ASSIGNMENT

MODULE: 7 TERM-2 ====&GT: CCNA-NETWORK FUNDAMENTALS

1. Which of the following messages in the DHCP process are broadcasted? (choose two)

Ans: A. Request

B. Offer

1. Which command would you use to ensure that an ACL does not block web-based TCP traffic ?

Ans: B. Permit tcp any any eq 80

5. Explain LAN and WAN Network

Ans: LAN ( LOCAL AREA NETWORK)

* It is a frequently used network .
* It connects computers through a common communication path, containing a limited local area.
* It is two or more computers connected over a server.
* Two technologies involved in this network are “Ethernet and wi-fi”.
* It ranges up to 2km.
* Transmission speed is very high.
* Example : LAN is networking in home,school,library,laboratory,collage and office etc.
* ADVANTAGES OF LAN
* Privacy- It is a private network, thus no outside regulatory body controls it.
* Giving it privacy
* High speed : It has higher speed around 100 mbps data transfer rate comparatively to WAN
* Supports different transmission mediums- many types of communications transmission medium such as an Ethernet cable, fibre and wireless transmission.
* Inexpensive and simple : It has low cost, installation expansion and maintenance and It installation is easy to use, good scalability.
* DISADVANTAGES OF LAN
* In this network setup costs of installing are high because special software is required to make a server.
* Communication devices like Ethernet cables,switches,hubs,routers,cables are costly.
* Security threat : all data is stored in a single server computer, if it can be accessed by an unauthorised user, can cause serious data.

WAN ( WIDE AREA NETWORK)

* Connects computers ever a large geographical distance
* Range above 50 km
* We use leased-line & Dial-up technology.
* Transmission speed is very low.
* Very high maintenance and cost.
* Example: WAN is the internet.

9. Define network devices and hosts

Ans : Network devices are

* Hub
* Repeater
* Switch
* Router
* Bridge
* Brouter
* NIC
* ISDN
* MODEM
* hub
* A hub sends data to all computers which are connected to it because it cannot recognise the source or intended destination of the data
* It has 2/4/8 ports
* It works at the physical layer (layer-1) of the OSI Model.
* It is half-duplex
* It has single-collision domain
* It is LAN device
* It cannot store Mac addresses.
* It always broadcasts all incoming data to all connected devices.
* Two types of Hub
* Active and passive hub
* Active Hub : Active hubs need Electricity. Hub amplifies signals or Regenerates signals.
* Passive Hub : there is no change in the signal during Transmission and it sends the data as it is .
* No need for a power supply.
* It does not amplify signal , simple receive and forward
* Repeater
* It works at the physical layer (layer-1) of the OSI Model.
* It regenerates your signals.
* LAN device
* Switch ( multiport bridge )
* It is a small device that joins multiple computers together within one local area network.
* It works at the data link layer(layer-2) of the OSI Model.
* It works on ASIC (application-specific integrated circuit).
* It make a CAM table ( Content Accessible memory).
* It is full-duplex
* It maintains a CAM table .
* It first broadcast then unicast & multicast.
* Every port of the switch is a separate collision domain.
* Switch has one broadcast domain
* It has 6/8/16/24/32/48 ports .
* Its speed is slow , 10 mbps wireless and 100 mbps wired .
* Types of switch
* 2 types of switches are
* 1) Manageable
* 2) Unmanageable
* 1) Manageable switch: they are supporting a full suite of layer2,layer 2+ and layer3 switching functionality.
* They can help increase our network security.
* They give us more control over our network security.
* VLAN create in manageable switch
* 1. Store & Forward switch : The switch buffer and verifies each frame before forwarding, it little bit slow but very reliable
* 2. Cut through switch : The switch reads only upto the frame hardware address ( mac address) before starting to forward it, no error checking.
* 3. Fragment free Switch : A method that attempt to retain the benefits of both store and forward and cut through check first 64 bytes.
* Adaptive switching: A method of automatically selecting between the other three modes.
* 2) Unmanageable switch: it allows Ethernet devices to communicate with one another, such as a PC or network printer,and those are typically what we call “pluge and play”.
* No security provides
* Routers
* It is a hardware device used to receive, analyse and move incoming packets to another network.
* It is used to convert the packets to another network interface, drop them,and perform other actions relating to the network.
* It has more capabilities than other network devices,such as a hub or a switch that are only able to perform basic network functions.
* Example, a hub used to transfer data between computers or network devices, but does not analyse or do anything with the data it is transferring.
* By contrast ,routers can analyse the data being sent over a network,change how it is packaged, and send it to another network or over a different network.
* Example : they are used in home networks to share a single internet connection between multiple computers.
* It works on layer3(network layer) of the OSI model.
* It is a WAN device.
* It connects two or more networks.
* It is an internetworking device.
* In a router, every port has its own broadcast domain.
* It is used Ip address, sent in the form of a packet.
* It is maintain Routing table.
* On router has 2/4/8/ ports
* It speeds fast , 10/100/1 gbps.
* Two types of router
* 1. Fix router
* 2. Modular router
* Bridge
* It is Intelligent device work on mac address
* It works on layer 2 device ( data link layer) of the OSI model .
* It used to connect multiple network segments or LAN segments.
* It reduces the amount of traffic on a LAN by dividing it into two segments.
* It is filter data traffic
* It has two collision domain
* Brouter
* We can say short for bridge Router, a brouter is a networking device that serves as both a bridge and a router.

1. Explain Network Topologies

Ans: network Topologies : Physical arrangement of network computer or devices is called

Topologies.

* Network topology is the physical layout of computers,cables,switches,routers,and other components of a network.
* BUS TOPOLOGY
* All computers and network devices are connected to a single cable called a “ Bus topology”.
* Bus topology has a single central cable that serves as the shared communication medium for all network devices or all computers.
* Each devices is connected to this cable via tapor a connector ( tea connector or terminator )
* Advantages of Bus topology
* 1. It used less cabling
* 2. It easy to install
* 3. It is less expansive
* 4. Small network
* 5. Low security
* Ring topology
* In this topology all devices connected to circular data path, it called ring topology.