

This list is not all encompassing for Cisco Commands. It is just a list of commands that I have personally seen and used. Some sections do not have much at all, some commands might seem like they could fit in multiple parts of this and you may have to research parts on your own, but hopefully this list will be a good starting point for you. Feel free to take this list and improve on it and if you want to help out, you can help update it.

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## 1. Navigating the Different Levels:

enable

en

(Get to privileged exec mode)

disable  
(get to starting mode)

configure terminal  
conf t  
(Get to global exec mode)

exit  
(Go down a level)

end  
(Go down to privileged exec)

interface [type]/[number]  
int  
(Get to configuring an interface)

interface range [type]/[number] - [number]  
(Get to configuring multiple interfaces)

interface [vlan-id]  
int  
(Get to configuring a vlan)

line console 0  
(Get to configuring the console)

line vty 0 15  
(Get to configuring the vty lines)

## 2. Short Cuts:

Ctrl keys - Press and hold Ctrl key and press the specified letter key

Escape sequences - press and release Esc key and then press the letter key

Line Editing:

Tab - completes abbreviated commands and parameters

Backspace - removes the character left of the cursor

Ctrl-D - erases the character at the cursor

Ctrl-K - erases all characters from the cursor to the command line

Esc D - erases all characters from the cursor to the end of the word

Ctrl-U or Ctrl-X - erases all characters from the cursor back to the beginning of the command line

Ctrl-W - erases the word to the left of the cursor

Ctrl-A - moves the cursor to the beginning of the line

Left Arrow or Ctrl-B - moves the cursor one character to the left

Esc B - moves the cursor back one word to the left

Esc F - moves the cursor forward one word to the right

Right Arrow or Ctrl-F - moves the cursor one character to the right

Ctrl-E - moves the cursor to the end of the command line

Up Arrow or Ctrl-P - shows recently used commands, starting with the last used

Down Arrow - goes through recent commands to the more recent commands

Ctrl-R or Ctrl-I or Ctrl-L - redisplay the system prompt and command line after a console message is received

At the "-----More-----" Prompt:

Enter Key - displays the next line

Space Bar - displays the next screen

Any Key - ends the display string, returning to privileged EXEC mode

Break Keys:

Ctrl-C - returns to privileged EXEC mode or if in setup mode to command prompt

Ctrl-Z - returns to privileged EXEC mode

Ctrl-Shift-6 - stop a ping or traceroute prematurely (all-purpose)

### 3. Switch Configuration:

hostname [hostname]

clock set [15:00:00 31 Jan 2935]

banner motd [your-message]

line console 0

password [password]

login

line vty 0 15 (for vty 0 through 15)

password [password]

login

boot system [storage-device file-location-path filename-of-ios]

Boot loader:

(Connect pc through console and unplug switch, when you plug it pack in hold the Mode button)

dir [directory-name] (list files in a directory)

Configuring Ports:

duplex [auto | full | half]

speed [number | auto] (number can be 10, 100, 1000)

(Duplex and speed go together, 10 and 100 can do either full or half duplex, while 1000 can only do full duplex) (This is for 10/100/1000 ports)

Configuring auto-MDIX:

(automatic medium-dependant interface crossover)

mdix auto (must set speed and duple to auto as well)

Switchport Commands:

switchport mode [access | trunk]

switchport access vlan [vlan-id]

switchport trunk allowed vlan [vlan-id]

switchport trunk encapsulation dot1q

Port Security:

switchport port-security

(Static secure mac addresses)

```
switchport port-security mac-address [mac-address]
(Dynamic secure mac addresses)
(Sticky secure mac addresses)
switchport port-security mac-address sticky {mac-address}
(Violation mode)
switchport port-security violation [protect | restrict | shutdown]
(Maximum addresses)
switchport port-security maximum [number]
```

#### 4. Router Configuration:

```
hostname [hostname]

clock set [15:00:00 31 Jan 2935]

banner motd [your-message]

line console 0
  password [password]
  login

line vty 0 15      (for vty 0 through 15)
  password [password]
  login
```

