



## What is Static Routing?

**Static Routing** is a type of routing where **routes are manually configured** by the network administrator.

- Routers do **not exchange routing information** automatically.
- The admin defines the exact path (route) to reach a specific network.



## Key Features of Static Routing:

- **Manual setup**
- **No overhead** from route advertisements
- **More secure**
- **Not scalable** for large networks



## When to Use Static Routing:

- Small networks
- Backup routes
- When the path never changes
- For simple or test labs



## Static Routing Command (Cisco IOS):

```
Router(config)# ip route [destination_network] [subnet_mask] [next_hop_ip or exit_interface]
```



## Example Scenario:

Let's say you have two routers:

PC1 --- R1 --- R2 --- PC2

### IP Addressing:

- **R1 to R2:** 192.168.1.1 ↔ 192.168.1.2 (subnet: 192.168.1.0/30)
- **PC1 Network:** 10.0.0.0/24 (connected to R1)
- **PC2 Network:** 20.0.0.0/24 (connected to R2)



## Static Route Commands:

On Router R1 (to reach PC2's network via R2):

```
R1(config)# ip route 20.0.0.0 255.255.255.0 192.168.1.2
```

On Router R2 (to reach PC1's network via R1):

```
R2(config)# ip route 10.0.0.0 255.255.255.0 192.168.1.1
```



## Benefits:

- Predictable and stable
- No CPU usage for calculations



## Limitations:

- Manual changes if topology changes
- Not suitable for large or dynamic networks