Module 3 [Network Configuration]

Topic: Local area networking

- ## Assignment level Basic:

1. What is Network?

   A network, in computing, is a group of two or more devices or nodes that can communicate. The devices or nodes in question can be connected by physical or wireless connections.

2. What is Internet & Intranet?

Differences to differentiate them.

Internet:

Internet is used to connect different network of computers simultaneously. It is a public network therefore anyone can access the internet. In internet, there are multiple users and it provides unlimited number of information to the users.

Intranet:

Intranet is the type of internet which is used by privately. It is a private network therefore anyone can't access intranet. In intranet, there are limited number of users and it provides limited number of information to its users.

- ## Assignment level Intermediate:

1. How many types of Network we used?

   Some of the most popular network types are: PAN, LAN, MAN, WAN

2. Different between LAN & PAN?

LAN:

Local Area Network.

10m to 100m and even more in wireless LAN case.

LAN supports 10, 100 and 1000 Mbps while WLAN supports 54Mbps and above 100Mbps.

Wireless LAN or WLAN as per IEEE 802.11 standards.

Mainly used for wireless LAN and LAN where in data transfer at high speed is desired.

PAN:

Personal Area Network.

10m to 100m in wireless PAN network .

250Kbps in zigbee, From Kbps to 24 Mbps in bluetooth case.

Zigbee, Bluetooth, zwave etc.

Used for low data rate and short distance applications.

- ## Assignment level advance:

1. Explain LAN?

   A local area network (LAN) is a collection of devices connected together in one physical location, such as a building, office, or home. A LAN can be small or large, ranging from a home network with one user to an enterprise network with thousands of users and devices in an office or school.

2. What are different types of LAN devices?

   There are different types of network devices used in a computer network which include the following.

   Network Hub
   Network Switch
   Modem
   Network Router
   Bridge
   Repeater

Topic: configured Network

- ## Assignment Level Basic

1. What is configured network?

   The Network configuration is the process of setting a network's controls, flow and operation to support the network communication of an organization and/or network owner.

2. How do we configure network?

   The Configure Computer Network Last Updated By Admin on March 31, 2015 0Share Tweet 0Share 0Pin 0Share Configuring the network can be tricky. Before going any further in configuring the network, finding out which network types best suits the need of organization is the most important factor.

- ## Assignment level Intermediate.

1. How to check the ip address?

   Steps:

   (1) Go to your start menu and find 'Run'

   (2) Inside the box, type the letters 'cmd'

   (3) Command prompt should open and be waiting for input.

   (4) Type 'ipconfig' and press enter.

   (5) It should list not only your computers IP address, but your router's as well.

2. How to check the ip address through cmd?

   (1) Click the Windows logo and type cmd
   (2) Choose Run as administrator from the right-panel

(3) Select Yes if prompted in a dialogue box.
(4) In the command prompt, type below command and hit the Enter key.
(5) Ipconfig (Command)

3. How can we enter static address in network adapter?
   (1) In Windows, click Start and type network connections. In the search results click View network connections.
   (2) Right click on Ethernet (Local Area Connection) and click Properties.
   (3) Select Internet Protocol Version 4 (TCP/IPv4) > and click Properties.
   (4) Select Use the following IP address. Enter IP address 192.168.0.210 in the IP address field.

- Assignment Level Advanced

1. Do a practical to release the packets from the adapter.

   Yes.

2. Do a practical to renew the lease of the ip address.

   Yes.

3. Do a practical to check the connectivity to the google.

   Yes

Topic: Wireless networking

- Assignment level Basic:

1. What is the difference between WEP and WPA?

   WEP

   Wired Equivalent Privacy.

   A security protocol for wireless networks introduced in 1999 to provide data confidentiality comparable to a traditional wired network.

   Through the use of a security algorithm for IEEE 802.11 wireless networks it works to create a wireless network that is as secure as a wired network..

   Wireless security through the use of an encryption key.

   Open system authentication or shared key authentication.

   WPA

   Wi-Fi Protected Access.

   A security protocol developed by the Wi-Fi Alliance in 2003 for use in securing wireless networks; designed to replace the WEP protocol.

   As a temporary solution to WEP's problems, WPA still uses WEP's insecure RC4 stream cipher but provides extra security through TKIP.

   Wireless security through the use of a password.

Authentication through the use of a 64 digit hexadecimal key or an 8 to 63 character passcode.

2. What is Wireless Network?

   Wireless networks are computer networks that are not connected by cables of any kind. The use of a wireless network enables enterprises to avoid the costly process of introducing cables into buildings or as a connection between different equipment locations. The basis of wireless systems are radio waves, an implementation that takes place at the physical level of network structure.

