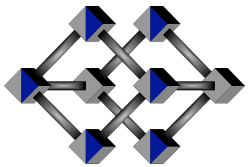
Cisco Command Reference

General Commands

? – Help
ctrl+a/+e – Move to beginning/end of line
ctrl+b/+f – Move backward/forward a character
ctrl+c – Abort from setup mode
ctrl+n/+p or ↓/↑ – Next/previous command
ctrl+shift+6 x – Suspend telnet session
ctrl+r – Redisplay line
ctrl+u/+w – Erase a line/word
ctrl+z – Exit config to privileged EXEC mode
esc+b/+f – Move backward/forward a word
<backspace> – Delete a character
<tab> – Complete the keyword
arp – Show or change the ARP cache
clear counters – Reset show int counters
clear line – Disconnect foreign telnet session
clear logging – Clear the logging buffer
clock set – Set router's clock
configure terminal – Enter configuration mode
connect – Log onto a host via telnet, rlogin, or LAT
copy flash tftp – Copy flash file to tftp server
copy runn start – Copy RAM to NVRAM
copy runn slot <#> – Copy RAM to NVRAM
copy start runn – Copy NVRAM to RAM
copy tftp start – Copy tftp server to NVRAM
debug – Starts console displaying router events
debug eigrp neighbors – Show eigrp neighb msgs
debug eigrp packets – Show eigrp packet summary
delete <device:><filename> – Delete file
disable – Exit privileged EXEC mode
disconnect – Disconnects a telnet session
erase slot <#> – Erase files
erase start – Erase NVRAM configuration
exit – Exit config mode, or close telnet session
logout – Close telnet session
nat – Network address translation
ping – Send an echo request and wait for a reply
reload – Reboot the IOS operating system
resume – Resume a suspended telnet session
rmon – Set up remote monitor function
setup – Enter prompted configuration mode
snmp-server – Configure SNMP server
show access-lists – Show access list contents



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General Commands (continued)

show cdp entry * – Show info on neighbors
show cdp neighbors detail – Show info on neighbors
show controller – Show layer 1 info, such as cabling
show flash – Show info on flash memory
show history – Show recently typed commands
show interfaces – Show info on interfaces
show logging – Display logging buffer
show runn – Show active (RAM) configuration
show slot <#> – Show PC card files
show start – Show startup (NVRAM) configuration
show user – Display list of active users on router
show version – Show IOS, hardware, and config reg
telnet – Connect to a host
terminal monitor – Forward console info to user
tftp-server – Start a TFTP server on the router
traceroute – Trace path of routers that packets take
undebug – Turn off debug output

General Configuration Commands

banner – Specifiy banner(s) for router
boot system – Specify source of IOS images
config-register – Set the 16-bit config register
enable password – Set enable password
enable secret – Set encrypted enable password
exec-timeout 0 0 – Prevent autologout
hostname – Specify name of router
interface – Enter interface config mode
line – Enter line (con, aux, vty) config mode
logging synch – Place console messages on new lines
login – Enable logins on a con, aux, or vty line
password – Specify password for a line
route-map – Define a route map

General Interface Config Commands

bandwidth – Set interface bandwidth for calculations
cdp enable – Enable CDP on interface (default)
clock rate – Set clock rate in bits per second
description – Add text description to interface
encapsulation isl – Define layer 2 encapsulation
interface – Enter interface config mode
int serial multipoint|point-to-point – Enter subinterface config mode for serial interface
media type – Select media for interface (e.g.10baseT)
shutdown – Administratively shut down interface

Recovering a Lost IOS

1) Reboot router, and hit ctrl+break on reboot
2) try one of:

```
rommon> boot slot0:<IOS filename>
rommon> boot <filename> <IP address>
rommon> boot tftp://<IP address>/<filename>
```


