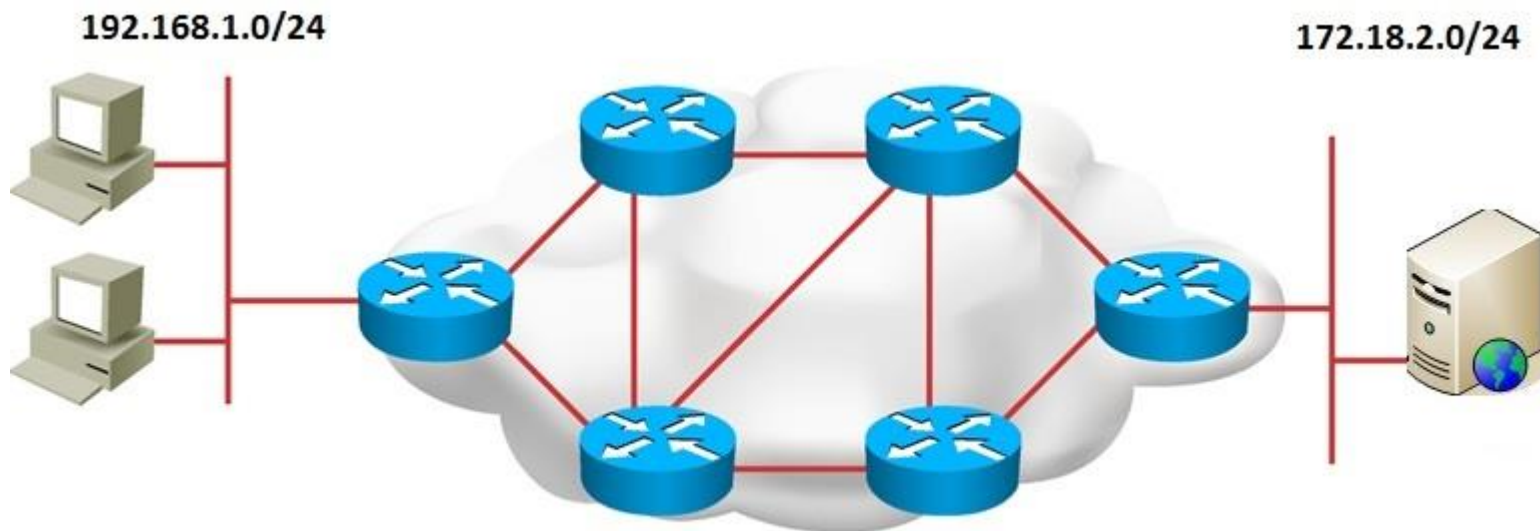


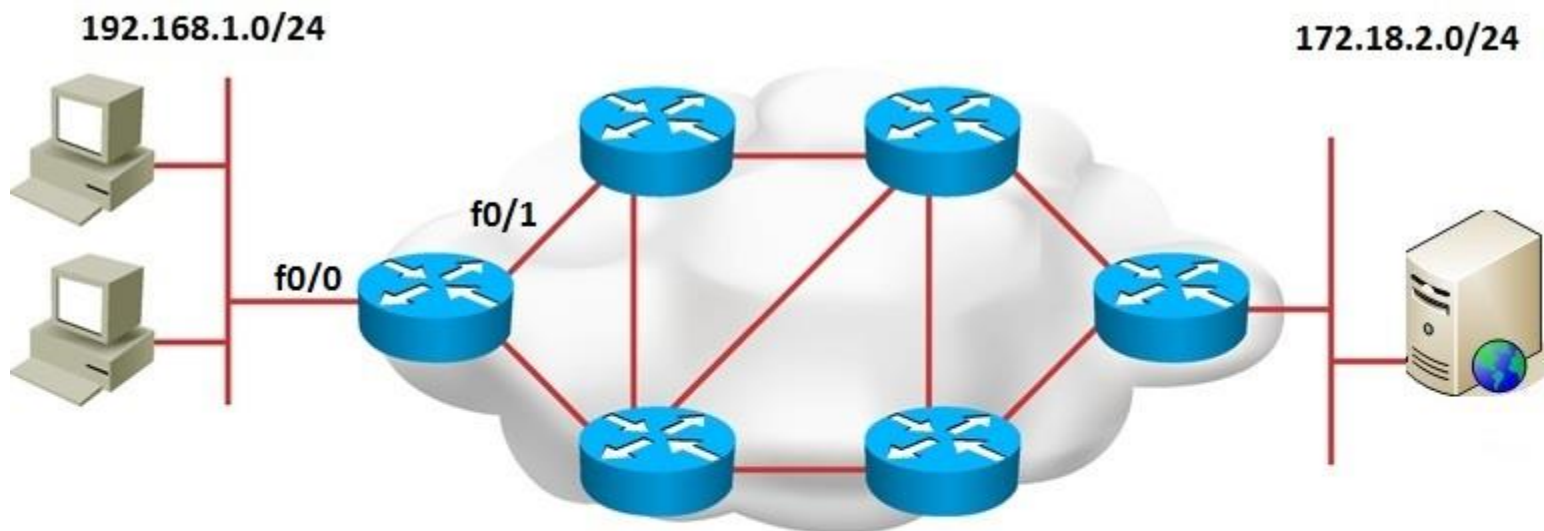
# Routing Concept



**A router needs to do the following:**

- Know the destination address.
- Identify the sources from which the router can learn.
- Discover possible routes to the intended destination.
- Select the best route.
- Maintain and verify routing information.

