relay frames to or from a specific group.

port *interface# primary-or-secondary*

Allows the transfer of SDLC relay frames to or from a specific local port.

list

all

Displays the configuration for the local ports including the group number, port status, device number, packets forwarded and discarded, and the IP address.

group *group#*

Displays the configuration of the specified group including group number, port status, device number, packets forwarded and discarded, and IP address.

exit

Returns to the console prompt (+).

SDLC Relay Interface Configuration Commands

Enter these commands at the SRLY # config> prompt. The end of this section tells you how to display this prompt. Enter ? to list available commands or their options.

list

Displays the serial line interface configuration.

set

encoding *nrz* or *nzri*

Sets to NRZ or NRZI.

frame-size *size*

Sets maximum frame size, in bytes, that can be received over the data link, in the range 576 to 4088.

idle *flag* or *mark*

Sets data link idle state to either Flag or Mark.

transmit-delay *# of microseconds*

Sets period of time to elapse between the transmission of each frame.

exit

Returns to the Config> prompt.

Configuring SDLC Relay on the Router

Enter configuration commands at the Config> prompt. To access the Config> prompt:

```
*talk 6
Config>
```

If the Config> prompt does not appear, press **Return** again.

To enter SDLC Relay configuration commands, display the SDLC config> prompt as shown:

```
Config>protocol sdlc
SDLC Relay protocol user configuration
SDLC config>
```

Define communications parameters at the SRLY # config> prompt, where # is the interface number specified with the **network** command. To reach this prompt, set a network interface to data-link SRLY and enter the **network** command followed by the appropriate interface number. For example:

```
Config>set data-link srly 2
Config>network 2
SDLC relay interface user configuration
SRLY 2 config>
```

To return to the ***** prompt at any time, press **Ctrl/P**.

Restarting the Router

When you are done configuring the router, restart it to load the new configuration. Enter **restart** at the ***** prompt and respond **yes** to the following prompt:

```
Are you sure you want to restart the gateway? (Yes or No):
```

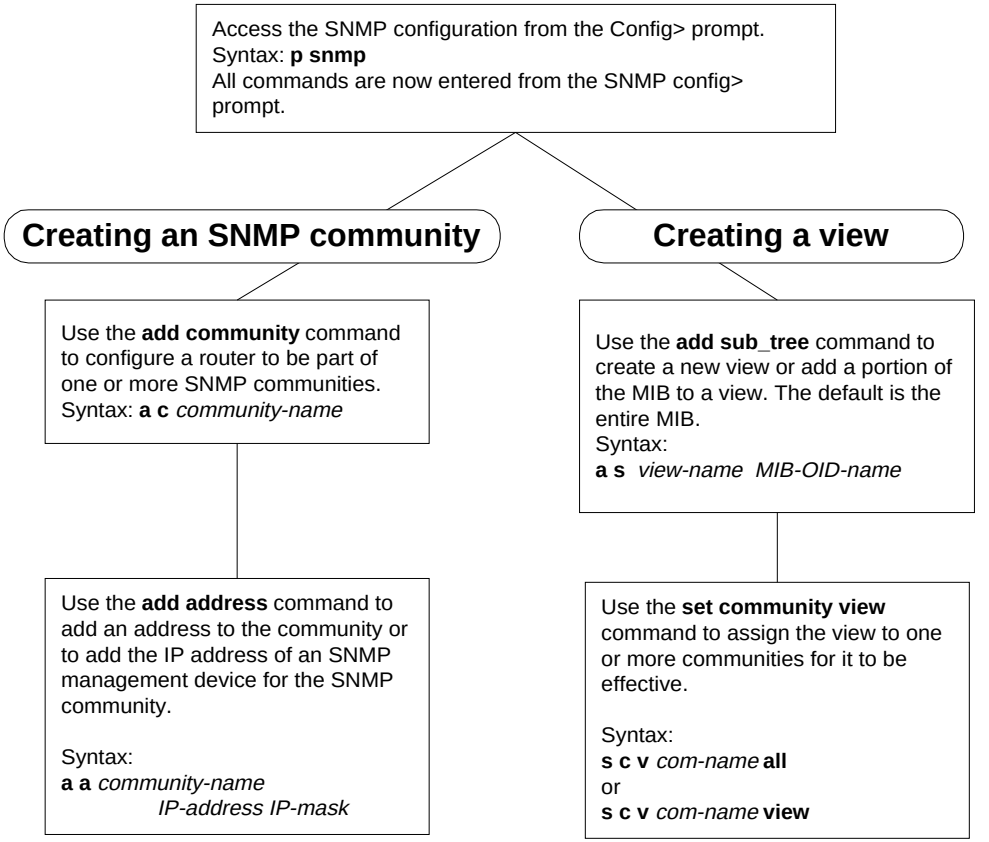
When the new configuration is finished loading, the terminal displays the ***** prompt.

Monitoring the Router

Enter monitoring commands at the console prompt. To enter SRLY protocol monitoring commands, display the SDLC> prompt as shown:

```
*talk 5

+protocol sdlc
SDLC>
```



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SNMP Configuration Commands

Enter these configuration commands after the SNMP config> prompt. To list the configuration commands and their options, enter a ?.

Be aware that, with the exceptions of the **disable**, **enable**, and **set trap_port** commands, you do not need to restart the router for the SNMP configuration commands to take effect.

add

address *community-name net-addr*
Adds a network address to an existing community. You must supply the name of the community and the network address (in the standard *a.b.c.d.* notation).

community *community-name*
Adds a name to the list of SNMP communities currently configured in the router.

sub_tree
Adds a portion of the MIB to a view or creates a new view. The default is the entire MIB. Be aware that you must assign a view to one or more communities with the **set community view** command for it to take effect.

delete

address *community-name net-addr*
Deletes an address from a community. You must supply the name of the community and the network address (in the standard *a.b.c.d.* notation).

community *community-name*
Deletes a name from the list of SNMP communities currently configured in the router.

sub_tree *object-id*
Removes a MIB or portion of the MIB from a view.

disable

snmp
Disables the SNMP protocol on the router.

trap *trap-type community-name*
Disables specified traps or all traps on the router.
Note: It is necessary to restart the router for this command to take effect.

enable

snmp
Enables the SNMP protocol on the router.

trap *trap-type community-name*
Enables specified traps or all traps on the router.
Note: It is necessary to restart the router for this command to take effect.

list

all
Displays the current configuration of specified SNMP communities for access modes, traps, network address, and views.

community *option*
Displays the current configuration of a specified SNMP community. Options are *access*, *traps*, *address*, and *view*. The default option is *access*.

views
Displays the current view for a specified SNMP community.

set

community access *community-name option*
Assigns one of three access types to a community. Options are *read_trap*, *write_read_trap*, and *trap_only*. You must supply the name of the community.

community view *community-name option*
Assigns a MIB view to a named community. Options are *all* and *view*. The default option is *all*.

trap_port *udpport#*

Allows you to specify a User Datagram Protocol (UDP) port number to send traps to the trap port. The default is the standard UDP port (default # 162).

Note: You must restart the router for this command modification to take effect.

exit

Returns to the previous prompt level.

