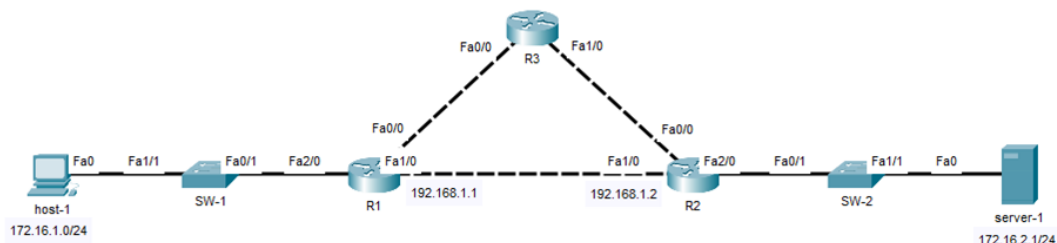


IPv4 Static Route

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.pkt**

Click on *R1* icon and select *CLI* folder.

Step 1: Enter global configuration mode

```
R1> enable
R1# configure terminal
```

Step 2: Configure a static route on R1 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 R2

```
R1(config)# ip route 172.16.2.0 255.255.255.0 192.168.1.2
R1(config)# end
R1# copy running-config startup-config
```

Click on *R2* icon and select *CLI* folder.

Step 3: Enter global configuration mode

```
R2> enable
R2# configure terminal
```

Step 4: Configure a static route on R2 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 R1.

```
R2(config)# ip route 172.16.1.0 255.255.255.0 192.168.1.1  
R2(config)# end  
R2# 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.

```
R1# show running-config  
R1# show ip route  
S 172.16.2.0 [1/0] via 192.168.1.2
```

```
R2# 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.

```
R1(config)# no ip route 172.16.2.0 255.255.255.0 192.168.1.2  
R1(config)# ip route 172.16.2.0 255.255.255.0 Fa1/0
```