

# Cisco Systems Commands

## Comprehensive Guide To Cisco Systems!

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### Sources

- All of lecture slides
  - [TLDR: How port security works](#)
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## Basic Configurations Commands

### Common configuration based stuff

Commands	Explanation
en	Enters global configuration mode
config t	Enters configuration mode
hostname	Change the name of the device you're editing
no ip domain-lookup	Prevents networks devices to continually search for a command even though its incorrect
banner motd #"str"#	Description banner that is used to provide message when accessing a level of configuration
ip default-gateway (default gateway ip)	sets the default gateway for a switch, allows access from a remote network.
clock set (24-hr-time) (Month) (Day) (year)	Sets the clock for the inter device.

### Configuration files / Shows

Commands	Explanation
show running-config OR show run	shows configurations you're currently running on the device

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Commands	Explanation
show startup-config	shows configurations that are automatically executed when starting up the device
erase startup-config	reverts all changes to default for the startup configuration
reload	Mostly likely removes all current configurations and reverts to startup configurations
copy running-config startup-config	Replaces start up configurations with currently running configurations
show version	Displays information about the particular device. Such as version, physical specs & more.
show mac address-table (static/dynamic/default)	Displays information on what machines are connected to the switch device

## Password configurations

Commands	Explanation
line console 0 → password (password)	Require a password to access the console
enable secret (password)	Requires a password to access global configuration mode
line vty 0 4 → password (password)	Requires a password for telnet & ssh protocols (Also establishes them apparently)
login	Activates the need for a password
logging synchronous	<i>literally no idea</i>
service password-encryption	When accessing configurations, passwords are encrypted using random string of numbers & letters
security password min-length (No*)	Requires password to reach minimum number specified
login block-for (seconds) attempts (tries) within (seconds)	Block logging in for (A set peroid of time) when the user inputs the wrong answer (this many times) within (this timeframe.)

## Interface/Port/Vlan/Protocol Commands

## Interface Commands

Commands	Explanation
interface (port/vlan)	Access interface
ip address (ip address) (subnet/defaultgateway)	Assign interface with a ip address and subnet OR default gateway
show interfaces	Show detailed information with each interface (also known as port)
show ip interface brief	Shows summarised information regarding status and ip address
show interface (port/vlan)	Show detailed information about a specified port/vlan
interface range (port/vlan - number)	Access multiple interfaces / port
switchport (access/trunk/port-security)	Enable changes on interface/ports in regards to their behaviour.
show port-security interface (port)	Shows security information about a specific interface port.
show port-security	Shows all security information about all ports
show port-security address	Shows mac address information about all secured ports.
mac address-table static (mac-address) (vlanID) (interfaceID)	Adds a hard-coded static mac address to the switches mac-address interfaces/tables

## Telnet & SSH Commands

Commands	Explanation
line vty 0 4	Opens 5 virtual teletype ports which acts as connection for remote networks or other devices on the network, 0-4 demonstrates how many simultaneous connections, however, requires a telnet password to establish a telnet connection
exec-timeout (mins seconds)	When accessing telnet/ssh services a set time is permitted on the line until you're effectively timed out.

Commands	Explanation
ip domain-name CCNA-lab.com	Just a requirement for establishing a SSH connection (BenC - "Fake setup for a DNS to receive and send requests")
username (username) privilege 15 secret (password)	Establishes a username and password and admin privileges for that set account
transport input ssh	Establishes a SSH protocol and encrypts all data that is sent from terminal to device.
login local	Makes username & passwords to be required when accessing SSH terminals.
crypto key generate rsa (modulus 1024 or generate-keys)	... some public key private key bullshit.

## Some random commands?

Commands	Explanation
telnet (ip address)	establishes a telnet connection through CMD, is used to verify connection to device

## Vlan Commands

Commands	Explanation
vlan (vlan-id) → name (vlan-name)	Creates a virtual networks
switchport mode access → switch access vlan (vlan-id)	assigns said interfaces/port for a specified vlan, additionally the port is open for data transfer
switchport access vlan (vlan-id) OR no switchport access vlan	Essentially doubles as assigning the interface back into default
no vlan (vlan-id)	removes a specified vlan

Commands	Explanation
show vlan	displays what vlans are available and what interfaces are assigned to what vlan
sh int (interface) switchport	Shows trunking values a interface has and other information
switch trunk allowed vlan remove (vlan-id)	Remove a vlan from a trunked port, used when on a interface that is a trunk.
show interface trunk	Reveals trunking information
switchport trunk native vlan (vlan-id)	set the vlan native trunk to vlan id

## Ethernet Commands

Commands	Explanation
interface range f0/1-2 (anyname)	enable editing interface ports 1 to 2.
channel-group (name) mode active	makes an etherchannel group given a name, mode active indicates a LACP operations
interface port-channel (name)	enable editing for etherchannel group
show interfaces etherchannel	
show etherchannel summary	

## DHCPv4 Commands

### DHCPv4 Setting up Basics

Commands	Explanation
ip dhcp exclude-address (ip address(s))	specifies what IP addresses should be excluded when the DHCPv4 server leases ip addresses
ip dhcp pool (pool-name)	specifies the name of the pool of ip addresses
network (ip address) (subnet/default)	specifies the address and subnet of the pool

Commands	Explanation
default-router (ip address)	specifies the default router or default gateway
dns-server (address)	defines a DNS server within the topology
domain-name (name)	defines the domain name
lease	{days} {hours} {minutes} {infinite}
netbios-name-server	I doubt this will be used.. This is a place holder text

## DHCPv6 Verification

Commands	Explanation
show running-config (pipe) dhcp section	display the DHCPv4 commands configured to the router
show ip dhcp binding	display a list of all IPv4 address to mac address bindings provided by the DHCPv4 service
show ip dhcp server statistics	Displays count information regarding the number of DHCPv4 messages that have been sent and received.

## SLAAC and DHCPv6 and all that shit

### UNKNOWN CLASS

Commands	Explanation
ipv6 dhcp relay destination (ipv6-address) (interface-type)	A router relay DHCPv6 request information to a DHCPv6 server
show ipv6 dhcp pool	(DHCPV6 Server) verifies the name of the DHCPv6 pool and its parameters
show ipv6 dhcp binding	(DHCPV6 Server) display the IPv6 link-local address of the client and the global unicast address assigned by the server.
show ipv6 dhcp interface	verify interface in relay mode and other stuff
show ipv6 dhcp binding	erify if any hosts have been assigned an IPv6 configuration

## Configure Stateless DHCPv6 Server

Commands	Explained
ipv6 unicast-routing	
ipv6 dhcp pool (pool-name)	
dns-server (dns-server-address)	
domain-name (name of name)	
ipv6 nd other-config-flag	O flag set to 0 to 1
ipv6 dhcp server (pool-name)	binds interface with specified pool.

## Configure Stateless DHCPv6 Client

Commands	Explained
address prefix (address)	
dns-server (dns-address)	
domain-name (domain-name)	
ipv6 nd managed-config-flag	M flag to 0 - 1
ipv6 nd prefix default no-autoconfig	A flag to 0 - 1
ipv6 dhcp server (pool-name)	binds interface with specified pool

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## Switch Security and Mitigating Attacks

### Mitigation of attacks

#### VLAN Attacks

Commands	Description