SNMP Console Commands

Enter these commands after the SNMP> prompt. To list the SNMP console commands and their options, enter a ? after the SNMP> prompt.

list

all

Displays the current configuration of SNMP communities, authentication types, access modes, traps, and network addresses.

community *option*

Displays the current configuration of a specified SNMP community. Options are *access*, *traps*, *address*, and *view*. The default option is *access*.

views

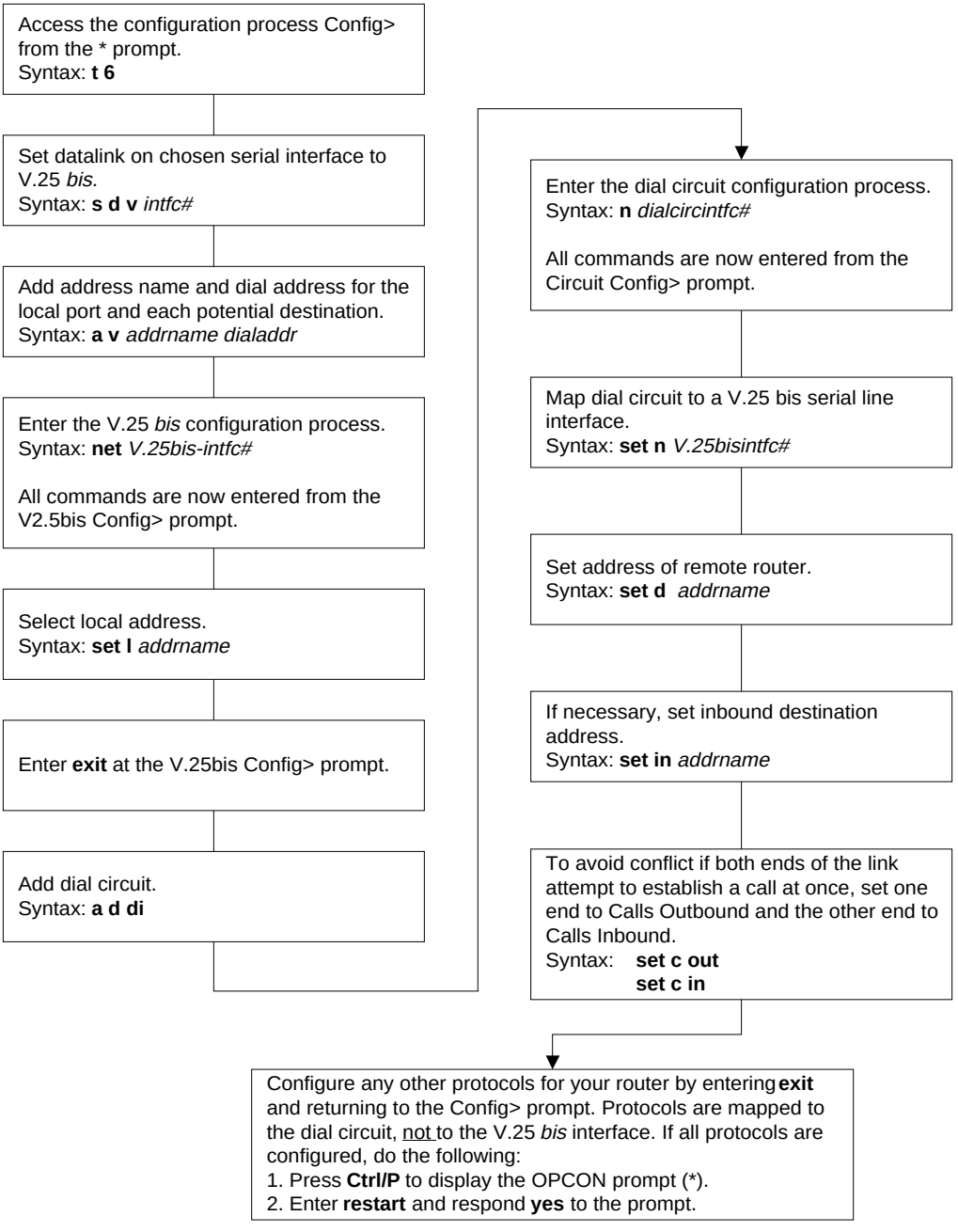
Displays the current view for a specified SNMP community.

statistics

Displays the statistics about the number of defined variables and the size of the MIB. The statistics can change only when the load or hardware configuration changes.

exit

Returns to the previous prompt level.



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V.25 *bis* Configuration Commands

Enter the following configuration commands at the V.25bis Config> prompt. To list the configuration commands and their options, enter a ?.

After you have configured all of the protocols, enter **restart** at the OPCON prompt (*), and respond **yes** to the prompt:

Are you sure you want to restart the router?

list

Displays the current V.25 *bis* configuration.

set

command-delay-timeout *# of milliseconds*

Maximum amount of time the router waits for the modem to respond to DTR with CTS. If the modem does not respond by the end of this delay, the router initiates or answers the call. Default is 0, which causes the router to wait for a CTS signal before it issues commands. Range is 0–65535.

connect-timeout *# of seconds*

Number of seconds allowed for a call to be established. Default is 60. Range is 0–65535.

dial-mode

Specifies the dialing mode to use: **V25BIS-DIAL** (default) or **DTR-DIAL**. Use DTR-DIAL if your modem does not support V.25 *bis* automatic dialing.

disconnect-timeout *# of seconds*

Maximum amount of time after dropping a signal (CTS, DSR, or RI) that the router waits for the modem to respond before it initiates further calls. Default is 2. Range is 0–65535.

local-address *address name*

Network address name of the local port.

retries-no-answer *# of calls*

Limits number of successive calls to an address that is inaccessible or that refuses those calls. Default is 1. Range is 0–10.

timeout-no-answer *# of seconds*

After the router reaches the maximum number of RETRIES-NO-ANSWER to a nonresponding address, it does not make any further calls to that address until this time has expired. This timeout period begins when the router attempts the first call to an address. Default is 0. Range is 0–65535.

exit

Returns to the Config> prompt.

V.25 *bis* Console Commands

Enter these commands from the V.25bis> prompt. To list the V.25 *bis* console commands and their options, enter a ? at the V.25bis> prompt.

calls

Lists the number of completed and attempted connections made for each dial circuit mapped to this interface since the last time statistics were reset on the router.

circuits

Shows the status of all dial circuits mapped to this V.25 *bis* interface.

