**What is switching?**

**Switching – this is the process of moving frame from one device to another within local area network this is done at layer 2 (data link layer)**

**What are basic’s of switch?**

* **Work on full duplex**
* **By default all switch port is up/up’**
* **1 broadcast domain**
* **Switch does not have port 0/0**
* **Switch perform forwarding on the basis of table – CAM table (content addressable memory)**
* **MAC table – media access control address**

**What is switch operation and what are types of switch operation?**

**Switch operation – switch perform some given action provide device to device communication.**

* **Address learning**
* **Forwarding**
* **Loop avoidance (STP)**

**What all are structure of MAC table?**

* **VLAN**
* **MAC address**
* **Type**
* **Interface**

**Address learning- switch learns the source mac address of frame and store the entry inside mac table. The entry is saved inside mac table along with VLAN (1) type (dynamic and static) and port no.**

**MAC aging time – the time defines the ages of dynamically learned inside cam table by default time 300 sec (5 min)**

**Forwarding – this is the process of forwarding frame after verifying the mac table. forwarding the has multiple type.**

**They are three type of flooding**

* **Flooding**
* **Unknown unicast flooding**
* **Unicast flooding**

**Flooding – switch has received a frame with destination mac address as broadcast (ffff.ffff.ffff) switch forwards the frame out all active port. This is called flooding.**

**Unknown unicast flooding- switch has received a frame with destination mac address is unicast but switch does not have any matchable entry inside mac table, then forward the frame out of all active port.**

**Unicast flooding- switch has received a frame with destination mac address and switch has matchable entry inside mac table then switch forward the frame out from single port.**

**Loop avoidance – switch avoid loop by default STP protocol is enable on switch to avoid loop. STP keeps 1link in forwarding state and put all other link blocking state to avoid loop.**

**What all are type of flooding?**

**What is CDP. What all are type ?**

**CDP- cisco discovery protocol**

* **Layer 2 protocol**
* **Cisco proprietary**
* **It is used to share information about other directly connected cisco device**
* **Device id**
* **Local interface**
* **Hold down 180 sec**
* **Capability -L2/L3**
* **Port id -0/7**
* **IP address**
* **Hello time 60 sec**
* **CDP sends message every 60 sec to advertise own info.**

**LLDP- link layer discovery protocol**

* **Layer 2**
* **By default disable**
* **Open standard**

**By default hello time 30 sec**

**Hold down 120 sec.**

**VLAN - virtual local area network**

**this is used to devide large broadcast domain into small broadcast domain**

**called VLAN**

**In other words we say VLAN is a logical broadcast domain**

**by default vlan 1 is creted**

**by deafult all port in vlan 1**

**by default vlan 1 is native vlan**

**Range of vlan**

**Standard range 1 to 1005**

**0 and 1002-1005 are reserved**

**extended range 1006 4095**

**4095 is reserved**

**how to create Vlan**

**config# vlan 10**

**exit**

**how to change the name of vlan**

**config#vlan 10**

**# name khus**

**exit**

**how to assign interface into vlan**

**config# int f0/1**

**# switchport access vlan 10**

**exit**

**how to delete vlan**

**config# no vlan 10**

**exit**