
Basic CISCO IOS
Commands

DEFINITION

Cisco IOS (Internetwork Operating System) is a family of software used on most Cisco Systems routers and current Cisco network switches.

IOS is a package of routing, switching, internetworking and telecommunications functions integrated into a multitasking operating system.

OSI Layer

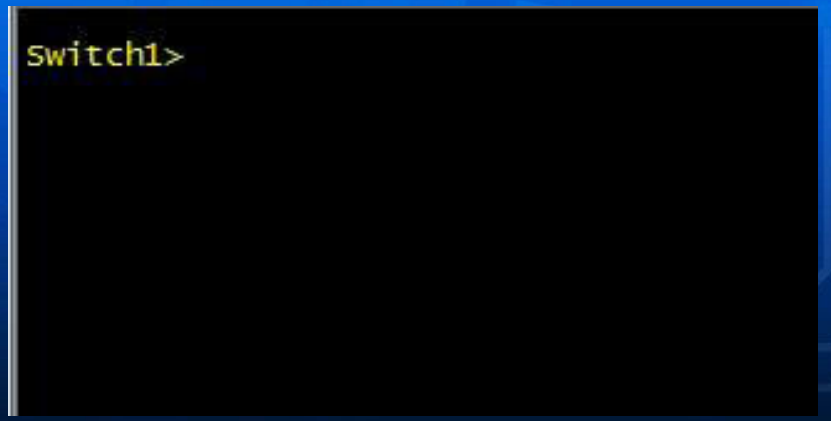
- LAYER 3 - Responsible for logical addressing and routing
- LAYER 2 - Responsible for physical addressing, error correction, and preparing the information for the media

Configuration modes

- User EXEC mode
- Privileged EXEC mode
- Global Configuration mode
- Sub Prompts

USER EXEC MODE

- Default configuration mode.
- You can view the settings on the device but not make any changes.
- You know you are in User EXEC mode because the IOS prompt displays a “>”.



Privileged EXEC mode

- You can make changes.
- May be required to input password.
- Privileged EXEC mode displays with a “#” in the prompt.

Global Configuration mode

- Make global changes to the router/switches.

```
Switch1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch1(config)#
```

Sub Prompts

- Access within Global Configuration mode.

```
Switch1(config)#int gigabitEthernet 1/0/1
Switch1(config-if)#
```

