**N+\_Chapter-5: Networking Devices**

1. How does DHCP work and what is its purpose?

Ans. Dynamic Host Configuration Protocol (DHCP) provides IP configuration information to hosts. It is important to know how a DHCP client requests information to a server, how a server receives this information, and also how the server responds to the client and with what type of information.

1. How does DNS work and what is its purpose?

Ans. Domain Name Service (DNS) is used to resolve human names to IP addresses in binary format. Understanding how DNS resolves these names is critical, as is understanding how a DNS query is sent and how a DNS server responds.

1. What is the difference between a hub, a switch (bridge), and a router?

Ans. A hub just connects network segments together. A switch/bridge segments the network using MAC addresses, and a router segments the network using logical addressing (IP and IPv6).

1. What are the different names for a router?

Ans. A router is a Layer 3 hardware device, but can also be called a Layer 3 switch, or a multilayer switch.

1. Write the various devices used on networks today and when you would use each one

and how?

Ans. Understand the differences and how each device works: routers, switches, hubs,

DNS servers and DHCP servers.

1. Identify the purpose, benefits, and characteristics of using a proxy server.

Ans. A proxy server keeps a LAN somewhat separated from the Internet. Doing so increases security and filtering control and has the tendency to speed up Internet access through caching of recently used web pages.

1. Describe the proper use of network segmentation when planning and implementing a basic

SOHO network.

Ans. Understand and apply the concepts of proper network segmentation when planning the use of various devices in the design of a SOHO network.

1. Describe the benefits of using dedicated appliances for certain services.

Ans. Using dedicated appliances to offload functions such as encryption, content filtering, and VPN concentration can decrease the workload of other systems and add functionality that may be present in these dedicated devices.

1. Identify the environmental requirements of infrastructure devices.

Ans. A cool temperature, ample ventilation, and the proper humidity level are all keys to maintaining the operation of devices like routers, switches, and appliances.

1. Define the Firewall.

Ans. In computing, a **firewall** is a network security system that monitors and controls the incoming and outgoing network traffic based on predetermined security rules. A firewall typically establishes a barrier between a trusted, secure internal network and another outside network, such as the Internet. Firewalls are often categorized as either *network firewalls* or *host-based firewalls*.

Network firewalls are a [software appliance](https://en.wikipedia.org/wiki/Software_appliance) running on general purpose hardware or hardware-based [firewall computer appliances](https://en.wikipedia.org/wiki/Computer_appliance#Types_of_appliances) that filter traffic between two or more networks. Host-based firewalls provide a layer of software on one host that controls network traffic in and out of that single machine.Firewall appliances may also offer other functionality to the internal network they protect such as acting as a [DHCP](https://en.wikipedia.org/wiki/DHCP) or [VPN](https://en.wikipedia.org/wiki/VPN) server for that network.

What is a firewall?

Ans. A firewall is a software program or piece of hardware that helps screen out hackers, viruses, and worms that try to reach your computer over the Internet

Or. A firewall is a [network](http://searchnetworking.techtarget.com/definition/network) security system, either hardware- or software-based, that controls incoming and outgoing network traffic based on a set of rules.

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