- Assignment level Intermediate:

1. What is a wireless network connection?

   The wireless network is a computer network that uses wireless data connections between network nodes. Wireless networking is a method by which homes, telecommunications networks and business installations avoid the costly process of introducing cables into a building, or as a connection between various equipment locations.

2. What are the basic concepts of networking?

   The Basics of Computer Networking:

   Open system, Closed system, Computer Network, Network Topology, OSI, Protocol etc.

- Assignment level advance:

1. What do you need to know about networking?

   Open system:

   The system which is connected to the network and is ready for communication.

   Closed system:

   The system which is not connected to the network and can't be communicated with.

2. How do you explain computer networking?

   Computer networks can be categorized in several different ways. One approach defines the type of network according to the geographic area it spans. Local area networks (LANs), for example, typically span a single home, school, or small office building, whereas wide area networks (WANs), reach across cities, states, or even across the world. The internet is the world's largest public WAN.

Topic: THE Internet

- Assignment level Basic:

1. What do you mean by the term URL?

URL" is an acronym that stands for "Universal Resource Locator."

2. Term which is used to see web pages is called what?

   The web page or webpage is a document commonly written in HTML and that is viewed in an Internet browser.

- ## Assignment level Intermediate:

1. In the Ethernet which topology is used?

   A topology explains how physically the network is designed or what is the structure of the network. These designs are both physical and logical. There are many network topologies 4 like Bus, Star, Ring, and Mesh.

2. Set of rules and regulations while working on internet, which term is used?

   Keep Personal Information Professional and Limited, Keep Your Privacy Settings On, Practice Safe Browsing, Be Careful What You Download, Choose Strong Passwords

- ## Assignment level advance:

1. What do you mean by RAS?

   A remote access server (RAS) is a type of server that provides a suite of services to remotely connected users over a network or the Internet.

2. What are the main search engines to get more website URL on Internet?

   Google, Microsoft Bing, Yahoo, Baidu, Yandex etc.

3. What does the PROTOCOL consist of?

   The digital language through which we communicate with others on the Internet.

Topic: Virtualization

- ## Assignment level Basic:

1. What is Virtualization?

   The Operating system virtualization (OS virtualization) is a server virtualization technology that involves tailoring a standard operating system so that it can run different applications handled by multiple users on a single computer at a time. The operating systems do not interfere with each other even though they are on the same computer.

2. What is the Difference between Full Virtualization and Para Virtualization?

   FULL VIRTUALIZATION
   Binary translation and direct execution
   Unmodified guest OS and excellent compatibility.
   Performance Moderate
   Security Less secure
   Speed Intermediate
   Used by VMware, Microsoft, Parallels
   Guest OS hypervisor independent Yes
   Characteristic Software-based

Para Virtualization
Technique Hypercalls
Guest modification/Compatibility Guest OS codified to issue hypercalls so it.
Performance Good
Security More secure
Speed Fast
Used by VMware, Xen
Guest OS hypervisor independent Not completely dependent, both conditions are possible.
Characteristic Cooperative virtualization.

- ## Assignment level Intermediate:

1. What is Hyper-visor?

   The hypervisor is software that creates and runs virtual machines. A hypervisor, sometimes called a virtual machine monitor, isolates the hypervisor operating system and resources from the virtual machines and enables the creation and management of those VMs.
2. What are different hypervisors available in Linux?
3. What is Virtualization and what are its types?

   Virtualization is the technology to generate virtual instances of computer resources for multiple uses of the same physical resource. There are several virtualization technologies available that are capable of virtualizing the server, storage, networks, and operating systems. The virtualization technology is known for easy to set up and environment setup cost optimization with higher processing efficiency. The virtualization environment shared the actual resources component such as Memory(RAM), disk space and network as a separate resource group. Virtualization helps the organizations to scale the computation resources.

   Types of Virtualization:
   (1) Hardware Virtualization.
   (2) Application Virtualization.
   (3) Server Virtualization.
   (4) Network Virtualization.
   (5) Desktop Virtualization.
   (6) Storage Virtualization.

- ## Assignment level advance:

1. Name the components that are used in VMware infrastructure What is benefits of Virtualization?

   (1) ESX Server host is the lowest level of virtualization for physical servers. Using it, the processor, storage, network, etc. are abstracted on the VM.

   (2) VirtualCenter Server (tracking VM-associated images) is the so-called virtual IT environment management console, where all the main settings are located.

   (3) VMware Infrastructure Client is an application that remotely provides communication between a client and user applications.

   (4) VMware Web Access provides access to virtual machines, including remote console.