parameters

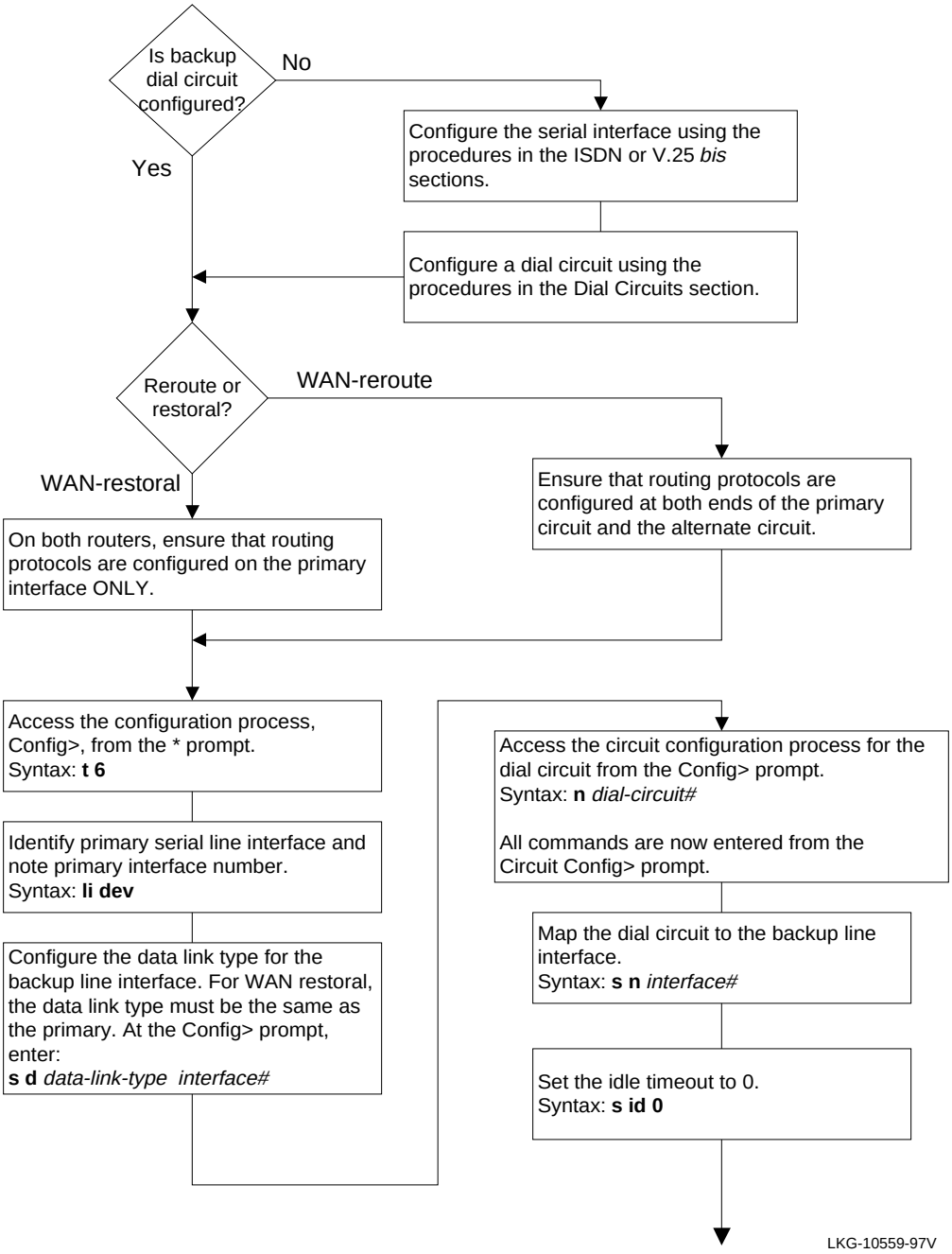
Displays the current V.25 *bis* serial line configuration.

statistics

Displays the current statistics for this V.25 *bis* interface.

exit

Returns to the GWCON (+) prompt.


Is backup dial circuit configured?
No
Yes
Configure the serial interface using the procedures in the ISDN or V.25 *bis* sections.
Configure a dial circuit using the procedures in the Dial Circuits section.
Reroute or restoral?
WAN-reroute
WAN-restoral
Ensure that routing protocols are configured at both ends of the primary circuit and the alternate circuit.
On both routers, ensure that routing protocols are configured on the primary interface ONLY.
Access the configuration process, Config>, from the * prompt.
Syntax: **t 6**
Identify primary serial line interface and note primary interface number.
Syntax: **li dev**
Configure the data link type for the backup line interface. For WAN restoral, the data link type must be the same as the primary. At the Config> prompt, enter:
s d *data-link-type interface#*
Access the circuit configuration process for the dial circuit from the Config> prompt.
Syntax: **n** *dial-circuit#*
All commands are now entered from the Circuit Config> prompt.
Map the dial circuit to the backup line interface.
Syntax: **s n** *interface#*
Set the idle timeout to 0.
Syntax: **s id 0**
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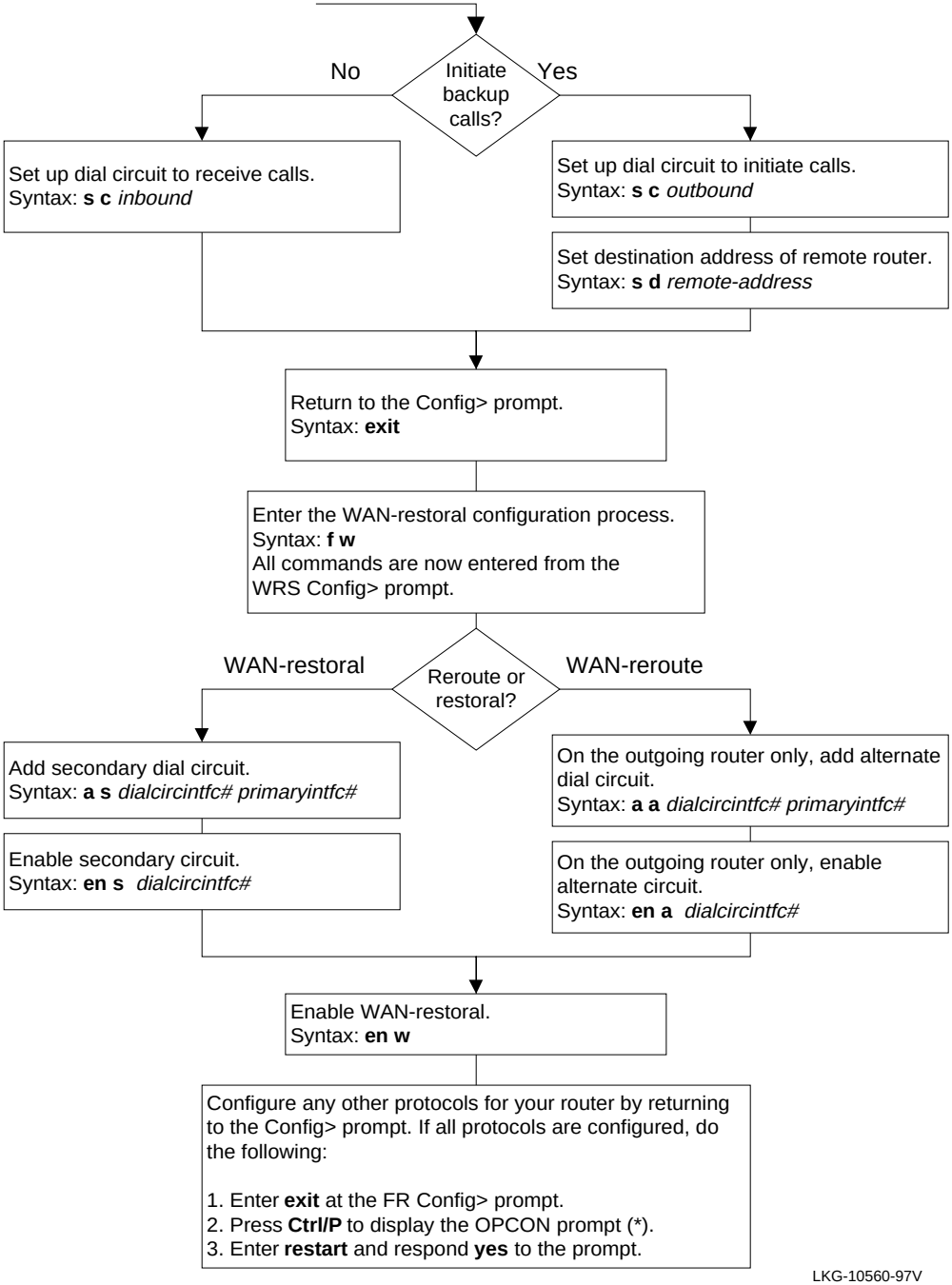

Initiate backup calls?
No
Yes
Set up dial circuit to receive calls.
Syntax: s c inbound
Set up dial circuit to initiate calls.
Syntax: s c outbound
Set destination address of remote router.
Syntax: s d remote-address
Return to the Config> prompt.
Syntax: exit
Enter the WAN-restoral configuration process.
Syntax: f w
All commands are now entered from the WRS Config> prompt.
Reroute or restoral?
WAN-restoral
WAN-reroute
Add secondary dial circuit.
Syntax: a s dialcircintfc# primaryintfc#
Enable secondary circuit.
Syntax: en s dialcircintfc#
On the outgoing router only, add alternate dial circuit.
Syntax: a a dialcircintfc# primaryintfc#
On the outgoing router only, enable alternate circuit.
Syntax: en a dialcircintfc#
Enable WAN-restoral.
Syntax: en w
Configure any other protocols for your router by returning to the Config> prompt. If all protocols are configured, do the following:
1. Enter exit at the FR Config> prompt.
2. Press Ctrl/P to display the OPCON prompt (*).
3. Enter restart and respond yes to the prompt.
LKG-10560-97V

WAN-Restoral and WAN-Reroute Configuration Commands

Enter the following configuration commands at the WRS Config> prompt. To list the configuration commands and their options, enter a ?.