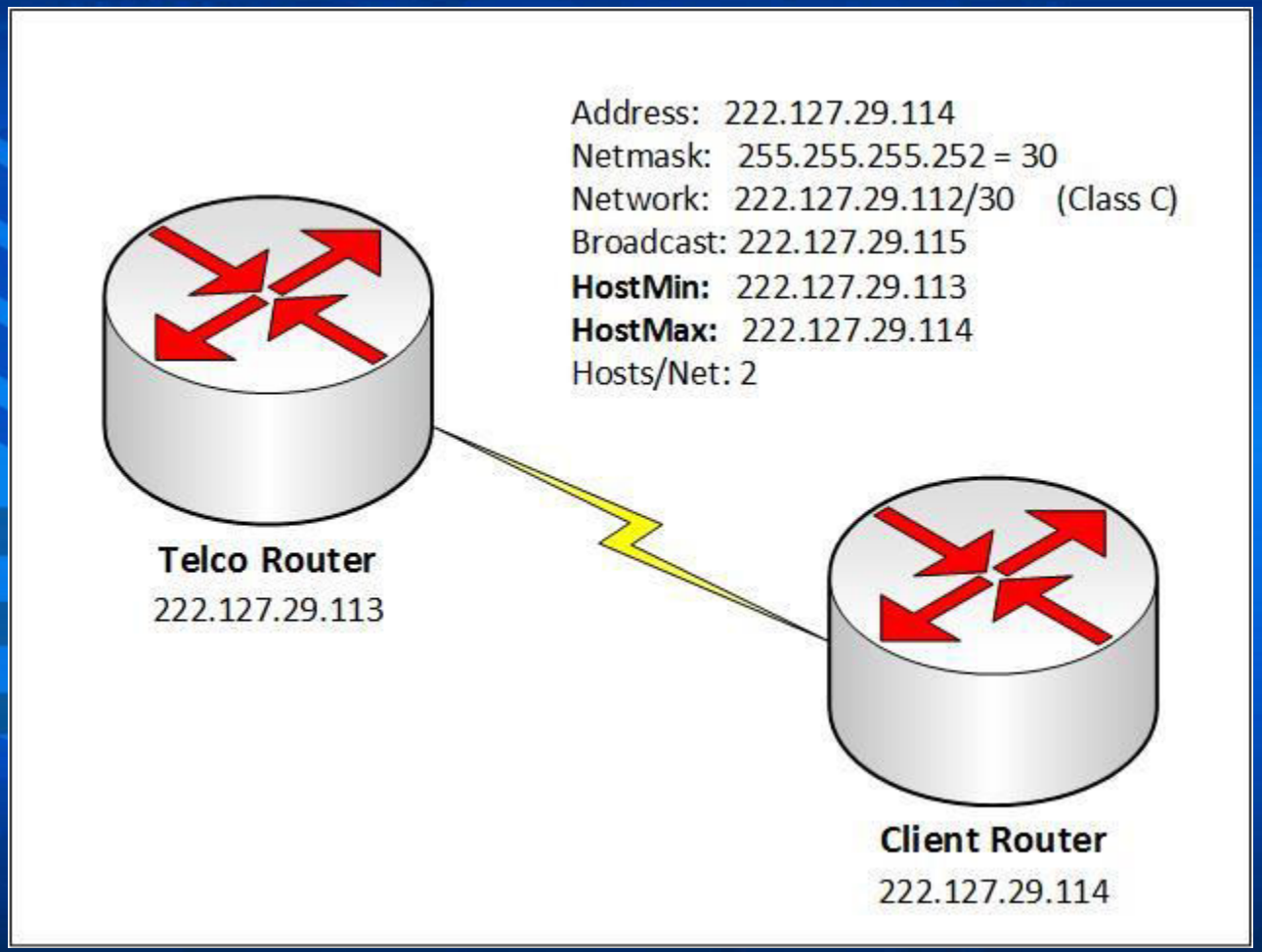
10 Cisco IOS commands you should master

1.) The “?”
2.) show running-configuration
3.) copy running-configuration startup-configuration
4.) show interface
5.) show ip interface
6.) config terminal
7.) no shutdown
8.) show ip route
9.) show ver
10.) show inventory

CONFIGURE AN INTERFACE FOR CISCO NETWORKING

```
Router1>enable
Router1#configure terminal
Router1(config)#interface FastEthernet0/0
Router1(config-if)#description Private LAN
Router1(config-if)#speed 100
Router1(config-if)#duplex full
Router1(config-if)#ip address 192.168.1.1 255.255.255.0
Router1(config-if)#no shutdown
```

CONFIGURE IP ROUTE (Next Hop)



CONFIGURE IP ROUTE

```
Router1#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
C        172.16.20.0/24 is directly connected, GigabitEthernet0/1
L        172.16.20.1/32 is directly connected, GigabitEthernet0/1
Router1#
```

CONFIGURE IP ROUTE

```
Router1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router1(config)#ip route 0.0.0.0 0.0.0.0 222.127.29.113
Router1(config)#end
Router1#sh ip route
*Jul  5 07:52:12.654: %SYS-5-CONFIG_I: Configured from console by console
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is not set

      172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
C        172.16.20.0/24 is directly connected, GigabitEthernet0/1
L        172.16.20.1/32 is directly connected, GigabitEthernet0/1
Router1#
```

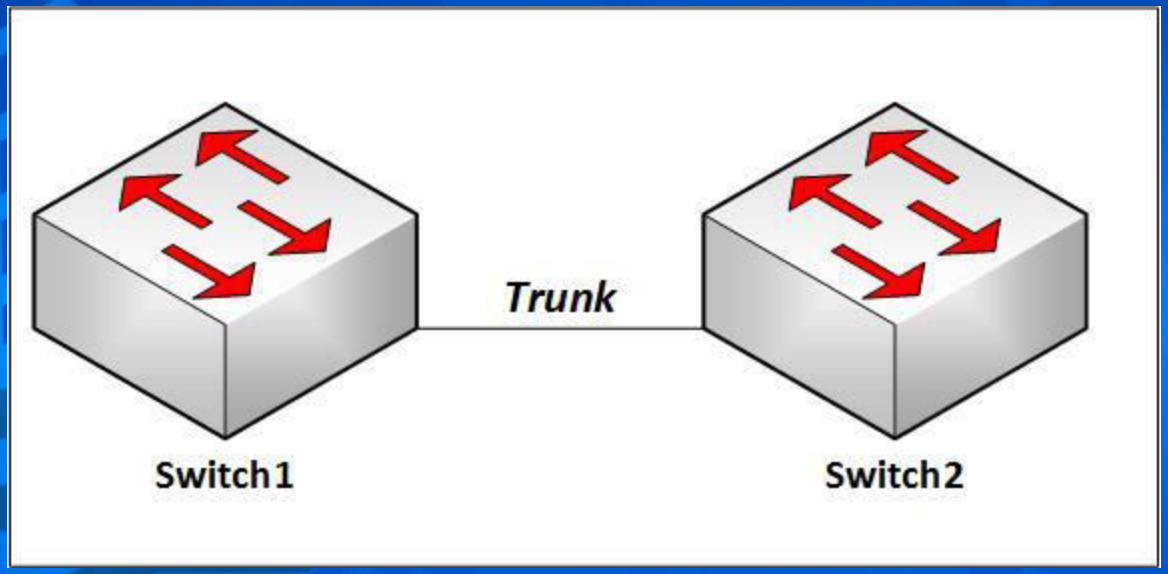
CONFIGURE A SWITCH MANAGEMENT INTERFACE FOR CISCO NETWORKING

```
Switch1>enable
Switch1#configure terminal
Switch1#interface VLAN 1
Switch1(config-if)#ip address 192.168.1.241 255.255.255.0
```