# Routing Concept

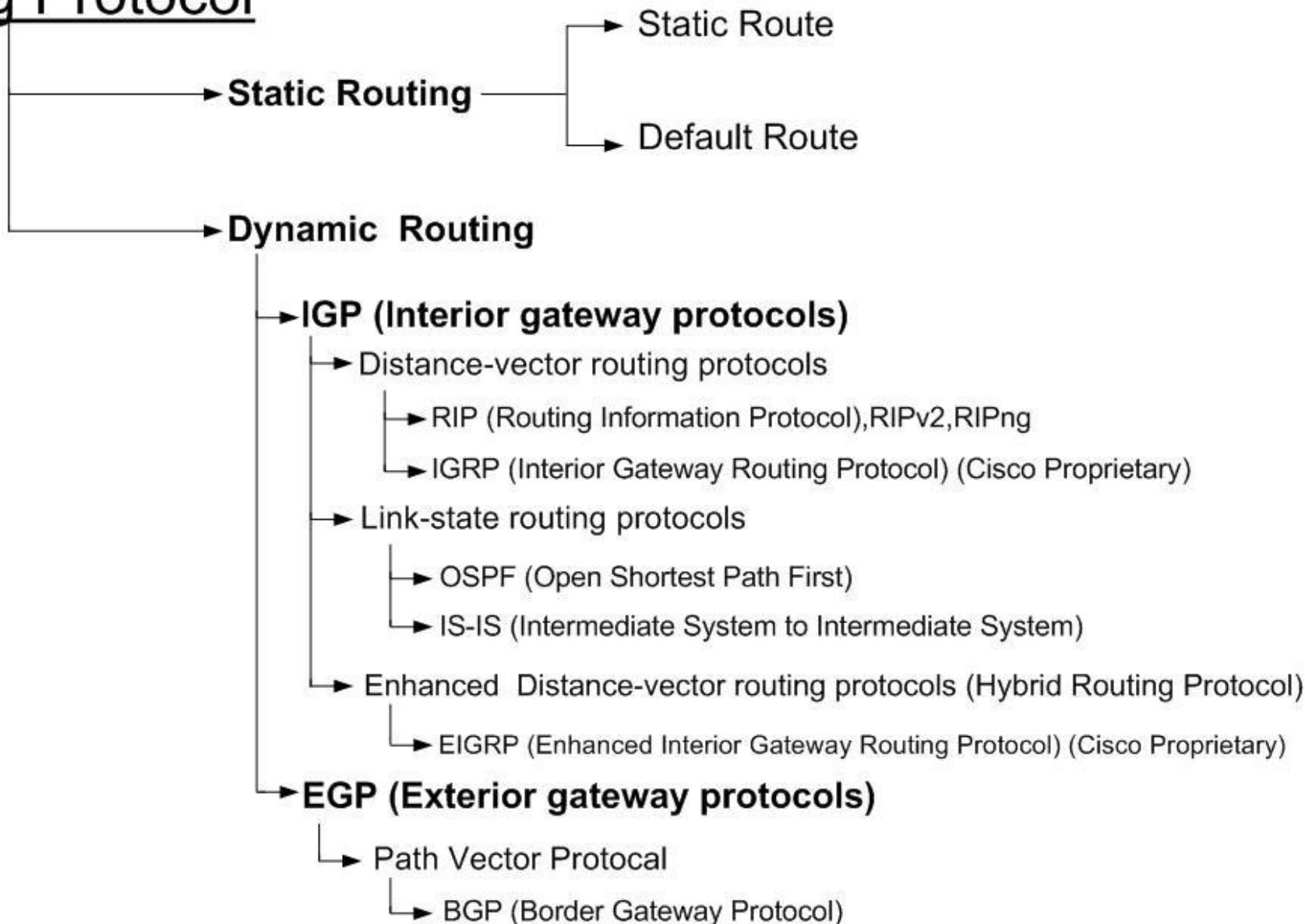


Network Protocol	Destination Network	Exit Interface
Connected	192.168.1.0	f0/0
Learned	172.18.2.0	f0/1

- Routers must learn destinations that are not directly connected.

# Routing Concept

## Routing Protocol

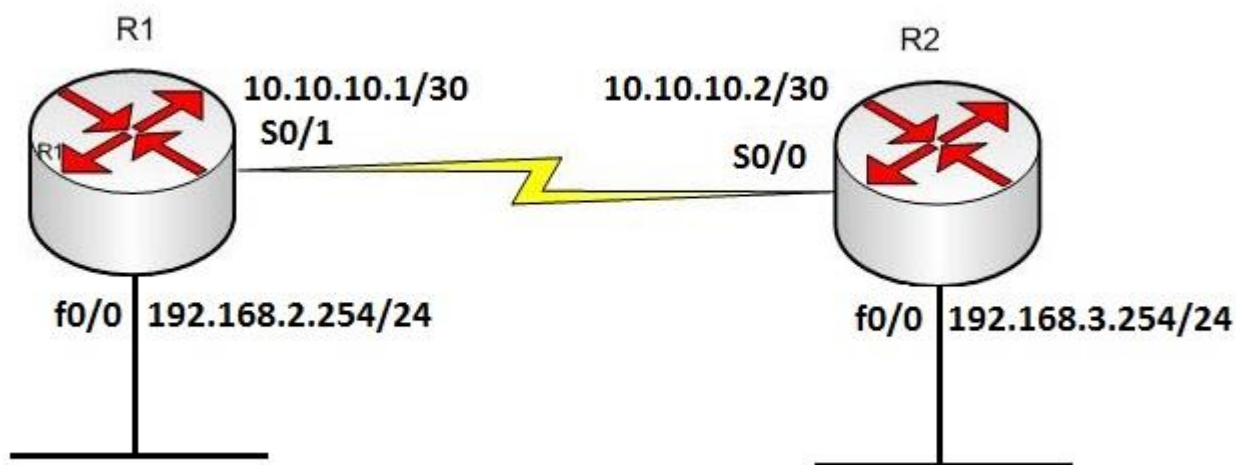


# Static Route

```
Jodoi-Router(config)#ip route (Network-IP) ( Subnet-Mask ) ( GW-IP Address| Interface )
```

- Defines a path to an IP destination network or subnet or host
- Address = IP address of the next hop router
- Interface = outbound interface of the local router