After you have configured all of the protocols, enter **restart** at the OPCON prompt (*), and respond **yes** to the prompt

Are you sure you want to restart the router?

add

alternate-circuit *alternate-interface# primary-interface#*

Maps an alternate interface to a primary interface for WAN reroute.

secondary-circuit *secondary-interface# primary-interface#*

Maps a secondary interface to a primary interface for WAN restoral.

disable

alternate-circuit *alternate-interface#*

Disables WAN reroute for the primary interface that is mapped to this alternate interface.

secondary-circuit *secondary-interface#*

Disables WAN restoral for the primary interface that is mapped to this secondary interface.

wrs

Globally disables WAN restoral or WAN reroute on this router.

enable

alternate-circuit *alternate-interface#*

Enables WAN reroute for the primary interface that is mapped to this alternate interface.

secondary-circuit *secondary-interface#*

Enables WAN restoral for the primary interface that is mapped to this secondary interface.

wrs

Globally enables WAN restoral or WAN reroute on this router.

list

Shows WAN restoral and WAN reroute configuration and status on this router. Lists each primary-to-secondary interface mapping and whether or not WAN restoral is enabled for those interfaces. Lists each primary-to-alternate interface mapping and whether or not WAN reroute is enabled for those interfaces.

remove

alternate-circuit *alternate-interface#*

Removes mapping of the alternate interface to the primary interface for WAN reroute.

secondary-circuit *secondary-interface#*

Removes mapping of the secondary interface to the primary interface for WAN restoral.

set

Sets stabilization intervals for use by WAN reroute.

default first-stabilization *interval*

Sets the interval that will be used as a default value for the first-stabilization time.

default stabilization *interval*

Sets the interval that will be used as a default value for the subsequent stabilization time.

first-stabilization *interval*

Sets the interval that will be used for the first stabilization time.

stabilization *interval*

Sets the interval that will be used for the subsequent stabilization time.

exit

Returns to the Config> prompt.

WAN-Restoral and WAN-Reroute Console Commands

Enter these commands from the WRS> prompt. To list the WAN-restoral console commands and their options, enter a ? at the WRS> prompt. Use the WAN-restoral console to monitor WAN restoral and WAN reroute configurations.

clear

Clears the statistics dsiplayed by the **list** commands. Does not clear the "Most recent restoral period" statistics.

disable

alternate-circuit *alternate-interface#*

Disables the rerouting of the primary interface that is mapped to this alternate interface until the next restart, reload, or **enable alternate** command if both interfaces were previously configured and bound together in a WAN reroute configuration.

secondary-circuit *secondary-interface#*

Disables the restoral of the primary interface that is mapped to this secondary interface until the next restart, reload, or **enable secondary** command if both interfaces were previously configured and bound together in a WAN restoral configuration.

wrs

Disables WAN restoral or WAN reroute on the router until the next restart, reload, or **enable wrs** command.

enable

alternate-circuit *alternate-interface#*

Enables the rerouting of the primary interface. WAN reroute remains enabled only until the next time you restart the router or until you issue the **disable** command.

secondary-circuit *secondary-interface#*

Enables the restoral of the primary interface. WAN restoral remains enabled only until the next time you restart the router or until you issue the **disable** command.

wrs

Globally enables WAN restoral or WAN reroute on this router.

list

alternate-circuit *alternate-interface#*

Lists statistics for the selected alternate circuit.

circuit

Provides statistics for all alternate and secondary dial circuits and their associated primary interfaces.

secondary-circuit *secondary-interface#*

Lists statistics for the selected secondary circuit.

status

Lists status information for individual alternate and secondary circuits and their associated primary interfaces.

set

Sets stabilization intervals for use by WAN reroute.

default first-stabilization *interval*

Sets the interval that will be used as a default value for the first-stabilization time.

default stabilization *interval*

Sets the interval that will be used as a default value for the subsequent stabilization time.

first-stabilization *interval*

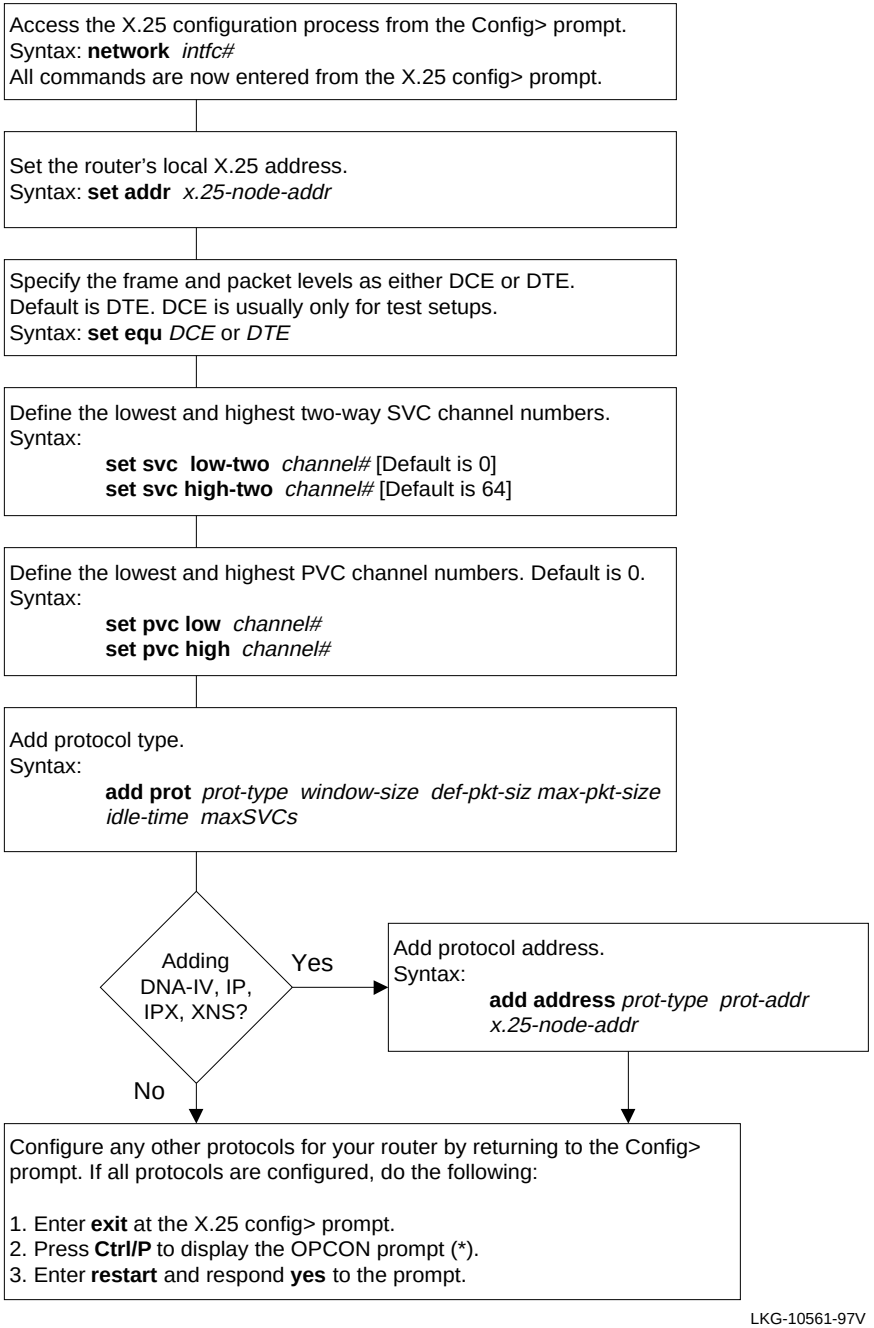
Sets the interval that will be used for the first stabilization time.

