IOS CONFIGURATION CHEAT-SHEET

OFFICIAL CHEAT-SHEET FOR PRACTICAL CONFIGURATION

Purpose of the document

This document serves as a quick reference guide for the basic configuration of Cisco IOS network devices. It contains the most commonly used commands and procedures required for practical device configuration in a laboratory environment.

This cheat-sheet is intended exclusively to support work during the configuration final and practical exercises.

Permitted use during the assessment (configuration).

During the assessment, only this printed cheat-sheet may be used.

The following is not permitted:

- using mobile phones or other electronic devices,
- using personal notes or digital materials,
- communicating with other students,
- copying or sharing solutions in any form.

Prohibition of photographing and copying the assignment

During the assessment it is strictly prohibited to:

• copy the assignment,

• photograph the assignment,

• record or transmit the assignment content in any way.

Any violation of this rule will result in automatic course failure.

Academic integrity and course rules

Cheating during the assessment and the final exam is strictly prohibited.

If students are caught cheating:

- they will be immediately removed from the exercise,
- they will receive a grade of 0 points for the exam.

Repeated cheating during a retake will result in automatic course failure. Cheating is a deliberate decision for which the student bears full responsibility.

The cheat-sheet will be provided during the assessment. Printing it is not necessary.

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Official Cheat-Sheet 2026 · Version 1.4

COMPUTER NETWORKS
SECURITY OF COMPUTER NETWORKS

BASIC CONFIG

IOS MODES & NAVIGATION

```
> enable
# configure terminal
(config)# exit
```

CONSOLE & LOCAL ACCESS

```
(config)# line console 0
(config-line)# password <password>
(config-line)# login
(config-line)# logging synchronous
(config-line)# exec-timeout <minutes> <seconds>
```

BANNER & SECURITY POLICIES

```
(config)# banner motd *<text>*
(config)# security password min-length <length>
(config)# login block-for <seconds> attempts <count> within <seconds>
```

BASIC DEVICE CONFIGURATION

```
(config)# hostname <hostname>
(config)# enable secret <password>
(config)# enable password <password>
(config)# service password-encryption
(config)# no ip domain-lookup
```

SAVING & ERASING CONFIGURATION

```
# copy running-config startup-config
# copy running-config tftp
# erase startup-config
```

REMOTE ACCESS

REMOTE ACCESS (SSH)

Example: Secure remote administrative access

```
(config)# username <username> password <password>
(config)# ip domain-name <domain>
(config)# crypto key generate rsa
(config)# line vty <start> <end>
(config-line)# login local
(config-line)# transport input ssh
```

REMOTE ACCESS (TELNET)

Example: Remote access to the device
(note: unencrypted, **do not use**)

```
(config)# line vty <start> <end>
(config-line)# password <password>
(config-line)# login
```

INTERFACE CONFIGURATION

INTERFACE CONFIGURATION (IPv4)

Example: FastEthernet0/1 connected to LAN

```
(config)# interface <interface-type> <number>
(config-if)# description <description>
(config-if)# ip address <ipv4-address> <subnet-mask>
(config-if)# no shutdown
```

INTERFACE CONFIGURATION (IPv6)

Example: FastEthernet0/1 connected to LAN

```
(config)# interface <interface-type> <number>
(config-if)# ipv6 address <ipv6-address>/<prefix-length>
(config-if)# ipv6 address <link-local-address> link-local
```

VERIFICATION (SHOW) COMMANDS

Note: From a higher mode, use the **do** command

```
# show running-config
# show ip interface brief
# show ipv6 interface brief
# show ip route
# show ipv6 route
# show vlan brief
# show interfaces trunk
# show port-security
# show standby brief
```

MANAG. VLAN

VLAN MANAGEMENT (MANAGEMENT IP)

Example: Switch management via VLAN 1

```
(config)# interface vlan <vlan-id>
(config-vlan)# ip address <ipv4-address> <subnet-mask>
(config-vlan)# no shutdown
(config)# ip default-gateway <default-gateway-ip>
```

