



# CCNA Command Cheat Sheet

Essential Cisco IOS commands for the 200-301

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Cisco IOS 15.x

## BASIC DEVICE SETUP

<code>enable</code>	Enter privileged EXEC mode
<code>configure terminal</code>	Enter global configuration mode
<code>hostname R1</code>	Set the device name
<code>enable secret cisco123</code>	Set an encrypted privileged-mode password
<code>service password-encryption</code>	Encrypt plaintext passwords in the config
<code>banner motd # text #</code>	Set a login banner
<code>line console 0</code>	Enter console line config (then login, password)
<code>line vty 0 4</code>	Enter the virtual terminal lines for remote access
<code>no ip domain-lookup</code>	Stop the device treating typos as DNS lookups

## INTERFACES AND IP ADDRESSING

<code>interface GigabitEthernet0/0</code>	Enter interface configuration mode
<code>ip address 10.0.0.1 255.255.255.0</code>	Assign an IPv4 address and mask
<code>no shutdown</code>	Enable the interface (up the line protocol)
<code>description LINK TO SW1</code>	Label the interface
<code>interface range Gi0/1 - 2</code>	Configure several interfaces at once
<code>ipv6 address 2001:db8::1/64</code>	Assign an IPv6 address
<code>ipv6 unicast-routing</code>	Enable IPv6 routing (global, off by default)
<code>show ip interface brief</code>	One-line status and IP of every interface

## VLANS AND TRUNKING

<code>vlan 10</code>	Create VLAN 10 and enter VLAN config
<code>name SALES</code>	Name the VLAN
<code>switchport mode access</code>	Set the port as an access port
<code>switchport access vlan 10</code>	Assign the access port to VLAN 10
<code>switchport mode trunk</code>	Set the port as an 802.1Q trunk
<code>switchport trunk allowed vlan 10,20</code>	Limit which VLANs the trunk carries
<code>show vlan brief</code>	List VLANs and their assigned ports
<code>show interfaces trunk</code>	Show trunk ports, native VLAN, allowed VLANs

## SWITCHING: MAC TABLE AND SPANNING TREE

<code>show mac address-table</code>	Show learned MAC-to-port mappings
<code>show mac address-table dynamic</code>	Show only dynamically learned entries
<code>show spanning-tree</code>	Show STP state, root bridge, and port roles
<code>show spanning-tree vlan 10</code>	STP details for one VLAN
<code>spanning-tree portfast</code>	Skip STP listening/learning on an access port

## IP ROUTING AND STATIC ROUTES

<code>ip routing</code>	Enable IPv4 routing on a Layer 3 switch
<code>ip route 192.168.2.0 255.255.255.0 10.0.0.2</code>	Add a static route via a next hop
<code>ip route 0.0.0.0 0.0.0.0 10.0.0.2</code>	Add a default route
<code>show ip route</code>	Show the full routing table
<code>show ip route static</code>	Show only static routes

## OSPF

<code>router ospf 1</code>	Start OSPF process 1 and enter router config
<code>network 10.0.0.0 0.0.0.255 area 0</code>	Advertise a network into OSPF area 0
<code>router-id 1.1.1.1</code>	Set a stable OSPF router ID
<code>passive-interface Gi0/1</code>	Stop OSPF hellos on an interface (no neighbors there)
<code>show ip ospf neighbor</code>	Show OSPF adjacencies and their state
<code>show ip protocols</code>	Show running routing protocols and networks

## VERIFICATION AND SHOW COMMANDS

<code>show running-config</code>	Show the active configuration in memory
<code>show startup-config</code>	Show the saved configuration in NVRAM
<code>show version</code>	IOS version, uptime, model, and registers
<code>show interfaces</code>	Full interface stats including error counters
<code>show interfaces status</code>	Per-port link, duplex, speed, and VLAN
<code>show cdp neighbors</code>	Discover directly connected Cisco devices
<code>show cdp neighbors detail</code>	Add neighbor IP and IOS version

## TROUBLESHOOTING

<code>ping 10.0.0.2</code>	Test reachability to a host
<code>traceroute 10.0.0.2</code>	Show the hop-by-hop path to a host
<code>show ip interface brief</code>	Spot down or unaddressed interfaces fast
<code>terminal monitor</code>	See log and debug output over an SSH session
<code>debug ip ospf events</code>	Watch OSPF activity live (turn off with no debug all)
<code>no debug all</code>	Stop all debugging

## SECURITY: SSH, ACLS, AND PORT SECURITY

<code>ip domain-name example.com</code>	Set the domain (required before key generation)
<code>crypto key generate rsa</code>	Generate the RSA key pair for SSH
<code>ip ssh version 2</code>	Force SSH version 2
<code>transport input ssh</code>	Allow only SSH on the VTY lines
<code>access-list 10 permit 10.0.0.0 0.0.0.255</code>	Standard numbered ACL entry
<code>ip access-list extended WEB</code>	Create a named extended ACL
<code>switchport port-security</code>	Enable port security on an access port
<code>switchport port-security maximum 2</code>	Limit the port to two learned MACs

## SAVE AND MANAGE THE CONFIGURATION

<code>copy running-config startup-config</code>	Save the active config to NVRAM
<code>write memory</code>	Older shorthand for the same save
<code>reload</code>	Restart the device
<code>show flash</code>	List files (including the IOS image) in flash
<code>erase startup-config</code>	Wipe the saved config (factory reset on reload)