General IP Commands

clear ip bgp – Clear BGP routing table entries
clear ip bgp peer-group – Clear BGP connections for all members of BGP peer group
clear ip prefix-list – Reset hit count
debug ip bgp – Display BGP events on console
debug ip bgp updates – Display BGP updates
debug ip eigrp – Start console display of EIGRP
debug ip eigrp neighbors – EIGRP neighbor info
debug ip igrp – Start console display of IGRP
debug ip ospf – Start console display of OSPF
debug ip ospf packet – Show received packets
debug ip ospf spf – Show SPF calculation events
debug ip policy – Show IP policy routing events
debug ip rip – Start console display of RIP events
debug ip routing – Show IP routing events
show eigrp traffic – Show types of EIGRP packets
show ip access-list – Show IP access lists
show ip bgp – Display BGP routing table
show ip bgp neighbors – Show BGP neighbor info
show ip bgp summary – All BGP connection status
show ip eigrp topology – EIGRP topology table
show ip eigrp traffic – No. of packets sent or rec.
show ip interface – Show IP info for interface
show ip ospf – Show OSPF specific parameters
show ip ospf database – OSPF topological database
show ip ospf interface – Show OSPF interface info
show ip ospf neighbor – Show OSPF neighbor info
show ip policy – Show policy routing route maps
show ip prefix-list – Show all prefix list info
show ip protocols – Show running IP protocols
show ip route – Display IP routing table
show ip route eigrp – Show current EIGRP entries

IP Configuration Commands

access-class – Apply access list to con/aux/vty line
access-list – Define access list
aggregate-address – Make aggregate BGP entry
area default-cost – Define cost of default route sent into an OSPF stub area; default is 1
area nssa – Define OSPF area as not so stubby
area range – Define route summarization on ABR
area stub – Define OSPF area as a stub area
area virtual-link – Define vlink to OSPF router
bgp cluster-id – Configure the cluster ID
default-metric – Define seed metric
distance – Define rtg protocol admin distance
distribute-list – Activate rtg update access list
ip access-group – Apply access list to interface
ip access-list – Create named access list
ip address – Assign IP address/mask to interface
ip community-list – Create BGP community list

IP Configuration Commands (continued)

`ip default-gateway` – Used if IP routing is turned off
`ip default-network` – Define default route
`ip domain-lookup` – Turn on DNS lookups
`ip eigrp hello-interval` – Hello packet interval
`ip eigrp hold-time` – Uptime allowed w/o a hello
`ip forward-protocol` – Used for following command
`ip helper-address` – Address to which certain broadcasts are forwarded.
`ip ospf cost` – Define OSPF cost on an interface
`ip ospf network` – Define network node config
`ip ospf priority` – Define priority on interface
`ip name-server` – Define DNS server
`ip netmask-format` – Specify mask format
`ip prefix-list` – Define a prefix list
`ip route` – Create a static route
`ip router isis` – Enable IS-IS interfaces
`ip summary-address eigrp` – Route summarization
`isis priority` – Change IS-IS priority for DR election
`isis circuit-type` – Define 1/2 IS-IS level adjacency
`match` – Define condition to be checked in route map
`match community` – Match BGP community attribute
`match ip address` – Route map IP address to match
`maximum-paths` – Max # of parallel routes for protocol
`neighbor` – Identify peer router for this OSPF router
`neighbor remote-as` – Identify peer router for BGP
`neighbor route-map` – Apply route map to BGP routes
`neighbor shutdown` – Disable BGP neighb./peer group
`net` – Assign a NET to the router to identify it for IS-IS
`network` – Define networks the routing protocol will use
`no auto-summary` – Disable EIGRP autoroute summarz
`no synchronization` – Disable BGP synchronization
`redistribute` – Define protocol to be redistributed into this protocol.
`router bgp` – Define BGP as IP routing protocol
`router eigrp` – Define EIGRP as IP routing protocol
`router igrp` – Define IGRP as IP routing protocol
`router isis` – Define integrated IS-IS as IP protocol
`router ospf` – Start OSPF; enter OSPF configuration
`router rip` – Start RIP and enter RIP configuration
`set` – Define actions followed if match in route map
`set community` – Set BGP community attrib in rte map
`set interface` – Forward interface for rte map pckts
`set ip default next-hop` – For pckts w/o explicit rte
`set ip next-hop` – Define forwarding next-hop addr.
`set ip precedence` – Set IP precedence in IP pckts
`set metric` – Set BGP (MED) value from route map
`summary-address` – Route summarization on OSPF ASBR
`timers spf` – Wait before OSPF calculates route table
`traffic-share` – Share traffic over unequal routes
`variance` – Define unequal cost load balancing

