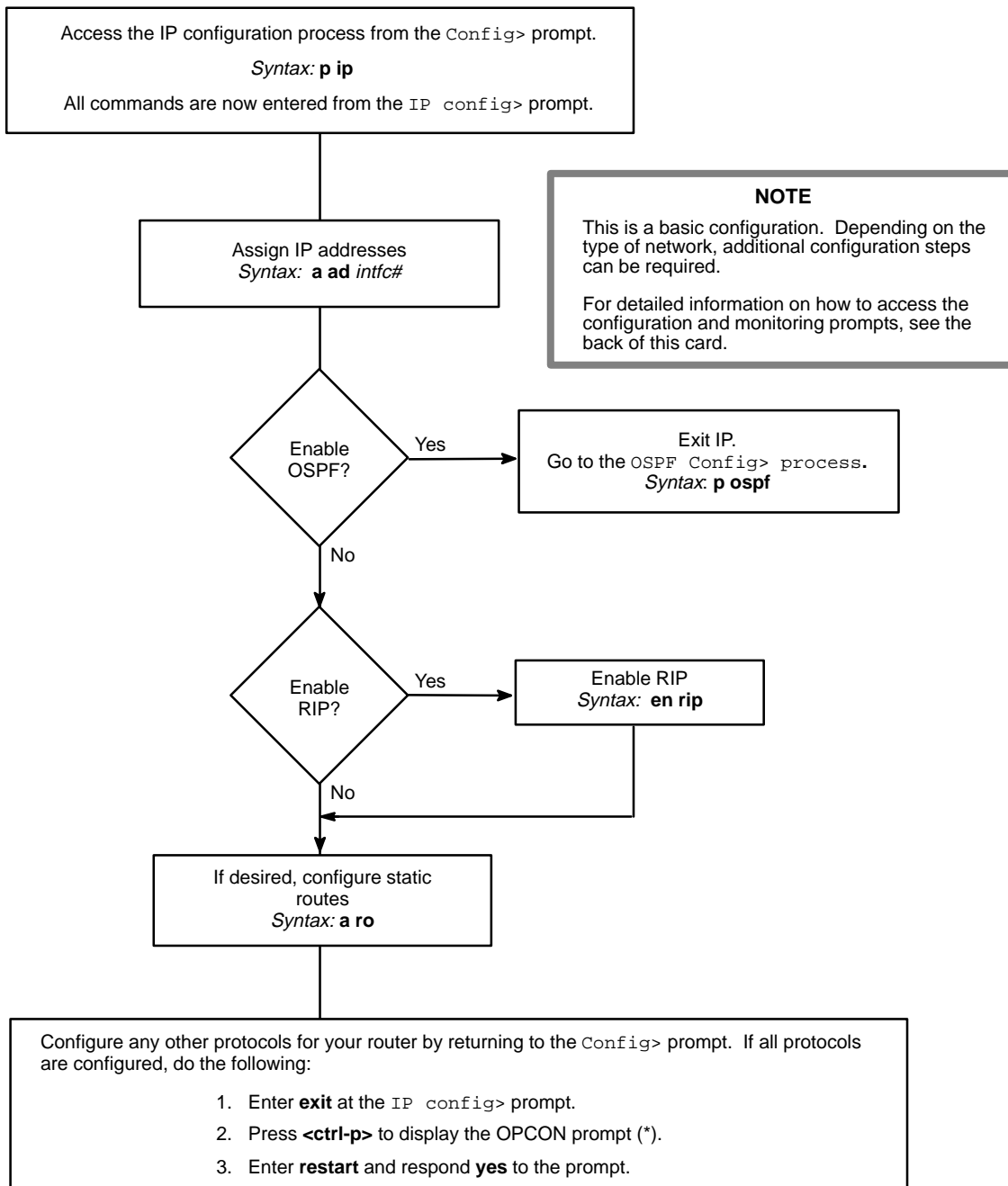


Internet Protocol (IP) Basic Configuration



IP Configuration Commands

This quick reference card summarizes the Internet Protocol (IP) configuration and console commands. The front panel of this card provides the initial configuration steps for this protocol. See "Accessing the CONFIG Process" for information on how to display the `Config>` prompt.

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? (Yes or No): yes
```

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.

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 re-advertised via OSPF and RIP.

output-interchange

Adds an IP network that will be advertised via EGP.

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.

IP Configuration Commands (*continued*)

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 IGP.

output-interchange

Stops advertising a network through EGP.

route

Removes a static route.

disable

arp-subnet-routing

Turns off proxy ARP.

bootp-forwarding

Turns off BootP packet forwarding.

directed-broadcast

Disables the forwarding of IP packets whose destination is a non-local broadcast address.

egp

Turns off EGP.

egp-readvertising

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

originate-default

Turns off the feature call originate default.

override default

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

override static

Prevents received RIP routes from overriding configured static routes.

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 subnets 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

Allows the router to send network-level 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.

directed-broadcast

Enables the forwarding of IP packets whose destination is a non-local broadcast address.

egp

Turns on EGP.

egp-readvertise

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

IP Configuration Commands (*continued*)

originate-default

Originates a default RIP route whenever the router has EGP-derived routes in its routing table.

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

Enable 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 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.

egp-as-info

Displays the routing interchange configured for each neighboring AS.

egp-neighbors

Displays the configured initial EGP neighbors.

input-interchange

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

output-interchange

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

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.

move

Changes the order of the access control records.

set

access-control

Turns access control on or off.

IP Configuration Commands (*continued*)

advertised default metric

Sets the cost that RIP advertises when originating a default route.

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.

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.

exit

Returns to the previous prompt level.

IP Console Commands

Enter these commands after the `IP>` prompt. See "Accessing the GWCON Process" for information on how to display the GWCON (+) 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.

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.

exit

Returns to the GWCON (+) prompt.

Accessing the CONFIG Process

Use the CONFIG process to display and change the current configuration in static RAM (SRAM). To display the CONFIG prompt (`Config>`):

1. After the router boots, the console displays the * prompt. Enter **status** to display the pid (process ID) of CONFIG.
2. Enter **talk** and the pid for CONFIG. This displays the following information:

```
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 load the new configuration:

- a. Press **CTRL-P** after the `Config>` prompt.

```
Config> ^p
*
```

- b. Enter **restart** after the * prompt.

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

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

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

```
Copyright Notices:
Copyright 1996 Digital Equipment Corp.
Copyright 1985-1994 Proteon, Inc.
Copyright 1984-1987, 1989 by J. Noel Chiappa
```

```
MOS Operator Control
*
```

Accessing the GWCON Process

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

1. After the router boots, the console displays the * prompt. Enter **status** to display the pid (process ID) of GWCON.
2. Enter **talk** and the pid for GWCON. This displays the GWCON prompt (+). You can now enter the monitoring commands.

To return to the * prompt, press **CTRL-P**.

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