

Chapter 8 – SLAAC and DHCPv6

Reading Organizer

Student Version

Instructions: Read/study the numbered curriculum slides and perform any interactive media activities until you thoroughly understand the material. Then respond to the questions below to check your understanding.

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

- Explain the operation of DHCPv6.
- Configure a stateless DHCPv6 for a small to medium-sized business.
- Configure a stateful DHCPv6 for a small to medium-sized business.
- Troubleshoot a DHCP configuration for IPv6 in a switched network.

8.1.1 IPv6 Host Configuration

1. What is the acronym GUA? _____
2. What is the command to statically assign a router an IPv6 address?
3. What is the problem with making static address?

8.1.2 IPv6 Host Link-Local Address

4. What protocol is used to provide interfaces with addressing information?
5. Where does the IPv6 Link-local address (LLA) come from?
6. What is the % used for in the LLA?

8.1.3 IPv6 GUA Assignment

7. What is the difference between the terms stateless and stateful?
8. What are the acronyms RA and RS?

8.1.4 Three RA Message Flags

9. Using different combinations of the M and O flags, RA messages have one of three addressing options for the IPv6 device. These are:
 - a. ____ flag -
 - b. ____ flag -
 - c. ____ flag -

8.1.5 Check Your Understanding – Ipv6 GUA Assignment

8.2.1 Stateless Address Autoconfiguration (SLAAC)

10. What does SLAAC enable hosts to do?
11. How often are RA messages sent?
12. There are two methods in which SLAAC can be used to assign IPv6 global unicast addresses dynamically. List both.
 - a.
 - b.
13. Which DHCP method allows a device to obtain an IPv6 global unicast address without the services of a DHCPv6 server?

8.2.2 Enabling SLAAC

14. A router must be enabled as an IPv6 router before it can send RA messages. What command is used to enable IPv6 routing?

Router(config)#
15. What is the IPv6 all-nodes multicast address? (Which behaves the same as a broadcast in IPv4):

8.2.2 SLAAC Only Method

16. Which router advertisement is the default on Cisco routers?

17. What information is included in the RA?

18. What are the states of the M and O flag when choosing SLAAC?

8.2.4 ICMPv6 RS Messages

19. When will a router send an RA message?
 - a.

 - b.

8.2.5 Host Process to Generate Interface ID

20. There are two ways a PC can create its own unique IID (64-bit Interface ID). List and explain both.
 - a. _____ -

 - b. _____ -

8.2.6 Duplicate Address Detection

21. What is the acronym NS?

22. What is a solicited-node multicast address?

8.2.7 Check Your Understanding – SLAAC

8.3.1 DHCPv6 Operation Steps

23. What are the differences between the information request from a Stateless DHCPv6 client and a Stateful DHCPv6 client?

a. Stateless DHCPv6 client –

b. Stateful DHCPv6 client -

8.3.2 Stateless DHCPv6 Operation

24. How is the Stateless DHCPv6 option different from the SLAAC option?

25. What are the states of the M and O flag when choosing the Stateless DHCPv6 option?

8.3.3 Enable Stateless DHCPv6 on an Interface

26. What is the command to enable stateless DHCPv6 on a router interface?

8.3.4 Stateful DHCPv6 Operation

27. How is the Stateful DHCPv6 option different from the prior two options?

28. What are the states of the M and O flag when choosing Stateful DHCPv6?

8.3.5 Enable Stateful DHCPv5 on an Interface

29. What are the commands to set the appropriate flags?

8.3.6 Check Your Understanding – DHCPv6

8.4.1 DHCPv6 Router Roles

30. What are the three possible roles of a DHCPv6 router?

- a.
- b.
- c.

8.4.2 Configure a Stateless DHCPv6 Server

31. What are the five steps to configure a stateless DHCPv6 server?

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

8.4.3 Configure a Stateless DHCPv6 Client

32. What are the five steps to configure a stateless DHCPv6 client?

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

8.4.4 Configure a Stateful DHCPv6 Server

33. What are the five steps to configure a stateless DHCPv6 server?

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

8.4.5 Configure a Stateful DHCPv6 Client

34. What are the five steps to configure a stateless DHCPv6 client?

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

8.4.6 DHCPv6 Server Verification Commands

35. What are the two verification commands?

- a.
- b.

8.4.7 Configure a DHCPv6 Relay Agent

36. What is the purpose of a relay agent?

8.4.8 Verify the DHCPv6 Relay Agent

37. What are the three commands to verify the DHCPv6 relay agent?

- a.
- b.
- c.

8.4.9 Check Your Understanding - Configure DHCPv6 Server

8.5.1 Lab - Configure DHCPv6

8.5.2 What did I learn in this module?

8.5.3 Module Quiz - SLAAC and DHCPv6