SWITCH SECURITY

PORT SECURITY

Example: Securing port Fa0/10 for one PC

```
(config)# interface <port>
(config-if)# switchport port-security maximum <count>
(config-if)# switchport port-security mac-address sticky
(config-if)# switchport port-security violation <protect | restrict | shutdown>
(config-if)# switchport port-security
```

VLAN & INTER-VLAN ROUTING

VLAN CONFIGURATION (ACCESS PORT)

Example: Port Fa0/10 for the SALES department (VLAN 10)

```
(config)# vlan <vlan-id>
(config-vlan)# name <vlan-name>
(config)# interface <port>
(config-if)# switchport mode access
(config-if)# switchport access vlan <vlan-id>
```

TRUNK CONFIGURATION

Example: Trunk between switches on Gi0/1

```
(config)# interface <port>
(config-if)# switchport mode trunk
(config-if)# switchport trunk native vlan <vlan-id>
```

ROUTER-ON-A-STICK (INTER-VLAN ROUTING)

Example: Routing VLAN 10 via Gi0/0.10

```
(config)# interface <interface>
(config)# no shutdown
(config)# interface <interface>.<vlan-id>
(config-subif)#  encapsulation dot1Q <vlan-id> [native]
(config-subif)#  ip address <ipv4-address> <subnet-mask>
(config-subif)#  no shutdown
```

DHCP

DHCPv4 SERVER

Example: DHCP for network 192.168.10.0/24

```
(config)# ip dhcp excluded-address <start-ip> <end-ip>
(config)# ip dhcp pool <pool-name>
(dhcp-config)# default-router <default-gateway-ip>
(dhcp-config)# dns-server <dns-server-ip>
(dhcp-config)# network <network-address> <subnet-mask>
```

DHCP RELAY

Example: Relay on interface Gi0/0

```
(config)# interface <port>
(config-if)# ip helper-address <dhcp-server-ip>
```

SLAAC / STATELESS & STATEFUL DHCPv6

Example: IPv6 addressing for the network 2001:db8:0:1::/64

```
(config)# ipv6 unicast-routing                □◧■
(config)# ipv6 dhcp pool <pool-name>           ◧■
(config-dhcpv6)# dns-server <ipv6-address>     ◧■
(config-dhcpv6)# domain-name <domain>          ◧■
(config-dhcpv6)# address prefix <prefix>/<len> ■
(config)# interface <interface>                □◧■
(config-if)# ipv6 address <prefix>/<len>       □◧■
(config-if)# ipv6 dhcp server <pool-name>      ◧■
(config-if)# ipv6 nd other-config-flag         ◧
(config-if)# ipv6 nd managed-config-flag       ■
```

□SLAAC ◧Stateless DHCPv6 ■Stateful DHCPv6

HSRP

HSRP – REDUNDANT GATEWAY

Example: Virtual gateway for LAN

```
(config)# interface <port>
(config-if)# standby <group-number> ip <virtual-ip>
(config-if)# standby <group-number> priority <priority>
(config-if)# standby <group-number> preempt
```

STATIC ROUTING

STATIC ROUTING (IPv4 & IPv6)

Example: Routing to a remote network

```
(config)# ip route <network> <subnet-mask> <next-hop-ip | exit-interface>
(config)# ipv6 route <prefix> <next-hop-ip | exit-interface>
```

DEFAULT ROUTE (IPv4 & IPv6)

Example: Routing to the Internet

```
(config)# ip route 0.0.0.0 0.0.0.0 <next-hop-ip | exit-interface>
(config)# ipv6 route ::/0 <next-hop-ip | exit-interface>
```

LOOPBACK & CDP

LOOPBACK INTERFACE

Example: Logical interface used for routing or device identification

```
(config)# interface loopback <number>
(config-if)# ip address <ipv4-address> <subnet-mask>
```

CDP – NEIGHBOR DISCOVERY

```
# show cdp neighbors
# show cdp neighbors detail
(config)# cdp run
(config)# no cdp run
(config-if)# cdp enable
(config-if)# no cdp enable
```