#### 5. Interface Commands:

```
no shutdown
no shut

shutdown
shut

interface [type] [number]
int
interface range [type]/[first number] - [last-number]

interface loopback [number]

description [description]
des
```

## 6. Routing Commands:

IPv4:

Static Route:

```
ip route [network-mask] [next-hop-ip | exit-interface]
```

Default Static Route

```
ip route 0.0.0.0 0.0.0.0 [exit-interface | next-hop-ip] | [administrative-distance]
```

IPv6:

Default Static ipv6 Route:

```
ipv6 route ::/0 [ipv6-addr | interface-id]
```

Static IPv6 Route:

```
ipv6 route [ipv6-network-addr/slash-notation] [ipv6 addr | interface-id]
```

OSPF Routing:

```
router ospf [number]
```

```
network [net-addr] [wildcard-mask] area 0
```

```
default-information originate (advertise a default route in ospf)
```

RIP Routing:

```
router rip (enables ripv1)
```

```
no router rip (disables rip)
```

```
network [network-address] (enables rip routing for a network) ( advertises the network)
```

```
version 2 (enables ripv2)
```

```
version 1 ( enables rip v1 only)
```

```
no version (returns to default sending v1 updates but listens to v2)
```

```
no auto-summary (ripv2)
```

```
passive-interface (stops transmission)
```

```
passive-interface default (all interfaces made passive)
```

```
no passive-interface (re-enable transmission)
```

```
default-information originate (advertise a default route over rip)
```

## 7. IPv4 and IPv6 Commands:

IPv4:

```
ip address [ip-address] [subnet-mask]
```

```
ip addr
```

```
ip default-gateway [router-address] (for switches)
```

no ip domain-lookup

ping [ip-address]

tracert [ip-address]

IPv6:

Enable ipv6:

ip unicast-routing

ipv6 address [ipv6-address]/[prefix-length] {link-local | eui-64}

ipv6 enable (generate a link local address without a global unicast)

ping ipv6 [ipv6 addr]

## 8. General Commands:

enable (get to privileged exec mode)

en

disable

configure terminal (get to global exec)

conf t

shutdown (turns off a port)

no shutdown (turns a port on)

no shut

exit

end

reload (gets rid of the running config and replaxes it with the startup config)

terminal length [number]

terminal history size [number]

interface [type] [number]

int

interface range [type]/[first number] - [last-number]

interface loopback [number]

description [description]

des

ping [ip-address]

ping ipv6 [ipv6-address]

traceroute [ip-address]

clock rate [number]

copy running-config startup-config

copy run start

erase startup-config

clock set [15:00:00 31 Jan 2935]

banner motd [your-message]

hostname [Switch1]

service password-encryption

enable secret [password]

line console 0

password [password]

login

line vty 0 15 (for vty 0 through 15)

password [password]

login

?

ping (extended (at privileged exec without a destination address))



ping ipv6 (extended (same as ping extended))

traceroute (extended (same as ping extended))

## 9. Security Commands:

autosecure (baseline command)

enable secret [password]

service password-encryption  
(Encrypts passwords)

security password min-length [number]  
(Sets minimum length for passwords)

login block-for [seconds] attempts [number of failed attempts] within [seconds]

Example: login block-for 120 attempts 3 within 60

(Blocks login for 120 seconds if there are 3 failed attempts in 60 seconds)

line console 0

password [password]

exec-timeout [minutes]

login

line vty 0 15

password [password]

exec-timeout [minutes]

login

(disconnect idle users in \_\_ minutes)

terminal monitor

terminal no monitor

## 10. Vlan Commands:

Configuring:

vlan [vlan-id]

name [vlan-name]

end

Assigning:

```
Interface [id]
  switchport mode access
  switchport access vlan [id]
end
```

Trunks:

```
switchport mode trunk
switchport trunk native vlan [id]
switchport trunk allowed vlan [id]
```

