

## Assignment 9

### Objective: Configure Static Route in GNS3

- Static route tells the device exactly where to send traffic, no matter what.
- Static route is often used when your network **has only a few routers** or **there is only one route from a source to a destination**.

#### Syntax of Static route:

```
# ip route destination-network-address subnet-mask {next-hop-IP-address | exit-interface}
```

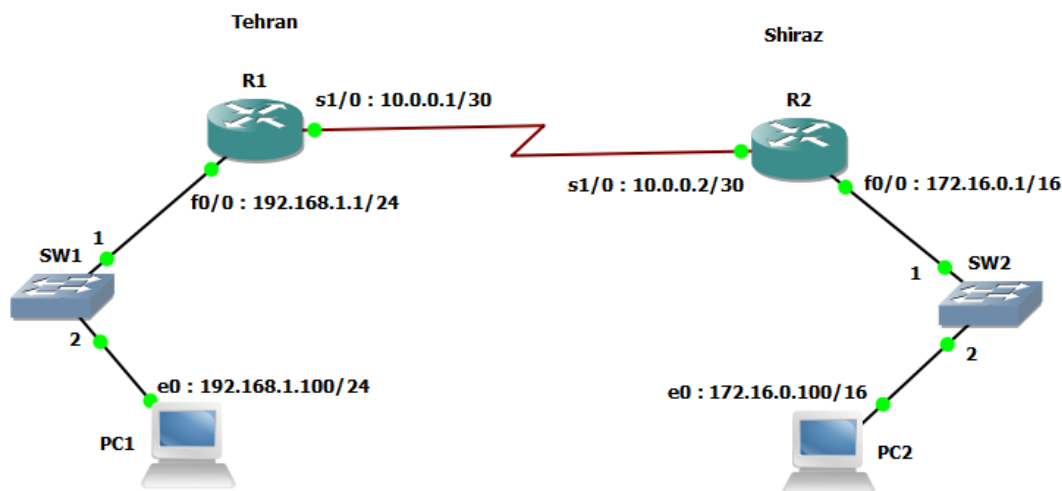
Where,

1. **destination-network-address:** destination network address of the remote network
2. **subnet mask:** subnet mask of the destination network
3. **next-hop-IP-address:** the IP address of the receiving interface on the next-hop router
4. **exit-interface:** the local interface of this router where the packets will go out

## 1. Scenario

- Suppose that your company has **2 branches** located in **Tehran** and **Shiraz**.
- As the administrator of the network, you are tasked to connect them so that employees in the two LANs **can communicate with each other**.
- After careful consideration you decided to connect them via **static route**.

## 2. Physical Topology



### 3. Configuring interfaces on R1

```
R1#configure terminal
R1(config)#interface fastEthernet 0/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no shut
R1(config-if)#exit
R1(config)#interface serial 1/0
R1(config-if)#ip address 10.0.0.1 255.255.255.252
R1(config-if)#no shut
R1(config-if)#clock rate 64000                (now can't send more than 64kbps)
```

### 4. Configuring interfaces on R2

```
R2#configure terminal
R2(config)#interface serial 1/0
R2(config-if)#ip address 10.0.0.2 255.255.255.252
R2(config-if)#no shut
R2(config-if)#exit
R2(config)#interface fastEthernet 0/0
R2(config-if)#ip address 172.16.0.1 255.255.0.0
R2(config-if)#no shut
R2(config-if)#exit
```

### 5. Show ip route command

```
R1#show ip route
```

```
R2#show ip route
```

### 6. Configuring static route on R1

```
R1(config)#ip route 172.16.0.0 255.255.0.0 10.0.0.2
R1(config)#exit
R1#show ip route
```

### 7. Configuring static route on R2

```
R2(config)#ip route 192.168.1.0 255.255.255.0 10.0.0.1
R2(config)#exit
R2#show ip route
```

### 8. Manually set an IP on PC1

```
PC1> ip 192.168.1.100 255.255.255.0 192.168.1.1
```

### 9. Manually set an IP on PC2

```
PC2> ip 172.16.0.100 255.255.0.0 172.16.0.1
```

## **10. Try to ping each far end network**

```
PC2> ping 192.168.1.100
```