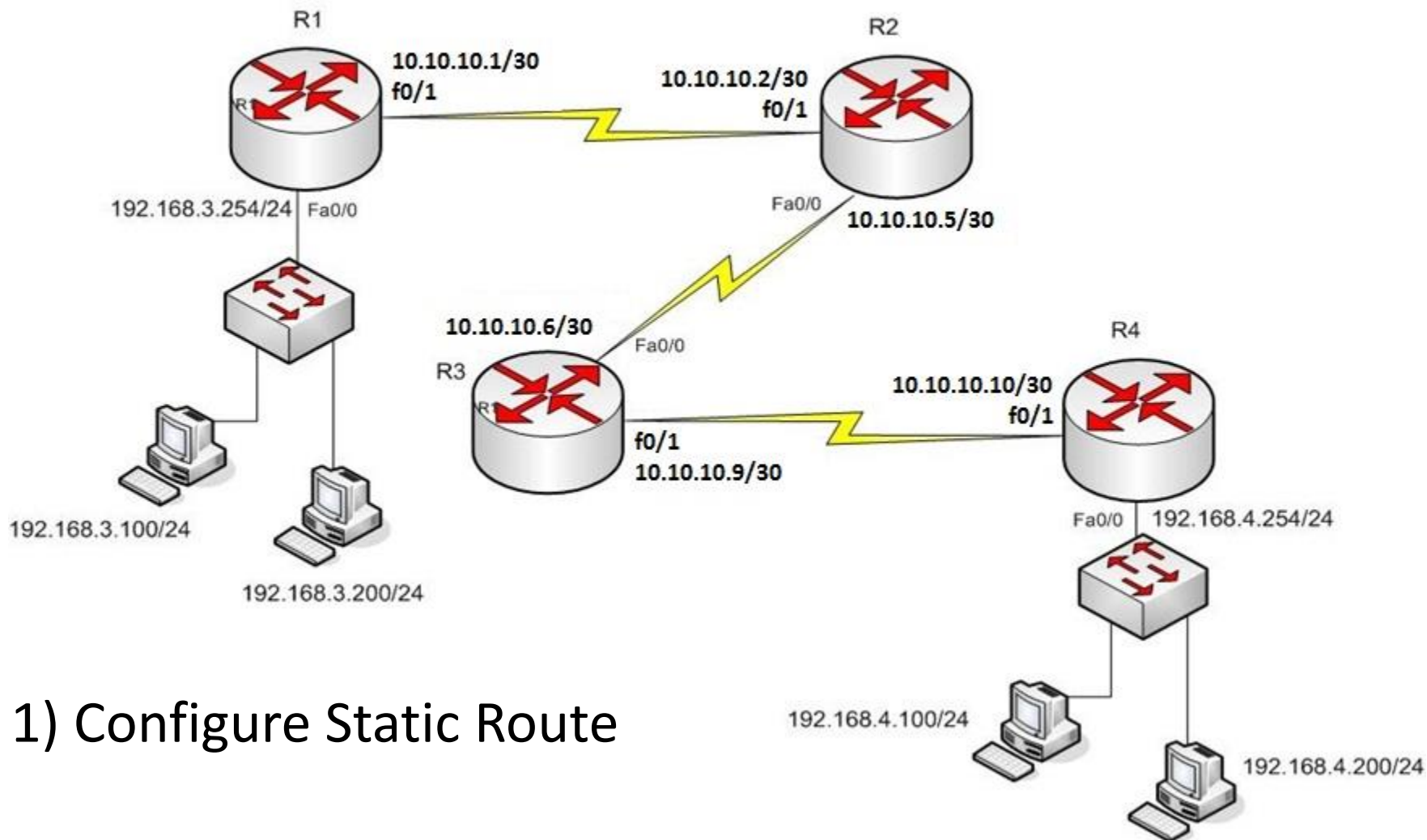
# Static Route



```
Jodoi-R1 (config) # ip route 192.168.3.0 255.255.255.0 10.10.10.2
Or
Jodoi-R1 (config) # ip route 192.168.3.0 255.255.255.0 s0/1
```