Inter Vlan routing:

```
switchport access vlan [vlan-id]
```

Adding an ip address to a vlan:

```
interface vlan [vlan-id]
  ip address [ip addr] [subnet mask]
```

Encapsulation:

(Used to separate an interface into multiple ones on different vlans)  
(Requires vlans)

```
interface g0/0.10
encapsulation dot1q [vlan-id]
ip address [ip-address] [subnet-mask]
```

## 11. DHCP Commands:

Turn on dhcp if turned off:

```
service dhcp
```

Exclude Addresses:

```
ip dhcp excluded-address [first-ip-address] [last-ip-address]
```

Configure basic DHCP server:

```
ip dhcp pool [pool-name]
  network [network-address] [subnet-mask]
  default-router [default-gateway]
  dns-server [dns-address]
  domain-name [example.com]
```

DHCP relay:

```
ip helper-address [dhcp-address]
```

Router as dhcp client:

```
ip address dhcp
```

DHCPv6:

(SLAAC) (default)

```
no ipv6 nd managed-config-flag
```

```
no ipv6 nd other-config-flag
```

(Stateless DHCPv6)

```
ipv6 nd other-config-flag
```

(Stateful DHCPv6)

```
ipv6 nd managed-config-flag
```

SLAAC:

(Obtain a global ipv6 unicast address without a server)

Config Stateless DHCPv6 on Router:

(Some info from the router, the rest from the server)

```
ipv6 unicast-routing
```

```
ipv6 dhcp pool [pool-name]
```

```
    dns-server [dns-address]
```

```
    domain-name [example.com]
```

```
interface [type] [number]
```

```
    ipv6 dhcp server [pool-name]
```

```
    ipv6 nd other-config-flag
```

Config Router as Stateless DHCPv6 client:

```
ipv6 enable
```

```
ipv6 address autoconfig
```

Configure Stateful DHCPv6 on Router:

(Use information from the server)

```
ipv6 unicast-routing
```

```
ipv6 dhcp pool [pool-name]
```

```
    address prefix [prefix/length] <lifetime [valid-lifetime preferred-lifetime | infinite]>
```

```
    dns-server [dns-address]
```

```
    domain-name [example.com]
```

```
interface [type] [number]
```

```
    ipv6 dhcp server [pool-name]
```

```
    ipv6nd managed-config-flag
```

Config Router as Stateful DHCPv6 Client:

ipv6 enable  
ipv6 address dhcp

DHCPv6 Relay Agent:  
ipv6 dhcp relay destination [dhcp-address]

## 12. Access Lists Commands:

Permit:  
access-list [access-list-number] permit [source] <source wildcard> <log>

Deny:  
access-list [access-list-number] deny [source] <source wildcard> <log>

Remark:  
access-list [access-list-number] remark [explanation]

For hosts:  
access-list [access-list-number] [permit | deny] host [host ip address]

Named ACLs:  
ip access-list standard [access-list-name]  
    [permit | deny | remark] [source] <source wildcard> <log>

Extended ACLs:  
ip access-list extended [name | number]  
    [permit | deny | remark] [protocol] [source<source wildcard | host | any>] [destination-ip  
<destination wildcard | host | any>] eq [port #]

Application of ACLs:  
interface [type] [number]  
    ip access-group [access-list-number | access-list-name] [in | out]

Modifying ACLs:  
show access-lists [name | number]  
access-lists standard [name | number]  
    no [sequence-number]  
    (Type replacement ACL)

VTY Access:  
line vty [number]  
    access-class [number | name] [in | out]

### 13. Network Access Translation (NAT) Commands:

#### Static NAT:

```
ip nat inside source static [local-ip-address] [global-ip-address]
interface [type] [number]
    ip nat [inside | outside]
```

#### Dynamic NAT:

```
ip nat pool [pool-name] [start-ip-address] [end-ip-address] <netmask [netmask] | prefix-length
[prefix-length]>
(Create ACL only permitting those addr)
ip nat inside source list [access-list-number] pool [pool-name]
interface [type] [number]
    ip nat [inside | outside]
```

