

Chapter 7 Reading Organizer pg. 1-5

After completion of this chapter, you should be able to:

- Explain the advantages and disadvantages of static routing.
- Explain the purpose of different types of static routes.
- Configure IPv4 and IPv6 static routes by specifying a next-hop address.
- Configure an IPv4 and IPv6 default routes.
- Explain the use of legacy classful addressing in network implementation.
- Explain the purpose of CIDR in replacing classful addressing.
- Design and implement a hierarchical addressing scheme.
- Configure an IPv4 and IPv6 summary network address to reduce the number of routing table updates.
- Configure a floating static route to provide a backup connection.
- Explain how a router processes packets when a static route is configured.
- Troubleshoot common static and default route configuration issues.
- After completing this Reading Organizer, [complete the practice Quiz on Netspace.](#)

7.1 Dynamic Routing Protocols

7.1.1.1. What was one of the first routing protocols used?

7.1.1.1. To address the needs of larger networks, two advanced routing protocols were developed. These are:

- a.
- b.

7.1.1.1. Cisco developed two protocols which also scale well in larger network implementations. These are:

- a.
- b.

7.1.1.1. What protocol was developed to connect different internetworks and provide routing between them, and connect ISPs and their larger private clients to exchange routing information?

7.1.1.2. What are routing protocols are used to facilitate?

7.1.1.2. The purpose of dynamic routing protocols includes:

- a.
- b.
- c.
- d.

7.1.1.2. List and explain the main components of dynamic routing protocols.

a. _____ –

b. _____ –

c. _____ –

7.1.1.3. What is a primary benefit of dynamic routing protocols?

7.1.1.3. Will a network with moderate levels of complexity have static, dynamic routing, or both configured?

7.1.1.4. In the area of data structure, EIGRP creates and maintains what information?

a.

b.

7.1.1.4. In the area of routing protocol messages, what does EIGRP use?

a.

b.

c.

d.

e.

7.1.1.4. What algorithm does EIGRP use to identify the best route to a network?

7.1.2.1. Explain the primary uses static routing has.

a.

b.

c.

7.1.2.2. What are the disadvantages of using static routing?

- a.
- b.
- c.

7.1.2.4. What are the advantages of using dynamic routing protocols?

- a.
- b.
- c.

7.1.2.4. What are the disadvantages of using dynamic routing protocols?

- a.
- b.
- c.
- d.

7.1.2.5. Mark the appropriate classification next to each routing type description.

	Static Routing	Dynamic Routing
Suitable for multiple router topologies.		
Adapts to topology changes to reroute traffic, when possible.		
Easy to implement in a small network.		
Requires more CPU, RAM, and link bandwidth.		
Route to the destination is always the same.		

7.1.3.1. In general, describe the operations of a dynamic routing protocol.

- 1.
- 2.
- 3.
- 4.

7.1.3.3. After a router is first booted it learns about any directly connected networks. If a routing protocol is configured, what is the next step is for the router?

7.1.3.4. Distance vector routing protocols typically implement a routing loop prevention technique known as split horizon. Explain.

7.1.3.5. What does it mean when a network is converged?

7.1.3.5. Define convergence time.

7.1.4.1. Routing protocols can be classified into three different groups according to their characteristics. List and explain each category.

- a. _____ –
- b. _____ –
- c. _____ –

7.1.4.1. Based on the curriculum, classify the following IPv4 routing protocols.

- a. RIPv2 –
- b. EIGRP –
- c. OSPF –
- d. BGP –

7.1.4.2. What is an autonomous system (AS)?

7.1.4.2. The Internet is based on the AS concept; therefore, two types of routing protocols are required: List and explain both.

a. _____ –

b. _____ –

7.1.4.3. Define the following terms.

a. Distance –

b. Vector –

7.1.4.3. What are four distance vector IPv4 interior gateway protocols?

a.

b.

c.

d.

7.1.4.4. How is a router configured with a link-state routing protocol different from a router configured with a distance vector protocol?

7.1.4.4. Explain where Link-state protocols work best.

a.

b.

c.

7.1.4.4. List two link-state IPv4 IGPs.

a.

b.