

Cisco IOS Command Reference

Field-useful IOS and IOS XE commands with safety notes for modern operations.

Configure with intent, verify before and after, and treat dangerous commands like production-impacting tools.

Safe Baseline

```
hostname SW1
no ip domain-lookup
ip domain-name example.local
username admin privilege 15 secret <secret>
crypto key generate rsa modulus 2048
ip ssh version 2
line vty 0 4
  login local
  transport input ssh
```

Password Reality

`service password-encryption` only obscures old plaintext passwords. It is not strong protection. Use `secret` forms, AAA where appropriate, and protect config files.

```
enable secret <secret>
username admin secret <secret>
```

VERIFY FIRST

NEED	COMMANDS
Inventory	show version, show inventory, show license summary
Interfaces	show interfaces status, show interfaces counters errors, show cdp neighbors detail
Layer 2	show vlan brief, show interfaces trunk, show spanning-tree root
Layer 3	show ip interface brief, show ip route, show arp, show ip cef

COMMON CONFIG PATTERNS

```
interface gi1/0/10
  description user-port
  switchport mode access
  switchport access vlan 10
  spanning-tree portfast
  spanning-tree bpduguard enable

interface gi1/0/48
  description trunk-to-core
  switchport mode trunk
  switchport trunk allowed vlan 10,20,30

interface vlan10
  description users-gateway
  ip address 10.10.10.1 255.255.255.0
```

Time, Logs, Files

```
ntp server 10.10.10.10
logging host 10.10.20.50
logging buffered 64000 warnings
archive
  path flash:archive
  write-memory
```

Use the local timezone required by the site. Do not blindly paste `EST -5` everywhere.

Routing Checks

```
show ip route
show ip ospf neighbor
show ip ospf interface brief
show standby brief
show vrrp brief
```

Danger Zone

`debug ip packet` can spike CPU and make an outage worse. Use it only in a lab or with a tight ACL, a clear stop condition, and someone watching device health.

```
access-list 199 permit ip host 10.1.1.10 host 10.2.2.20
debug ip packet 199 detail
undebug all
```

Change Discipline

1. Capture current state.
2. Make the smallest change.
3. Verify the expected result.
4. Verify the adjacent services.
5. Save only after the change is proven.
6. Document rollback.

USEFUL SHOW COMMANDS

PROBLEM	START HERE
Port down	show interfaces status, show interfaces gi1/0/10, logs, cable and peer check.
Wrong VLAN	show vlan brief, show mac address-table interface gi1/0/10.
Trunk issue	show interfaces trunk, native VLAN, allowed VLANs, CDP/LLDP neighbor.
Route missing	show ip route <prefix>, protocol neighbor, redistribution, filter, next-hop reachability.