#### PAT:

##### Config with Address Pool:

```
ip nat pool [pool-name] [start-ip-address] [end-ip-address] <netmask [netmask] | prefix-length
[prefix-length]>
(Create ACL for those addr)
ip nat inside source list [access-list-number] pool [pool-name] overload
interface [type] [number]
    ip nat [inside | outside]
```

##### Config for Single Address:

##### (Create ACL for addr)

```
ip nat inside source list [access-list-number] interface [type] [number] overload (interface is
outside interface)
interface [type] [number]
    ip nat [inside | outside]
```

#### Port Forwarding:

```
ip nat inside source [static [tcp | udp] [local-ip local-port global-ip global-port]] [extendable]
```

### 14. Telnet & SSH Commands:

#### Telnet:

(Set up line vty on the switch or router and give vlan 1 an ip address)

The go to the pc and type

```
telnet [ip-address]
```

SSH:

Configure IP domain:

```
ip domain-name [example.com]
```

Generate RSA key pairs:

```
ip ssh version 2
```

```
crypto key generate rsa general-keys modulus [360-2048]
```

(Modulus determines size of the key. Larger key means more secure, but takes longer to encrypt and decrypt. The minimum recommended modulus is 1024)

```
crypto key zeroize rsa (delete RSA key pair)
```

Configure user authentication:

```
username [username] secret [password]
```

Configure vty lines:

```
line vty [number] [number]
```

```
transport input ssh (prevents non-ssh)
```

```
login local (require local authentication)
```

Enable SSH Version 2

```
ip ssh version 2
```

## 15. VTY Commands:

```
line vty [number] [number]
```

```
transport input [protocol (ssh)] (Enable the protocol for vty lines)
```

```
login local (require local authentication)
```

```
password [password]
```

```
login
```

## 16. Cisco Discovery Protocol Commands:

```
no cdp run (disable globally)
```

```
cdp run (enable globally)
```

On an Interface:

```
no cdp enable
```

```
cdp enable
```

## 17. Network Time Protocol:

Sets clock synchronization

```
ntp server [ip-address]
```

## 18. Link Layer Discover Protocol (LLDP):

```
lldp run
```

```
no lldp run
```

```
show lldp
```

```
show lldp neighbors
```

```
show lldp neighbors detail
```

```
int ____
```

```
lldp transmit
```

```
lldp receive
```

## 19. Show Commands:

Filters: show | [section | include | exclude | begin] [filter words]

Configuration:

```
show run (shows running config)
```

```
show running-configuration | section []
```

```
show running-config
```

```
show running-config interface [interface-id]
```

```
show startup-configuration
```

```
show startup-config
```

Random:

```
show clock
```

```
show clock detail (also shows the time source )
```

```
show boot
```

```
show mac address-table {interface [interface]}
```

```
show mac-address-table
```

```
show flash
```

```
show version
```

show history  
show protocols

ARP:

show arp

Nat:

show ip nat translations (shows active nat translations)

verbose (add to end of command for more info)

ip nat translation timeout [timeout-seconds]

show ip nat statistics ( shows info about total number of active translations, nat config parameters, number of addresses in the pool, and number of addresses allocated)

IP:

show ip

show ip route

Show ip route static

show ip interface

show ip int

show ip interface brief

show ip int brief

show ip arp

show ip protocols

IPv6:

show ipv6

show ipv6 interface

show ipv6 interface brief

show ipv6 route

Interface:

show running-configuration interface [interface-id]

show [interfaces | interface] {interface-id} {switchport | trunk}

show ip interface {status}

show interfaces {interface-id} switchport

show interfaces

show interface [interface-id]

