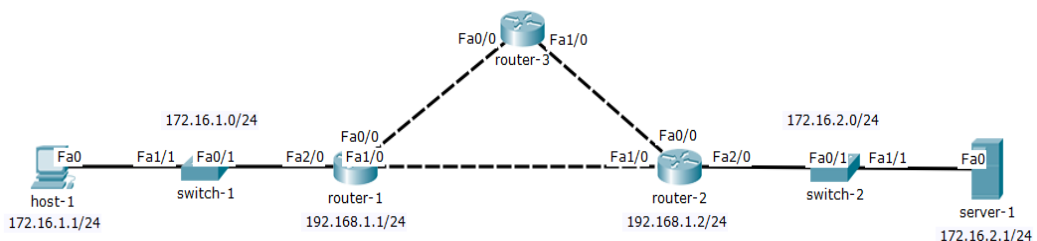


IPv4 Static Route

Lab Summary

Configure static routing to provide Layer 3 reachability between host and server subnets.

Figure 1 Lab Topology



Lab Configuration

Start Packet Tracer File: **IPv4 Static Route**

Router-1

Click on the *router-1* icon and select the *CLI* folder. Hit the <enter> key for user mode prompt (>).

Step 1: Enter global configuration mode

```
router-1> enable
Password: cisco
router-1# configure terminal
```

Step 2: Configure a static route on router-1 so all packets destined for server-1 subnet (172.16.2.0/24) are forwarded with 192.168.1.2 as next hop address. That is the directly connected interface of router-2

```
router-1(config)# ip route 172.16.2.0 255.255.255.0 192.168.1.2
router-1(config)# end
router-1# copy running-config startup-config
```

Router-2

Click on the *router-2* icon and select the *CLI* folder. Hit the <enter> key for user mode prompt (>).

Step 3: Enter global configuration mode

```
router-2> enable  
Password: cisconet  
router-2# configure terminal
```

Step 4: Configure a static route on router-2 so that all packets destined for host subnet (172.16.1.0/24) are forwarded with 192.168.1.1 as next hop address. That is the directly connected interface of router-1.

```
router-2(config)# ip route 172.16.1.0 255.255.255.0 192.168.1.1  
router-2(config)# end  
router-2# copy running-config startup-config
```

Step 5: Verify Lab

Verify the configuration is correct and confirm the static routes are installed in each routing table. Ping from host-1 to server-1 and verify routing is working correctly.

```
router-1# show running-config  
router-1# show ip route  
S 172.16.2.0 [1/0] via 192.168.1.2
```

```
router-2# show ip route  
S 172.16.1.0 [1/0] via 192.168.1.1
```

```
host-1: c:\> ping 172.16.2.1
```

```
host-1: c:\> tracert 172.16.2.1
```

Lab Notes

Layer 3 network connectivity requires bidirectional path forwarding between source and destination endpoints. As a result, two static routes are configured for both directions when dynamic routing is not enabled. There is an option as well to specify a local exit interface as next hop instead of IP address. Older static routes have to be removed or they are still active in the configuration script.

```
router-1(config)# no ip route 172.16.2.0 255.255.255.0 192.168.1.2  
router-1(config)# ip route 172.16.2.0 255.255.255.0 Fa1/0
```