stabilization *interval*

Sets the interval that will be used for the subsequent stabilization time.

exit

Returns to the GWCON (+) prompt.



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X.25 Interface Configuration Commands

Enter the following configuration commands at the X.25 Config> prompt. To list the configuration commands and their options, enter a ?.

After you have configured all of the protocols, enter **restart** at the OPCON prompt (*), and respond **yes** to the prompt

Are you sure you want to restart the router?

add

address *prot-type prot-addr x.25-node-addr*
Adds a public data network (PDN) X.25 address translation for a protocol supported in the router's configuration and specifies whether compression is to be used on calls to this address.

htf-address *prot-type DDN-host-table-addr*
Adds a Defense Data Network (DDN) X.25 address translation.

protocol *prot-type window-size def-pkt-size max-pkt-size idle-time max-svcs*
Adds a supported protocol to the configuration.

pvc *prot-type pkt-channel# x.25-dest-addr window-size pkt-size*
Adds a PVC definition to the configuration.

change

address *prot-type prot-addr x.25-node-addr*
Modifies a PDN X.25 node address translation for a protocol supported in the router's configuration and specifies whether compression is to be used on calls to this address.

htf-address *prot-type DDN-host-table-addr*
Modifies a DDN X.25 address translation.

protocol *prot-type window-size def-pkt-size max-pkt-size idle-time max-svcs*
Modifies a supported protocol in the router's configuration.

pvc *prot-type pkt-channel# x.25-dest-addr window-size pkt-size*
Modifies a PVC definition in the router's configuration.

delete

address *prot-type prot-addr*
Removes a PDN or DDN X.25 address.

protocol *prot-type*
Removes a protocol configuration definition.

pvc *prot-type x.25-dest-addr*
Removes a PVC definition.

disable

compression
Disables Stac-LZS data compression over the X.25 interface.

ddn-address-translations
Disables DDN host table format addresses from being converted dynamically to X.121 call addresses.

interface-resets
Disables the router from initiating packet layer restarts and frame link establishments.

incoming-calls-barred
Specifies that the router will accept incoming calls (certification purposes).

outgoing-calls-barred
Specifies that the router will allow outgoing calls.

enable

compression
Enables Stac-LZS data compression over the X.25 interface.

ddn-address-translations
Allows DDN host table format addresses to be converted dynamically to X.121 call addresses.

interface-resets
Allows the router to initiate packet layer restarts and frame link establishments.

incoming-calls-barred
Specifies that the router will not accept incoming calls.

outgoing-calls-barred
Specifies that the router will not allow outgoing calls.

list

addresses
Displays all X.25 address translations.

all
Displays all the X.25 addresses, National Personality parameters, all defined protocols and their values, and all defined PVCs.

detailed
Displays the value of all the default parameters that the **national set** command modifies.

protocols
Displays all the defined protocol configurations.

pvc
Displays all defined PVCs.

summary
Displays all the values established by the **set** and **enable** commands.

national disable

accept-reverse-charges
Does not allow accepting of reverse charges during call establishment.

ccitt
Disables the CCITT convention for timer retries.

clear-w/diag
Does not allow the clear request packets to include the diagnostic field.

flow-control-negotiation
Disables the negotiation of frame's packet and window size during call setup of SVCs.

frame-ext-seq-mode
Disables the frame layer from using extended sequence numbers 0 to 127. The frame layer then uses 0 to 7.

multi-link-addresses
Sets the frame level back to addresses A (03) and B (01).

osi-84
Disables the CCITT OSI facilities defined by the 1984 standard.

osi-88
Disables the CCITT OSI facilities defined by the 1988 standard.

packet-ext-seq-mode
Disables the packet layer from using extended sequence numbers 0 to 127. The packet layer then uses 0 to 7.

packet-layer-restarts
Disables the packet layer from sending a restart packet when the router restarts.

request-reverse-charges
Disables requesting of reverse charges on all outgoing calls.

reset-w/diag
Disables the reset request packet from including the diagnostic field.

restart-w/diag
Disables the restart request packet from including the diagnostic field.

suppress-calling-addresses
Allows the router to insert the source address in call packets.

suppress-idle-frame-rr
Allows the router to send an idle receiver ready in frame layer frames.

suppress-non-zero-cause
Enables the packets layer cause fields.

throughput-class-negotiation
Disables the negotiation of throughput class during call setup of SVCs.

national enable

accept-reverse-charges
Accepts reverse charges during call establishment.

ccitt
Specifies the use of the CCITT convention, rather than the ISO convention for timer retries.

clear-w/diag
Allows clear request packets to include the diagnostic field.

flow-control-negotiation
Enables the negotiation of frame's packet and window size during call setup of SVCs.

frame-ext-seq-mode
Specifies the frame layer to use extended sequence numbers 0 to 127.

multi-link-addresses
Sets the frame level addresses to C (0F) and D (07), rather than A (03) and B (01).

osi-84
Enables the CCITT OSI facilities defined by the 1984 standard.

osi-88
Enables the CCITT OSI facilities defined by the 1988 standard.

packet-ext-seq-mode
Specifies the packet layer to use extended sequence numbers 0 to 127.

packet-layer-restarts
Allows the packet layer to send a restart packet when the router restarts.

request-reverse-charges
Allows the router to request reverse charges on all outgoing calls.

reset-w/diag
Allows the reset request packet to include the diagnostic field.

restart-w/diag
Allows the restart request packet to include the diagnostic field.

suppress-calling-addresses
Inhibits the inclusion of source addresses in call packets.

suppress-idle-frame-rr
Suppresses the sending of idle receiver ready in frame layer frames.

suppress-non-zero-cause
Suppresses the packet layer cause fields.

throughput-class-negotiation
Allows the negotiation of throughput class during call setup of SVCs.

national restore

all
Restores all the default values to the National Personality configuration.

accept-reverse-charges
Restores the accept-reverse-charges feature for calls during call establishment.

call-req
Restores the default value of 10 second intervals permitted before clearing an unaccepted call.

ccitt
Restores CCITT convention feature.

clear-req *retries timer*
Restores the default value for the number of clear requests transmissions (*retries*) and the number of 10 second intervals (*timer*) to wait before retransmission.

clear-w/diag
Restores the default feature that allows the inclusion of the diagnostic field in clear request packets.

disconnect-procedure *passive* or *active*
Restores the default type of disconnect procedure, passive or active.