Vlan:

show vlan brief

show vlan

show interfaces vlan [id]

show vlan summary



show vlan name [name]  
show interfaces {id} trunk

Access Lists:

show access-lists

SSH:

show ip ssh (verify ssh support)  
show ssh

DHCPv4:

show ip dhcp binding  
show ip dhcp server statistics  
show ip dhcp conflict

DHCPv6:

show ipv6 dhcp conflict

Stateless DHCPv6:

show ipv6 dhcp pool

Stateful DHCPv6:

show ipv6 dhcp pool  
show ipv6 dhcp binding

DHCPv6 Relay agent:

show ipv6 dhcp interface

auto-MDIX:

show controllers ethernet-controller [interface] phy | include Auto-MDIX

Port Security:

show port-security interface [interface-id]  
show port-security address

Cisco Discovery Protocol (CDP):

show cdp neighbors  
show cdp neighbors detail  
show cdp interface  
show cdp entry [\* | WORD] (either show all entries [\*] or show a specific entry by naming it [WORD])

Network Time Protocol (NTP):

show ntp status  
show ntp associations

Logging:  
show logging

## 20. Debugging Commands:

debug [\_\_\_\_\_] (don't just put in debug, add in something to determine what you want to debug)  
debug ? (To see options)

To turn off a specific debugging feature:  
no debug [\_\_\_\_\_]   
undebug

DHCP:  
debug ip packet [access-list-number]  
drbug ip dhcp server events

DHCPv6:  
debug ipv6 dhcp detail

NAT:  
debug ip nat  
debug ip nat detailed

IP:  
debug ip [\_\_\_\_]

## 21. Logging/Syslog Commands:

Default format of a syslog message:  
seq no: timestamp: %facility-severity-MNEMONIC: description

service timestamps log datetime (force logged events to display the date and time)

service sequence-numbers (stamps log messages with a sequence number)

logging console

logging buffered

logging [ip-address]

logging trap [level] (from 0,7) (limits messages to levels [level] and lower)

logging source-interface [interface]

show logging

logging host (set syslog server ip address and parameters)

## 22. Clear Commands:

NAT:

clear ip nat statistics

clear ip nat translation

ACL:

clear access-list counters

## 23. File System Commands:

show file systems

dir [directory] (directory) (if you dont put one, it will do flash)

cd [directory] (change directory)

pwd (present working directory)

## 24. Backing Up and Restoring Configurations Commands:

TFTP Server:

To back up to a TFTP server:

Use:

copy running-config tftp

Or:

copy startup-config tftp

To restore from a TFTP server:

Use:

copy tftp running-config

Or:

copy tftp startup-config

USB Flash Drive:

show file systems (verify that the usb is there and its name)

copy run usbflash0:/ (usbflash0: is the name of the usb)

dir [name]/ (find the file)

Restore Config:

copy usbflash0:/(file name) running-config

## 25. Password Recovery:

Step 1: Enter the ROMMON mode (use a break sequence during the boot up process)

Step 2: change the configuration register to 0x2142 to ignore the startup config file

## 26 ASA Devices:

\*They have different commands than normal switches and routers, but the help command is still "?" So use that to help you figure them out while I update this.

## 27. Subnet Mask Cheat Sheet:

Class A is 255.0.0.0

Class B is 255.255.0.0

Class C is 255.255.255.0

Ipv4 Address Ranges:

1-126 class a

10-10.31 class a private

127 loopback

128-191 class b

172.16 class b private

192-223 class c

192.168 class c private

Class A:

/8 = 255.0.0.0

Class B:

/16 = 255.255.0.0

/17 = 255.255.128.0

/18 = 255.255.192.0

/19 = 255.255.224.0

/20 = 255.255.240.0

/21 = 255.255.248.0

/22 = 255.255.252.0

/23 = 255.255.254.0

Class C:

/24 = 255.255.255.0

/25 = 255.255.255.128

/26 = 255.255.255.192

/27 = 255.255.255.224

/28 = 255.255.255.240

/29 = 255.255.255.248

/30 = 255.255.255.252

Number of Hosts:

/16 - 65534

/17 - 32766

/18 - 16382

/19 - 8190

/20 - 4094

/21 - 2046

/22 - 1022

/23 - 510

/24 - 254

/25 - 126

/26 - 62

/27 - 30

/28 - 14

/29 - 6

/30 - 2