

Module 8 – VPN and IPsec Concepts Study Guide

Tips for success: While answering the questions read Module 8, review the summary, and complete the practice Quiz.

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

- Describe VPN technology.
- State the benefits of VPN technology.
- Differentiate between site-to-site, remote-access, and service provider VPNs.
- Define SSL, GRE, and IPsec technologies.

8.1 VPN Technology

8.1.1 Virtual Private Networks

1. What is the definition of a VPN?

2. What is an ASA? What does it do?

3. What is Cisco AnyConnect and how is it used?

4. What is GRE?

8.1.2 VPN Benefits

5. What are the four features of a secure VPN??
 - a.

 - b.

 - c.

 - d.

8.1.3 Site-to-Site and Remote-Access VPNs

What are the 2 VPN types and a definition of each:

1. _____ -

2. _____ -

8.1.4 Enterprise and Service Provider VPNs

6. What methods are used to secure VPNs managed by the company enterprise??

7. What methods are used to secure VPNs by service providers?

8.1.5 Check Your Understanding – VPN Technology

8.2 Types of VPNs

8.2.1 Remote-Access VPNs

8. What are the two ways that a remote user can initiate a remote VPN connection?

a. _____

b. _____

8.2.2 SSL VPNs

9. Compare and contrast the two methods of securing VPN traffic:

Feature	IPsec	SSL

8.2.3 Site-to-Site IPsec VPNs

10. What could be used as a VPN gateway device?

a. _____

b. _____

11. How are site-to-site VPNs usually secured?

8.2.4 GRE over IPsec

12. What is the outstanding difference between GRE and the other security protocols above?

13. List and define the 3 GRE terms and definitions:

1.	
2.	
3.	

8.2.5 Dynamic Multipoint VPNs

14. What is the advantage of DMVPN?

15. What security protocol is used with DMVPN?

16. What is the difference between Hub-to-spoke and Spoke-to-spoke tunnels?

8.2.6 IPsec Virtual Tunnel Interface

17. Describe to someone who doesn't know, what's an IPsec Virtual Tunnel Interface (VTI)?

8.2.7 Service Provider MPLS VPNs

18. Describe the two types of service provider MPLS VPNs:

a.

b.

8.2.8 Check Your Understanding - Types of VPNs

8.3 IPsec

8.3.1 Video - IPsec Concepts

8.3.2 IPsec Technologies

19. IPsec provides these essential security functions:

20. Define Diffie-Hellman (DH) algorithm:

8.3.3 IPsec Protocol Encapsulation

21. List the differences between AH and ESP:

8.3.4 Confidentiality

22. How is confidentiality achieved?

8.3.5 Integrity

23. What is the role of HMAC?

24. What are the two most common HMAC algorithms?

a.

b.

8.3.6 Authentication

25. What are the two types of authentication?

a.

b.

8.3.7 Secure Key Exchange with Diffie-Hellman

26. How does shared secret key work?

8.3.8 Video - IPsec Transport and Tunnel Mode

8.3.9 Check Your Understanding - IPsec

8.4 Module Practice and Quiz

8.4.1 What did I learn in this module?

8.4.2 Module Quiz - VPN and IPsec Concepts