



# FREE CCNA



Day 11

STATIC

ROUTING



Jeremy's  
IT Lab





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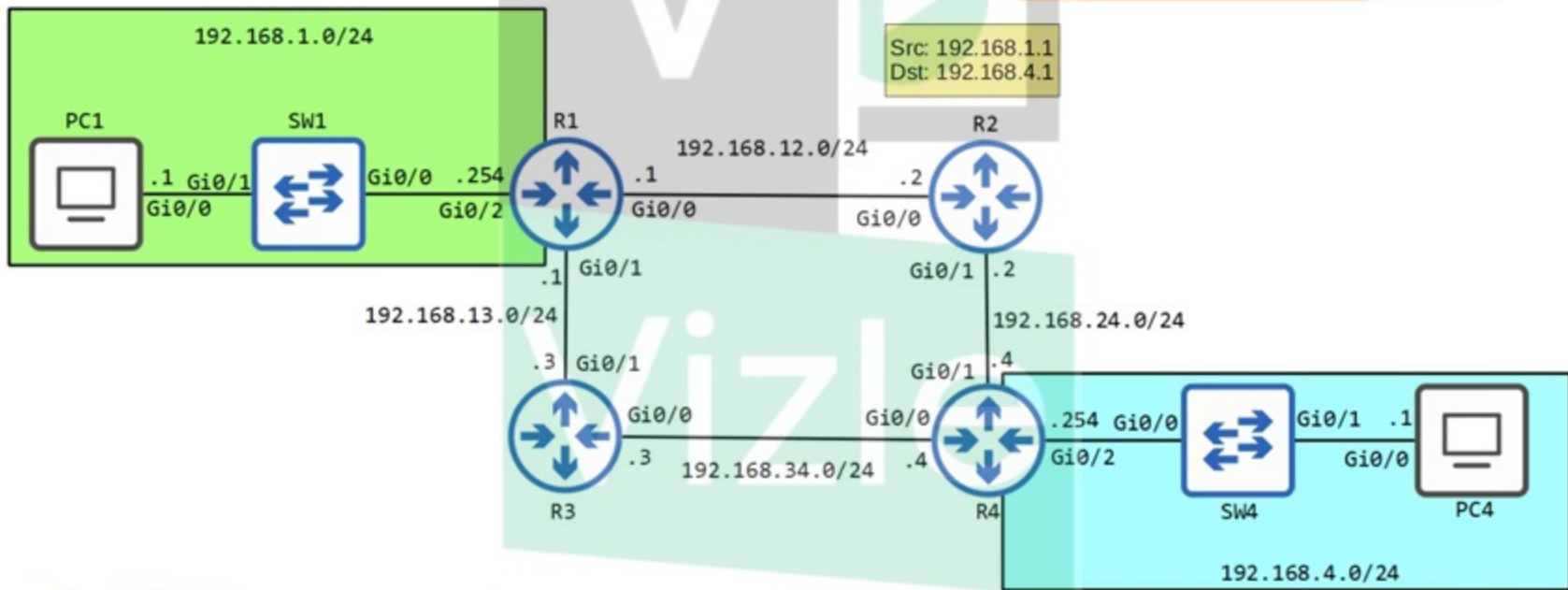
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# Network Topology

Compare the packet's destination IP address to the **routing table**.

192.168.4.0/24 via 192.168.14.4, Gi0/1

Src: 192.168.1.1  
Dst: 192.168.4.1





## Configuring a Default Route

- To configure the *gateway of last resort* on a Cisco router, you must configure a *default route*.
- A *default route* is a route that matches ALL possible destinations.
- It is used only if a more specific route match isn't found in the routing table.
- The default route is the least specific route possible:

IP Address: **0.0.0.0**

Mask: **0.0.0.0**

To set the default route/gateway of last resort, configure a route to **0.0.0.0/0**

The **0.0.0.0/0** range includes **0.0.0.0 ~ 255.255.255.255**

# R1 Routing Table

```
R1(config)#do show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/2
L       192.168.1.254/32 is directly connected, GigabitEthernet0/2
S       192.168.4.0/24 is directly connected, GigabitEthernet0/0
192.168.12.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.12.0/24 is directly connected, GigabitEthernet0/0
L       192.168.12.1/32 is directly connected, GigabitEthernet0/0
192.168.13.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.13.0/24 is directly connected, GigabitEthernet0/1
L       192.168.13.1/32 is directly connected, GigabitEthernet0/1
```





# Most Specific Matching Route

```
ping 192.168.4.1
```

```
S 192.0.0.0/8 [1/0] via 192.168.13.3
  192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C   192.168.1.0/24 is directly connected, GigabitEthernet0/2
L   192.168.1.254/32 is directly connected, GigabitEthernet0/2
  192.168.4.0/24 is variably subnetted, 2 subnets, 2 masks
S 192.168.4.0/24 is directly connected, GigabitEthernet0/0
S 192.168.4.1/32 [1/0] via 192.168.14.4
  192.168.12.0/24 is variably subnetted, 2 subnets, 2 masks
C   192.168.12.0/24 is directly connected, GigabitEthernet0/0
L   192.168.12.1/32 is directly connected, GigabitEthernet0/0
  192.168.13.0/24 is variably subnetted, 2 subnets, 2 masks
C   192.168.13.0/24 is directly connected, GigabitEthernet0/1
L   192.168.13.1/32 is directly connected, GigabitEthernet0/1
  192.168.14.0/24 is variably subnetted, 2 subnets, 2 masks
C   192.168.14.0/24 is directly connected, GigabitEthernet0/3
L   192.168.14.1/32 is directly connected, GigabitEthernet0/3
```



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