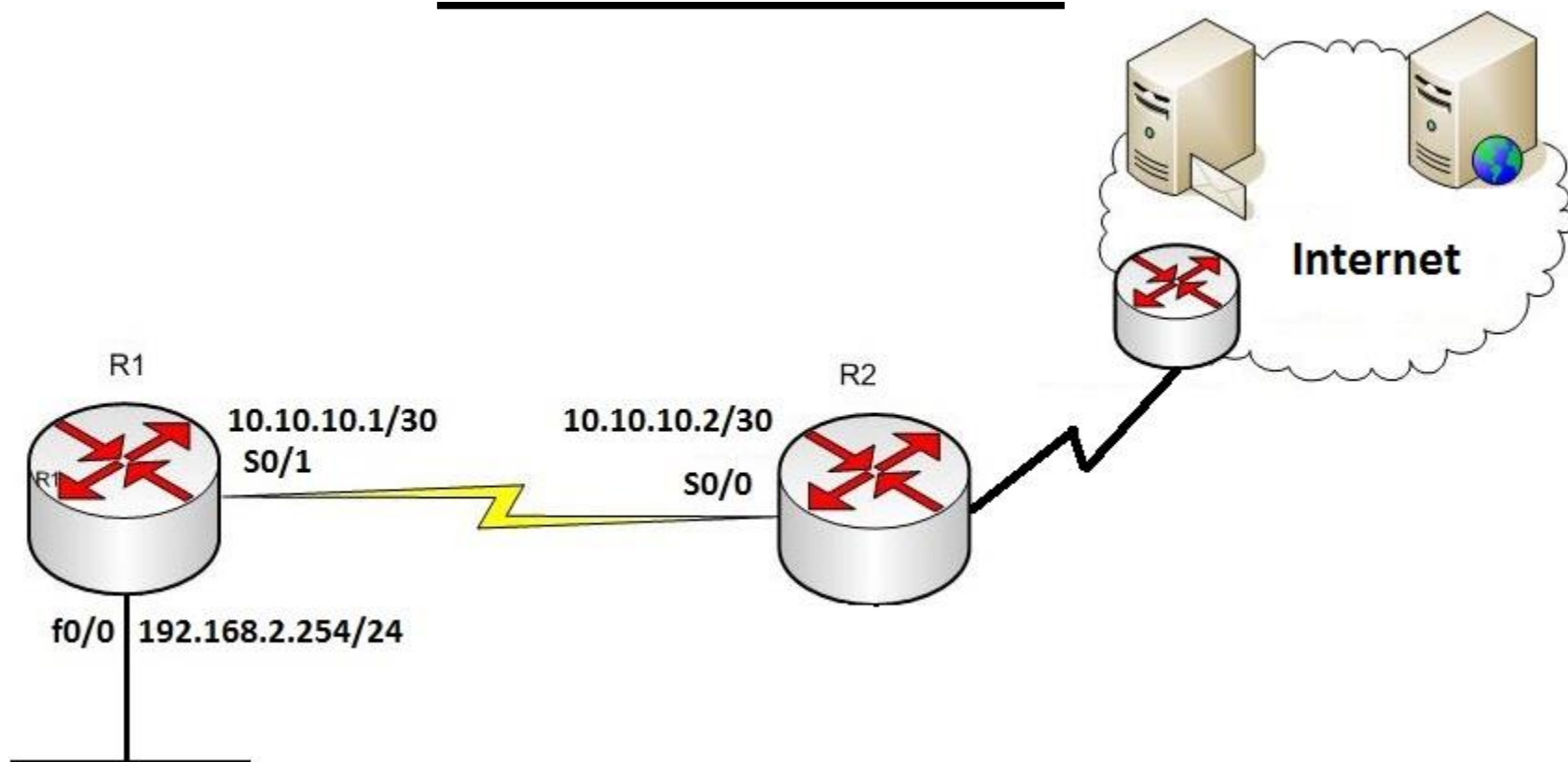
- This is a unidirectional route. You must have a route configured in the opposite direction.

