Ethernet Switching - Flowchart Summary

1. Ethernet Frames Flowchart

Ethernet Frames:

   -> LLC Sublayer: Identifies protocol used.

   -> MAC Sublayer: Manages encapsulation, media access, MAC address.

     -> Encapsulation: Includes source & destination MAC, FCS (error checking).

2. MAC Address Types Flowchart

MAC Address Types:

   -> Unicast: Unique communication between two devices.

   -> Broadcast (FF-FF-FF-FF-FF-FF): Sent to all devices on LAN.

   -> Multicast (01-00-5E for IPv4): Sent to specific group on LAN.

3. MAC Address Table in Switches Flowchart

Switch MAC Address Table:

   -> Learning: Adds source MAC and port to table.

   -> Forwarding:

     -> If match found: Forward to specific port.

     -> If no match: Flood to all ports (except source).

4. Switching Methods Flowchart

Switching Methods:

   -> Store-and-Forward: Reads entire frame, checks for errors.

   -> Cut-Through:

     -> Fast-Forward: Minimal delay, may pass errors.

     -> Fragment-Free: Checks first 64 bytes, balances speed and integrity.