dp-timer
Restores the default value the number of milliseconds that the frame level remains in the disconnected state.

flow-control-negotiation
Restores the router's capability to negotiate packet size and window size.

frame-ext-seq-mode
Restores the default for the frame layer sequence numbering modulus.

frame-window-size
Restores the default size of the frame window.

multi-link-addresses
Restores the default values (A+B) for frame layer addressing.

network-type *CCITT* or *DDN*
Restores the default window.

n2-timeouts
Restores the default value for the number of times the T1 timer can expire before a state change.

osi-84
Restores the default value for CCITT OSI facilities as defined by the 1984 standard.

osi-88
Restores the default value for CCITT OSI facilities as defined by the 1988 standard.

packet-size *default-size max-size window-size*
Restores the default value for the packet layer parameters mentioned above.

packet-ext-seq-mode
Restores the default value for the packet layer sequence numbering modulus.

packet-layer-restarts
Restores the default value for the packet layer transmission of a restart packet when the router restarts.

request-reverse-charges
Restores the default value for reverse charges requests for all outgoing calls.

reset *retries timer*
Restores the default value for the number of reset request transmissions, and the time between transmissions.

reset-w/diag
Restores the inclusion of diagnostic fields in reset request packet.

restart *retries timer*
Restores the default value for the number of restart request transmissions and the timeout value between each restart.

standard-version
Restores the default OSI facilities settings. Options are 1980, 1984, and 1988.

suppress-calling-address
Restores the inclusion of source addresses in call packets.

suppress-idle-frame-rr
Restores the transmission of idle receiver ready frame layer frames.

suppress-non-zero-cause
Restores the inclusion of the packet layer's cause fields.

throughput-class-negotiation
Restores the enabling of throughput negotiation.

t1-timer
Restores the default value for the frame retransmission time in seconds.

t2-timer
Restores the default value for the maximum number of seconds before acknowledging the receipt of an I-frame.

national set

call-req
Specifies the number of 10 second intervals permitted before clearing an unaccepted call.

clear-req *retries timer*
Specifies the maximum number of clear request re-transmissions and the timeout interval between each of them.

disconnect-procedure *passive* or *active*
Specifies the type of disconnect procedure when disconnecting, passive or active.

dp-timer
Specifies the number milliseconds that the frame level remains in a disconnect state.

frame-window-size
Specifies the number of frames that can be outstanding before acknowledgment.

idle-frame-timer
Specifies the delay before an idle frame is sent to refresh the interface. It is a multiple of T1.

network-type *CCITT DDN*
Specifies the type of network being supported, CCITT or DDN.

n2-timeouts
Specifies the number of times the T1 timer can expire before a state change.

packet-size *default-size max-size window-size*
Specifies the size of the packet and window used for negotiation.

reset *retries timer*
Specifies the number of reset request re-transmissions and the timeout value between each re-transmission.

restart *retries timer*
Specifies the number of restart request re-transmissions and the timeout value between each re-transmission.

standard-version
Determines some of the standard default settings. Options are 1980, 1984, and 1988.

t1-timer
Specifies the frame re-transmit time in seconds.

t2-timer
Specifies the maximum number of seconds before acknowledging the received I-frame. Must be less than T1 and should be greater than 0.

set

address *x.25-node-addr*
Sets the local X.25 interface address.

calls-out
Specifies the maximum number of SVCs for this link.

compression-disable-threshold *value*
Specifies the number of incompressible bytes that can be transmitted before compression is dynamically disabled.

dial-type *point-to-point* or *proprietary*
Sets the dial circuit type if this device is an X.25 Dial Circuit over an ISDN interface.

default-window-size
Specifies the window size for the packet level. Note that the window is assumed if no window-size facility is present in the Call Setup Packet.

equipment-type *DCE DTE*
Specifies whether the frame and packet levels act as DCE or DTE.

hft addr *x.25-node-addr*
Sets the local X.25 address translation.

inter-frame-delay *value*
Sets the minimum number of flags transmitted between frames.

max-retry *value*
Sets the maximum number (*value*) of reset request transmissions permitted before the call is cleared.

minimum-compression-message-size *value*
Sets the minimum size of a routing packet which will be compressed for calls with no compression dictionary assigned.

mtu *value*
Sets the maximum transmission unit (MTU) size in bytes.

national personality *GTE-Telenet DDN*
Sets the 28 default parameters for either *GTE-Telenet* or *DDN*.

pvc low
Defines the lowest PVC channel number.

pvc high
Defines the highest PVC channel number.

speed *value*
Defines the line speed of this interface.

svc low-inbound
Defines the lowest inbound SVC channel number.

svc low-two-way
Defines the lowest two-way SVC channel number.

svc low-outbound
Defines the lowest outbound SVC channel number.

svc high-inbound
Defines the highest inbound SVC channel number.

svc high-two-way
Defines the highest two-way SVC channel number.

svc high-outbound
Defines the highest outbound SVC channel number.

throughput-class *inbound* or *outbound* *bit-rate*
Defines the default bit rate between 75 bps and 48,000 bps for an inbound or outbound logical channel.

vc-idle
Defines the number of seconds that an SVC can be idle before it is cleared.

exit
Returns to the previous prompt level.

X.25 Interface Console Commands

Enter these commands from the X.25> prompt. To list the X.25 console commands and their options, enter a ? at the X.25> prompt.

list

pvcs
Displays the configured PVCs.

svcs
Displays the active SVCs.

parameters

all
Displays the parameters for packet, frame, and physical levels.

frame
Displays the parameters for the frame level.

packet
Displays the parameters for the packet level.

physical
Displays the parameters for the physical level.

statistics

all
Displays the statistics for the packet, frame, and physical levels.