# Lab Static Route



1) Configure Static Route

# Default Route



```
Jodoi-R1 (config) # ip route 0.0.0.0 0.0.0.0 10.10.10.2
Or
Jodoi-R1 (config) # ip route 0.0.0.0 0.0.0.0 s0/1
```

- This route allows the stub network to reach all known networks beyond Router R2

# Default Route

```
Jodoi-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 , 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, * - candidate default, U - per-user static route
```

```
Gateway of last resort is 0.0.0.0 to network 0.0.0.0
```

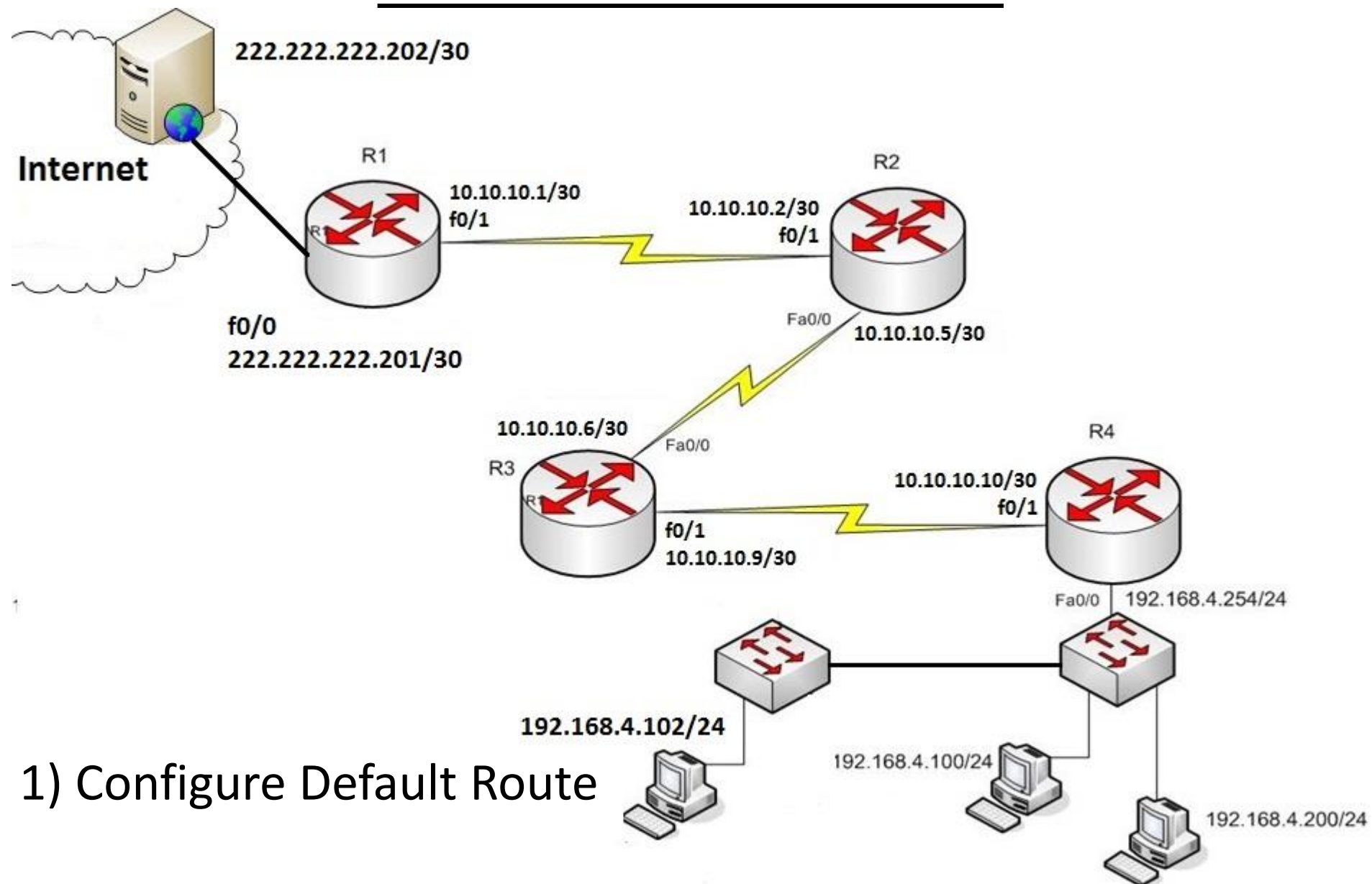
```
    10.0.0.0/8 is subnetted, 1 subnets
```

```
C    10.10.10.0 is directly connected, Serial0/1
```

```
S*   0.0.0.0/0 is directly connected, Serial0/1
```



# Lab Default Route



1) Configure Default Route