

1. What type of cable is used to connect the Ethernet interface on a host PC to the Ethernet interface on a switch?

**Copper Straight Through**

2. What type of cable is used to connect the Ethernet interface on a switch to the Ethernet interface on a router?

**Copper Straight Through**

3. What type of cable is used to connect the Ethernet interface on a router to the Ethernet interface on a host PC?

**Copper Cross-over**

4. When the prompt returns, issue the reload command. Answer no if asked to save changes. What would happen if you answered yes to the question, “System configuration has been modified. Save?”

**The current running configuration would be saved to NVRAM, meaning the router would not reset to default after reload, it would reload with the old configuration still present.**

5. Why would you want to disable DNS lookup in a lab environment?

**Disabling DNS lookup avoids delays when commands are mistyped, routers won't try to resolve them as hostnames.**

6. What would happen if you disabled DNS lookup in a production environment?

**The router couldn't find domain names to IP addresses and won't load.**

7. Why is it not necessary to use the enable password command?

**Using “enable password” will show in all running configurations if anyone can go to privilege mode, it can know the password so encryption is necessary. For this, “enable secret password” is used which can provide an encrypted result.**

8. When does the MOTD banner display?

**Before logging in to get connected to the router.**

9. Why should every router have a message-of-the-day banner?

**To show a warning that unauthorized access is not allowed.**

10. What is a shorter version of the command copy running-config startup-config?

**copy run start**

11. From the host attached to R1, is it possible to ping the default gateway?

**Yes.**

12. From the host attached to R2, is it possible to ping the default gateway?

**Yes.**

13. From the router R1, is it possible to ping R2 using the command ping 192.168.2.2?

**Yes.**

```
R1#ping 192.168.2.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.2.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 18/26/30 ms
```

14. From the router R2, is it possible to ping R1 using the command ping 192.168.2.1?

**Yes.**

```
R2#ping 192.168.2.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.2.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 12/28/37 ms

R2#
```

15. What is missing from the network that is preventing communication between these devices?

**Since the network is missing static routes or dynamic routing information to tell R1 and R2 how to reach each other's LANs.**

## PC1

```
C:\>ping 192.168.3.10

Pinging 192.168.3.10 with 32 bytes of data:

Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.

Ping statistics for 192.168.3.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.3.1

Pinging 192.168.3.1 with 32 bytes of data:

Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.

Ping statistics for 192.168.3.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

## PC2

```
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.3.1: Destination host unreachable.
Reply from 192.168.3.1: Destination host unreachable.
Reply from 192.168.3.1: Destination host unreachable.
Reply from 192.168.3.1: Destination host unreachable.

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

## R1#show running-config

```
R1#show running-config
Building configuration...

Current configuration : 933 bytes
!
version 12.3
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname R1
!
!
!
enable secret 5 $l$mERr$9cTjUIEqNGurQiFU.ZeCil
!
!
!
!
!
no ip cef
no ipv6 cef
--More--
```

## R2#show running-config

```

R2#show running-config
Building configuration...

Current configuration : 912 bytes
!
version 12.3
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname R2
!
!
!
enable secret 5 $1$mERr$9cTjUIEqNGurQiFU.ZeCil
!
!
!
!
!
ip cef
no ipv6 cef
--More--

```

---

## R1#show ip route

```

R1#show ip route
Codes: C - connected, S - static, I - IGRP, 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, E - EGP
       i - IS-IS, 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

Gateway of last resort is not set

C    192.168.1.0/24 is directly connected, FastEthernet0/0
C    192.168.2.0/24 is directly connected, Serial0/0/0

R1#

```

---

## R2#show ip route

```

R2#show ip route
Codes: C - connected, S - static, I - IGRP, 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, E - EGP
       i - IS-IS, 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

```

Gateway of last resort is not set

```

C    192.168.2.0/24 is directly connected, Serial0/0/0
C    192.168.3.0/24 is directly connected, FastEthernet0/0

```

R2#

### R1#show ip interface brief

```

R1#show ip interface brief
Interface      IP-Address      OK? Method Status              Protocol
FastEthernet0/0 192.168.1.1     YES manual up                  up
FastEthernet0/1 unassigned      YES NVRAM  administratively down down
Serial0/0/0     192.168.2.1     YES manual up                  up
Serial0/0/1     unassigned      YES NVRAM  administratively down down
Vlan1           unassigned      YES NVRAM  administratively down down
R1#

```

### R2#show ip interface brief

```

R2#show ip interface brief
Interface      IP-Address      OK? Method Status              Protocol
FastEthernet0/0 192.168.3.1     YES manual up                  up
FastEthernet0/1 unassigned      YES unset  administratively down down
Serial0/0/0     192.168.2.2     YES manual up                  up
Serial0/0/1     unassigned      YES unset  administratively down down
Vlan1           unassigned      YES unset  administratively down down
R2#

```

**Test connectivity**

P1

```
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

```
C:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

P2

```
C:\>ping 192.168.3.1

Pinging 192.168.3.1 with 32 bytes of data:

Reply from 192.168.3.1: bytes=32 time<1ms TTL=255
Reply from 192.168.3.1: bytes=32 time<1ms TTL=255
Reply from 192.168.3.1: bytes=32 time<1ms TTL=255
Reply from 192.168.3.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.3.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Reply from 192.168.2.2: bytes=32 time<1ms TTL=255
Reply from 192.168.2.2: bytes=32 time<1ms TTL=255
Reply from 192.168.2.2: bytes=32 time<1ms TTL=255
Reply from 192.168.2.2: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```