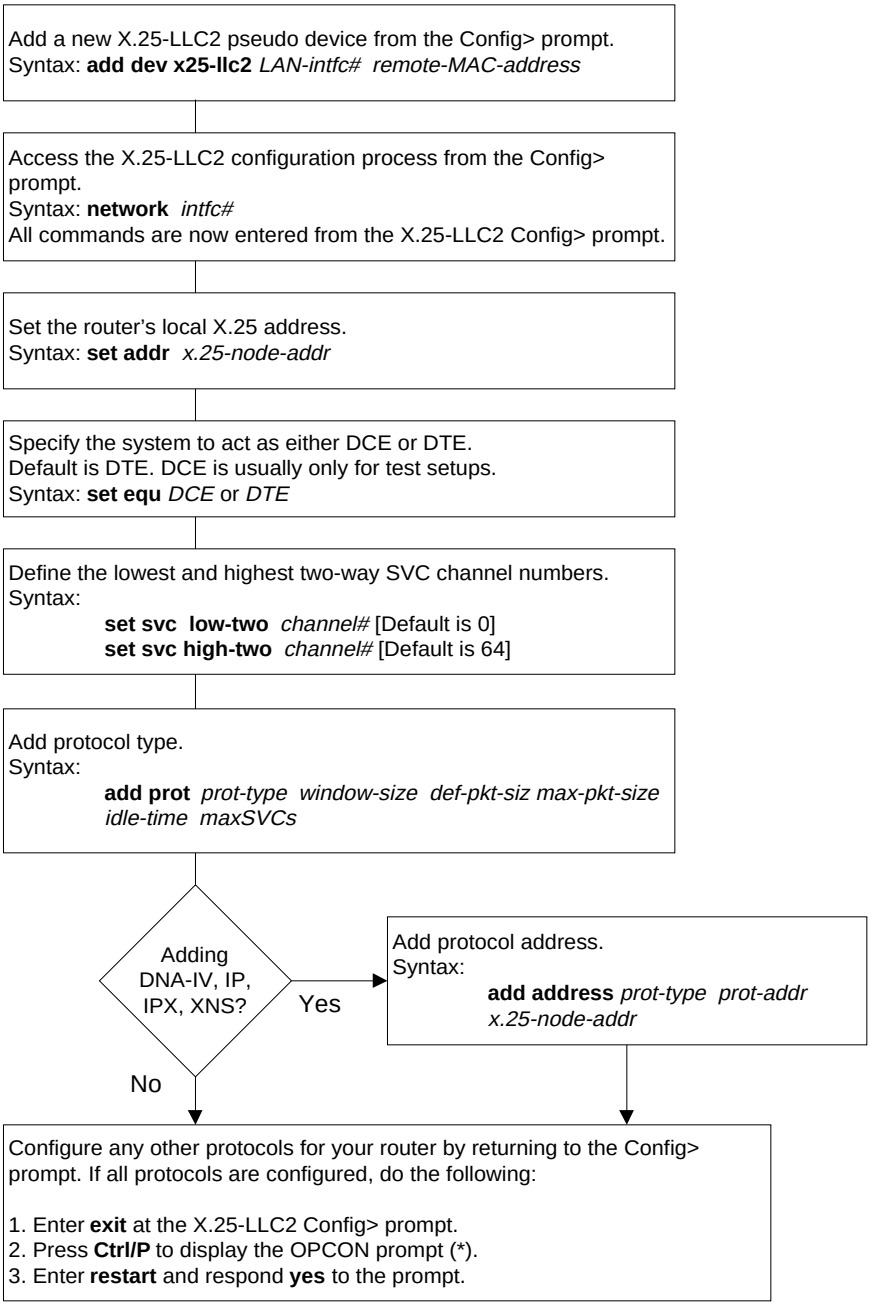
compression
Displays the statistics for data compression.

frame
Displays the statistics for the packet level.

packet
Displays the statistics for the packet level.

physical
Displays the statistics for the physical level.

exit
Returns to the previous prompt level.



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X.25-LLC2 Pseudo-Interface Configuration Commands

Enter the following configuration commands at the X.25-LLC2 config> prompt. To list the configuration commands and their options, enter a ?.

After you have configured all of the protocols, enter **restart** at the OPCON prompt (*), and respond **yes** to the prompt

Are you sure you want to restart the router?

add

address *prot-type prot-addr x.25-node-addr*
Adds a public data network (PDN) X.25 address translation for a protocol supported in the router's configuration.

protocol *prot-type window-size def-pkt-size max-pkt-size idle-time max-svcs*
Adds a supported protocol to the configuration.

change

address *prot-type prot-addr x.25-node-addr*
Modifies a PDN X.25 node address translation for a protocol supported in the router's configuration.

protocol *prot-type window-size def-pkt-size max-pkt-size idle-time max-svcs*
Modifies a supported protocol in the router's configuration.

delete

address *prot-type prot-addr*
Removes an X.25 address translation.

protocol *prot-type*
Removes a protocol configuration definition.

disable

interface-resets
Disables the router from initiating packet layer restarts (certification purposes).

incoming-calls-barred
Specifies that the router will accept incoming calls.

outgoing-calls-barred
Specifies that the router will allow outgoing calls.

enable

interface-resets
Allows the router to initiate packet layer restarts and frame link establishments.

incoming-calls-barred
Specifies that the router will not accept incoming calls.

outgoing-calls-barred
Specifies that the router will not allow outgoing calls.

list

addresses
Displays all X.25 address translations.

all
Displays all the X.25 addresses, National Personality parameters, and all defined protocols and their values.

detailed
Displays the value of all the default parameters that the **national set** command modifies.

protocols
Displays all the defined protocol configurations.

summary
Displays all the values established by the **set** and **enable** commands.

national disable

accept-reverse-charges
Does not allow accepting of reverse charges during call establishment.

ccitt
Disables the CCITT convention for timer retries.

clear-w/diag
Does not allow the clear request packets to include the diagnostic field.

flow-control-negotiation
Disables the negotiation of packet and window size during call setup of SVCs.

osi-84
Disables the CCITT OSI facilities defined by the 1984 standard.

osi-88
Disables the CCITT OSI facilities defined by the 1988 standard.

packet-ext-seq-mode
Disables the packet layer from using extended sequence numbers 0 to 127. The packet layer then uses 0 to 7.

packet-layer-restarts
Disables the packet layer from sending a restart packet when the router restarts.

request-reverse-charges
Disables requesting of reverse charges on all outgoing calls.

reset-w/diag
Disables the reset request packet from including the diagnostic field.

restart-w/diag
Disables the restart request packet from including the diagnostic field.

suppress-calling-addresses
Allows the router to insert the source address in call packets.

suppress-non-zero-cause
Enables the packets layer cause fields.

throughput-class-negotiation
Disables the negotiation of throughput class during call set up of SVCs.

national enable

accept-reverse-charges
Accepts reverse charges during call establishment.

ccitt
Specifies the use of the CCITT convention, rather than the ISO convention for timer retries.

clear-w/diag
Allows clear request packets to include the diagnostic field.

flow-control-negotiation
Enables the negotiation of packet and window size during call setup of SVCs.

osi-84
Enables the CCITT OSI facilities defined by the 1984 standard.

osi-88
Enables the CCITT OSI facilities defined by the 1988 standard.

packet-ext-seq-mode
Specifies the packet layer to use extended sequence numbers 0 to 127.

packet-layer-restarts
Allows the packet layer to send a restart packet when the router restarts.

request-reverse-charges
Allows the router to request reverse charges on all outgoing calls.

reset-w/diag
Allows the reset request packet to include the diagnostic field.

restart-w/diag
Allows the restart request packet to include the diagnostic field.

suppress-calling-addresses
Inhibits the inclusion of source addresses in call packets.

suppress-non-zero-cause
Suppresses the packet layer cause fields.

throughput-class-negotiation
Allows the negotiation of throughput class during call set up of SVCs.

national restore

all
Restores all the default values to the National Personality configuration.

accept-reverse-charges
Restores the accept-reverse-charges feature for calls during call establishment.

call-req
Restores the default value of 10 second intervals permitted before clearing an unaccepted call.

ccitt
Restores CCITT convention feature.

clear-req *retries timer*
Restores the default value for the number of clear requests transmissions (*retries*) and the number of 10 second intervals (*timer*) to wait before retransmission.

clear-w/diag
Restores the default feature that allows the inclusion of the diagnostic field in clear request packets.

flow-control-negotiation
Restores the router's capability to negotiate packet size and window size.

osi-84
Restores the default value for CCITT OSI facilities as defined by the 1984 standard.

osi-88
Restores the default value for CCITT OSI facilities as defined by the 1988 standard.

packet-size *default-size max-size window-size*
Restores the default value for the packet layer parameters mentioned above.

packet-ext-seq-mode
Restores the default value for the packet layer sequence numbering modulus.

packet-layer-restarts
Restores the default value for the packet layer transmission of a restart packet when the router restarts.

request-reverse-charges
Restores the default value for reverse charges requests for all outgoing calls.

reset *retries timer*
Restores the default value for the number of reset request transmissions, and the time between transmissions.

reset-w/diag
Restores the inclusion of diagnostic fields in reset request packet.

restart *retries timer*
Restores the default value for the number of restart request transmissions and the timeout value between each restart.

standard-version
Restores the default OSI facilities settings. Options are 1980, 1984, and 1988.

