Achievable

CCNA DUMP SHEET

Cisco IOS CLI and device setup

Modes and prompts

Mode	Prompt	Get there
User EXEC	`SW1>`	Log in
Privileged EXEC	`SW1#`	`enable`
Global config	`SW1(config)#`	`configure terminal`
Interface	`SW1(config-if)#`	`interface g0/1`
VLAN	`SW1(config-vlan)#`	`vlan 2`
Line	`SW1(config-line)#`	`line vty 0 15`

- **Configs:** user EXEC can't view, privileged EXEC can't change
- **Up one level:** `exit`. **To privileged EXEC:** `end` or Ctrl+Z

Help and shortcuts

Type	You get
`show ?`	With a space: what can come next
`sh?`	No space: commands starting with `sh`
`conf t`	Abbreviation: enough letters to be unique
Tab, Up arrow	Completes a command; recalls earlier ones
`no vlan 2`	`no` undoes most config commands
`do show vlan`	Runs an EXEC command from a config mode

Initial device setup

```
Router# configure terminal
Router(config)# hostname R1
R1(config)# interface g0/0
R1(config-if)# ip address 192.168.1.1 255.255.255.0
R1(config-if)# no shutdown
R1(config-if)# end
R1# copy running-config startup-config
```

- **First boot:** cancel the setup dialog with Ctrl+C or `no`
- **Shut down by default:** router interfaces, SVIs; not switchports
- **Layer 2 switch:** SVI IP, plus `ip default-gateway 10.0.0.1`

Core show commands

Command	Answers
`show running-config`	What is configured now?
`show startup-config`	What is saved in NVRAM?
`show ip interface brief`	IP and status of each interface
`show interfaces g0/1`	Speed, duplex, error counters
`show interfaces status`	Which ports are connected?
`show vlan brief`	Which access ports in each VLAN?
`show mac address-table`	Where is each MAC?
`show interfaces trunk`	Which ports trunk?
`show ip route`	Which routes exist?
`show spanning-tree`	Who is root, per VLAN?

Status / Protocol	Means
`up` / `down`	Layer 2: no keepalives received
`down` / `down`	No physical link, such as no cable
`administratively down`	`shutdown` is set, protocol `down`

Running vs startup config

- **Active:** `running-config`, in RAM, lost on reboot or power loss
- **Saved:** `startup-config`, in NVRAM, loaded at boot
- **Save:** `copy running-config startup-config`, Enter twice

Management access

Method	Via	Traffic
Console	Rollover cable	Local, no IP needed
Telnet	TCP 23, VTY lines	Clear text. Avoid
SSH	TCP 22, VTY lines	Encrypted. Preferred
HTTP, HTTPS	TCP 80, 443, browser	Clear; encrypted
Cloud	Meraki Dashboard	Over the Internet

- **Console:** 9600 bps, 8 data, no parity, 1 stop, no flow control
- **TACACS+ and RADIUS:** on the device security sheet

SSH setup, hostname first

`R1(config)# ip domain-name example.com`	Names the RSA key, with the hostname. Newer IOS: `ip domain name`
`R1(config)# username admin privilege 15 secret cisco`	Local account. `privilege 15` lands in privileged EXEC at login
`R1(config)# crypto key generate rsa modulus 2048`	Turns SSH on. 2048 recommended; SSH version 2 needs at least 768
`R1(config)# ip ssh version 2`	Without it: compatibility mode, shown as SSH 1.99. Check with `show ip ssh`
`R1(config)# line vty 0 15`	16 lines, so 16 remote sessions. `show ssh` lists them
`R1(config-line)# transport input ssh`	SSH only, so Telnet is refused
`R1(config-line)# login local`	Check the local user database