Amadou Bah CSC1302 Homework #1 08/29/2017

Chapter 3

51. Multi-Core operating systems employ a collection of processors (cores) to facilitate multi-tasking. Rather having a single processor try to perform two processes at once, in which case, the processor would be forced to continuously change time slices, multi-core operating systems would run two processes on two separate core. This ability suggests that multi-core operating systems are more efficient at multitasking than those with a single core.

52. While firmware and operating system updates help fix bugs on the firmware and operating system respectfully, since the firmware is found in nonvolatile memory and is not readily changeable, updates on the firmware is less common than updates on the operating system.

Chapter 4

1. In order for products from one or more manufacturers to be able to communicate (compatible) it is important that they are built under the same set of rules called protocols. The Carrier Sense, Multiple Access with Collision Detection (CSMA/CD) protocol is used to transmit messages in a bus network. The Simple Mail Transfer Protocol (SMTP) is used to transfer electronic mail between host. The Telnet Protocol allows one to access applications on a different computer from a distance.

4. Distributed systems include: Cluster computing, whereby a collection of independent, typically local computers work together to effectively manage heavy workloads; Grid Computing, is similar to clustered computing but whose interconnections span a wider range; Cloud computing, makes use of applications allowing users to obtain computing power form datacenters, often in remote locations.

10. Unlike switches, bridges, and repeaters, which can only be used to connect networks with similar internal characteristics, routers allow for interconnection of networks with different topologies.

11. The main difference is that a network is a connection of computers whereas an internet combines networks, creating a bigger network.

24. a) Hypertext: like regular word documents whose text characters use ASCII or Unicode. However, hypertexts also use special symbols called tags, allowing one document to be linked to other documents.

b) HTML: the use of tags, such as those on hypertexts, to setup the appearance of a document like webpages

c) Browser: applications that interpret HTML tags on a document, and grant users the ability to view and easily understand webpages on the Internet.

37. A user entering key words on a search engine is an example of a client-side activity, and the result from this search is an example of server-side activities. When narrowing down a search for a desired product on Amazon, the user is allowed to apply filters, which is another example of client-side activities. The act of providing a narrowed search result is another example of server-side activities.

42. The transport layer at the origin sends its own message to the transport layer at the destination telling it to expect a message. It then waits for acknowledgement before sending the original message from the application layer.

47. A proxy server is a software unit that protects clients from potentially malicious acts of the server. By acting as the intermediary between the two parties, a major advantage of a proxy server is that it prevents the server from accessing sensitive information from the user.