CREATING A VLAN FOR CISCO NETWORKING

```
Switch1>enable
Switch1#configure terminal
Switch1(config)#interface vlan 2
Switch1(config-if)#description Finance VLAN
Switch1(config-if)#exit
Switch1(config)#interface range FastEthernet 0/1 , FastEthernet 0/12
Switch1(config-if-range)#switchport mode access
Switch1(config-if-range)#switchport access vlan 2
```

TRUNKING TWO SWITCHES



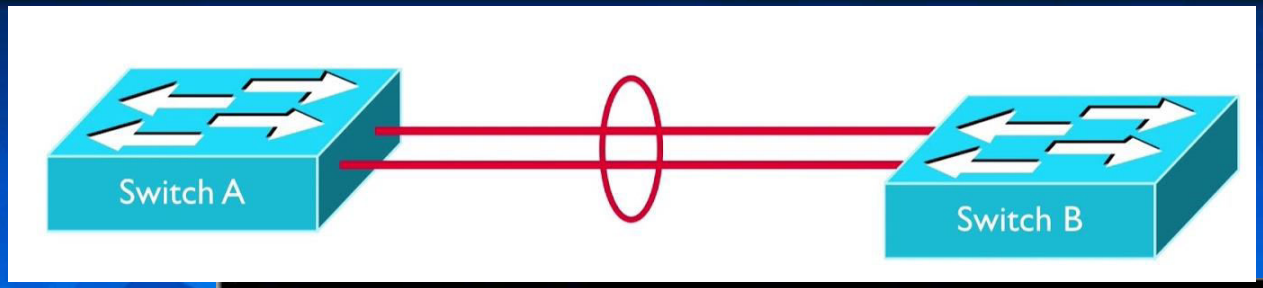
TRUNKING TWO SWITCHES

```
Switch1#
Switch1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch1(config)#int gig1/0/3
Switch1(config-if)#description "to SW2"
Switch1(config-if)#switchport trunk encapsulation dot1q
Switch1(config-if)#switchport trunk native vlan 999
Switch1(config-if)#switchport mode trunk
Switch1(config-if)#end
Switch1#
Switch1#sh run int gig1/0/3
Building configuration...

Current configuration : 155 bytes
!
interface GigabitEthernet1/0/3
 description "to SW2"
 switchport trunk encapsulation dot1q
 switchport trunk native vlan 999
 switchport mode trunk
end

Switch1#
```

USING ETHERCHANNEL FOR CISCO NETWORKING




```
Switch1(config)#int Port-channel 2
Switch1(config-if)#switchport trunk encapsulation dot1q
Switch1(config-if)#switchport trunk native vlan 999
Switch1(config-if)#switchport mode trunk
Switch1(config-if)#no shutdown
Switch1(config-if)#exit
Switch1(config)#int range gig1/0/16-17
Switch1(config-if-range)#switchport trunk encapsulation dot1q
Switch1(config-if-range)#switchport trunk native vlan 999
Switch1(config-if-range)#switchport mode trunk
Switch1(config-if-range)#channel-group 2 mode on
Switch1(config-if-range)#end
Switch1#sh etherchannel summary
Flags:   D - down        P - bundled in port-channel
         I - stand-alone s - suspended
         H - Hot-standby (LACP only)
         R - Layer3      S - Layer2
         U - in use      f - failed to allocate aggregator

         M - not in use, minimum links not met
         u - unsuitable for bundling
         w - waiting to be aggregated
         d - default port


Number of channel-groups in use: 2
Number of aggregators:           2

Group  Port-channel  Protocol    Ports
------+-------------+-----------+-----------------------------------
1      Po1(SU)           -      Gi1/0/23(D) Gi1/0/24(P)
2      Po2(SD)           -      Gi1/0/16(D) Gi1/0/17(D)

Switch1#
```

END OF SLIDES
THANK YOU VERY MUCH.