

We Really Could Use a Map!

Objectives

Describe the three types of routes that are populated in a routing table (to include: directly-connected, static, and dynamic).

Scenario

Use the Ashland and Richmond routing tables shown below. With the help of a classmate, draw a network topology using the information from the tables. To assist you with this activity, follow these guidelines:

- Start with the Ashland router - use its routing table to identify ports and IP addresses/networks.
- Add the Richmond router - use its routing table to identify ports and IP addresses/networks.
- Add any other intermediary and end devices, as specified by the tables.

In addition, record answers from your group to the reflection questions provided with this activity.

Be prepared to share your work with another group or the class.

Resources

```
Ashland> 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, E - EGP
i - IS-IS, 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

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, GigabitEthernet0/1
L 192.168.1.1/32 is directly connected, GigabitEthernet0/1
192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.2.0/24 is directly connected, Serial0/0/0
L 192.168.2.1/32 is directly connected, Serial0/0/0
D 192.168.3.0/24 [90/2170368] via 192.168.4.2, 01:53:50, GigabitEthernet0/0
192.168.4.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.4.0/24 is directly connected, GigabitEthernet0/0
L 192.168.4.1/32 is directly connected, GigabitEthernet0/0
D 192.168.5.0/24 [90/3072] via 192.168.4.2, 01:59:14, GigabitEthernet0/0
S 192.168.6.0/24 [1/0] via 192.168.2.2
Ashland>
```

We Really Could Use a Map!

```
Richmond> 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, E - EGP
i - IS-IS, 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

Gateway of last resort is not set

S 192.168.1.0/24 [1/0] via 192.168.3.1
D 192.168.2.0/24 [90/2170368] via 192.168.5.2, 01:55:09, GigabitEthernet0/1
192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.3.0/24 is directly connected, Serial0/0/0
L 192.168.3.2/32 is directly connected, Serial0/0/0
D 192.168.4.0/24 [90/3072] via 192.168.5.2, 01:55:09, GigabitEthernet0/1
192.168.5.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.5.0/24 is directly connected, GigabitEthernet0/1
L 192.168.5.1/32 is directly connected, GigabitEthernet0/1
192.168.6.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.6.0/24 is directly connected, GigabitEthernet0/0
L 192.168.6.1/32 is directly connected, GigabitEthernet0/0
Richmond>
```

Reflection

1. How many directly connected routes are listed on the Ashland router? What letter represents a direct connection to a network on a routing table?
2. Find the route to the 192.168.6.0/24 network. What kind of route is this? Was it dynamically discovered by the Ashland router or manually configured by a network administrator on the Ashland router?
3. If you were configuring a default (static route) to any network from the Ashland router and wanted to send all data to 192.168.2.2 (the next hop) for routing purposes, how would you write it?
4. If you were configuring a default (static route) to any network from the Ashland router and wanted to send all data through your exit interface, how would you write it?
5. When would you choose to use static routing, instead of letting dynamic routing take care of the routing paths for you?
6. What is the significance of the L on the left side of the routing table?