suppress-calling-address
Restores the inclusion of source addresses in call packets.

suppress-non-zero-cause
Restores the inclusion of the packet layer's cause fields.

throughput-class-negotiation
Restores the enabling of throughput negotiation.

national set

call-req
Specifies the number of 10 second intervals permitted before clearing an unaccepted call.

clear-req *retries timer*
Specifies the maximum number of clear request re-transmissions and the timeout interval between each of them.

packet-size *default-size max-size window-size*
Specifies the size of the packet and window used for negotiation.

reset *retries timer*
Specifies the number of reset request re-transmissions and the timeout value between each re-transmission.

restart *retries timer*
Specifies the number of restart request re-transmissions and the timeout value between each re-transmission.

standard-version
Determines some of the standard default settings. Options are 1980, 1984, and 1988.

set

address *x.25-node-addr*
Sets the local X.25 interface address.

calls-out
Specifies the maximum number of SVCs for this link.

default-window-size
Specifies the window size for the packet level. Note that the window is assumed if no window-size facility is present in the Call Setup Packet.

dsap *sap*
Sets the destination SAP for LLC2. The default value 7E (hexadecimal) is the ISO standard SAP for X.25.

equipment-type *DCE DTE*
Specifies whether the frame and packet levels act as DCE or DTE.

mtu *value*
Sets the maximum transmission unit (MTU) size in bytes.

speed *value*
Defines the line speed of this interface.

ssap *sap*
Sets the source SAP for LLC2. The default value 7E (hexadecimal) is the ISO standard SAP for X.25.

svc low-inbound
Defines the lowest inbound SVC channel number.

svc low-two-way
Defines the lowest two-way SVC channel number.

svc low-outbound
Defines the lowest outbound SVC channel number.

svc high-inbound
Defines the highest inbound SVC channel number.

svc high-two-way
Defines the highest two-way SVC channel number.

svc high-outbound
Defines the highest outbound SVC channel number.

throughput-class *inbound* or *outbound bit-rate*
Defines the default bit rate between 75 bps and 48,000 bps for an inbound or outbound logical channel.

vc-idle
Defines the number of seconds that an SVC can be idle before it is cleared.

exit

Returns to the previous prompt level.

X.25-LLC2 Pseudo-Interface Console Commands

Enter these commands from the X.25-LLC2> prompt. To list the X.25-LLC2 console commands and their options, enter a ? at the X.25-LLC2> prompt.

list

svcs
Displays the active SVCs.

parameters

all
Displays the parameters for packet, frame, and physical levels.

frame
Displays the associated LAN interface number and the local and remote MAC addresses.

packet
Displays the parameters for the packet level.

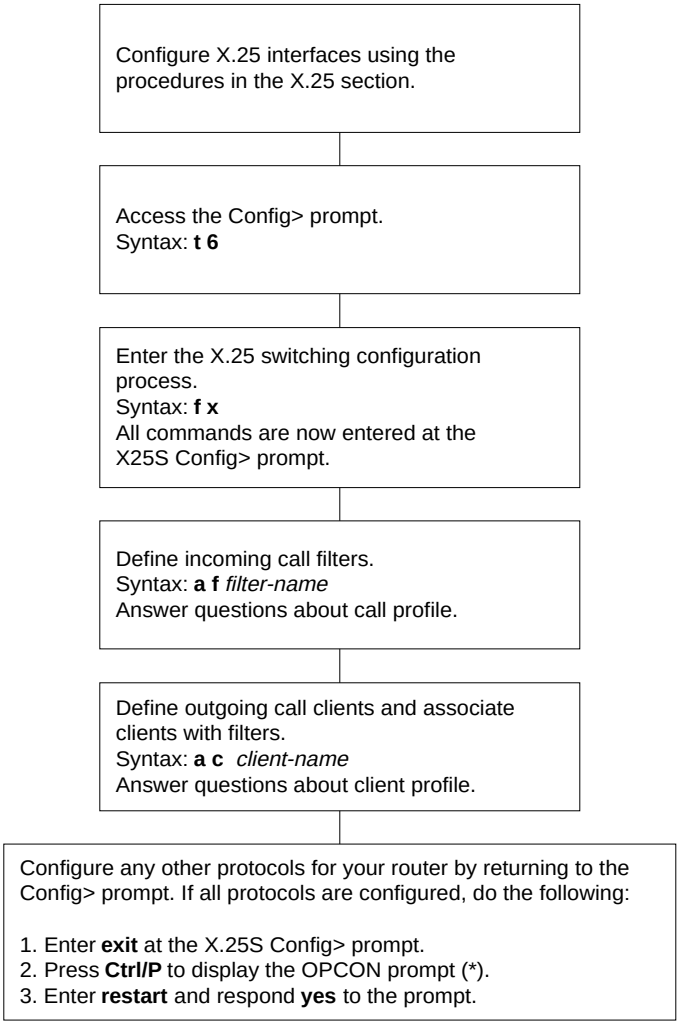
statistics

all
Displays the statistics for the packet, frame, and physical levels.

frame
Displays the statistics for the frame level. Only I-frames are counted.

packet
Displays the statistics for the packet level.

exit
Returns to the previous prompt level.



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X.25 Switching Feature Configuration Commands

Enter the following configuration commands at the X.25S Config> prompt. To list the configuration commands and their options, enter a ?.

After you have configured all of the protocols, enter **restart** at the OPCON prompt (*), and respond **yes** to the prompt

Are you sure you want to restart the router?

add

client
Defines new client profiles and associates incoming call filters. Incoming X.25 calls matching an associated filter are switched to the client's destination address.

filter
Defines new filter with a profile for incoming calls.

change

client
Modifies client profiles.

filter
Modifies incoming call filters.

delete

client
Removes client profiles.

filter
Removes incoming call filters.

disable

client
Disables client profiles. When a client is disabled, incoming calls matching an associated filter are blocked.

filter
Disables incoming call filters. Incoming calls are not matched against disabled filters.

x25-switching
Globally disables X.25 Switching on the router.

enable

client
Enables client profiles.

filter
Enables incoming call filters.

x25-switching
Globally enables X.25 Switching on the router.

list

client
Displays the current configuration options and status of all defined clients.

filter
Displays the current configuration options and status of all defined filters.

set

x25-switching
Sets routing priority of the implicit filters that are used to handle routing calls, and the maximum number of X.25 circuits that can be switched at any one time.

show

client
Displays the current configuration options and status of the named client.

filter
Displays the current configuration options and status of the named filter.

x25-switching
Displays the current configuration options and status of X.25 Switching.

exit

Returns to the Config> prompt.

X.25 Switching Feature Console Commands

Enter these commands from the X.25S> prompt. To list the X.25 Switching console commands and their options, enter a ? at the X.25S> prompt.

disable

client

Disables client profiles. When a client is disabled, incoming calls matching an associated filter are blocked.

filter

Disables incoming call filters. Incoming calls are not matched against disabled filters.

x25-switching

Globally disables X.25 Switching on the router.

enable

client

Enables client profiles.

filter

Enables incoming call filters.

x25-switching

Globally enables X.25 Switching on the router.

list

client

Displays the current configuration options and status of all defined clients.

filter

Displays the current configuration options and status of all filters that have been associated with clients.

set

x25-switching

Sets routing priority of the implicit filters that are used to handle routing calls, and the maximum number of X.25 circuits that can be switched at any one time.

show

client

Displays the current configuration options and status of the named client.

filter

Displays the current configuration options and status of the named filter.

x25-switching

Displays the current configuration options and status of X.25 Switching.

exit

Returns to the CGWCON prompt (+).