General WAN Commands

`debug dialer` – Display dialer events on console
`debug isdn q921` – Show ISDN LAPD events
`debug isdn q931` – Show call setup/teardown
`debug ppp authentication` – Show ppp authentication
`show dialer` – Display status of dialer link
`show isdn active` – Show current call info
`show isdn status` – Show ISDN interface status

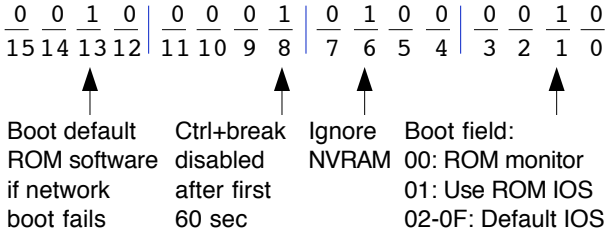
WAN Configuration Commands

`bandwidth` – Define interface bandwidth in bits/second
`dialer idle-timeout` – Disconnect when idle
`dialer load-threshold` – Place another call to same destination based on load
`dialer map` – Define how to reach destination
`dialer-group` – Apply dialer list to interface
`dialer-list list` – Define dialer list to trigger call
`dialer-list protocol` – Make protocol dialer list
`dialer string` – Telephone number to call
`encapsulation` – Define data link encapsulation
`isdn spid1` – Set first B-channel SPID
`isdn spid2` – Set second B-channel SPID
`isdn switch-type` – Connected ISDN switch type
`ppp authentication` – Set password authent type
`username` – Define hostname/password for ppp

Recovering a Lost Password

1) Reboot router, and hit ctrl+break on reboot
2) `confreg 0x2142` or `o/r 0x2142` (differs by router)
3) Reboot router with `i`, `reset`, or just power-cycle
4) `Router# copy start run`, then change password.
5) In config (privileged) mode, restore config register:
   `Router(config)# config-register 0x2102`
6) Save running config: `Router# copy runn start`
7) Reboot router with `reload` or power-cycle

0x2102 = Normal
0x2141 = Ignore start config, use ROM IOS
0x2142 = Ignore startup config (shown below)



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Example Router Setup

`Router> enable` – Enter privileged mode
`Router# erase start` – Clear previous configuration
`Router# config t` – Enter configuration mode
`Router(config)# enable password cisco`
`Router(config)# line con 0`
`Router(config-line)# password cisco`
`Router(config-line)# login` – Allow CON logins
`Router(config-line)# line vty 0 4`
`Router(config-line)# password cisco`
`Router(config-line)# login` – Allow vty logins
`Router(config-line)# hostname RouterA`
`RouterA(config)# banner motd #Put msg here#`
`RouterA(config)# int fa0/0` – (or `fa0, s0, e0/0`)
`RouterA(config-if)# ip address 192.168.1.1 255.255.255.0`
`RouterA(config-if)# no shutdown` – Enable interface
`RouterA(config)# exit` – or <ctrl+Z>
`RouterA(config)# ip routing` – IP routing should be on by default
`RouterA(config)# ip route 0.0.0.0 0.0.0.0 192.168.1.1` – Default gateway is 192.168.1.1
`RouterA(config)# router igrp 10`
`RouterA(config-router)# network 192.168.9.0`
`RouterA(config-router)# exit` – or <ctrl+Z>
`RouterA# ping 192.168.1.1` – Connect to a host
`RouterA# copy runn start` – Save configuration
`RouterA# exit` – Exit monitor

Access List Example

<1-99>: standard; <100-199>: extended
`Router(config)# access-list 25 deny 192.168.30.0`
`Router(config)# access-list 25 permit any`
`Router(config)# int e0`
`Router(config-if)# access-group 25 in`

Routing Protocol Commands

`router rip` – Enable RIP version 1 (no subnets)
`version 2` – Support subnets
`network 192.168.10.0` – Advertise network

`router ospf 10` – Enable ospf, with process ID=10, no subnets are supported in ospf
`network 192.168.0.0 0.0.255.255 area 0`

`router eigrp 10` – Enable eigrp, AS=10, supports subnets
`network 192.168.0.0 0.0.255.255 area 0`

`router bgp 10` – Enable bgp, AS=10
`neighbor 192.168.20.1 remote-as 30`

 Rev 1.20