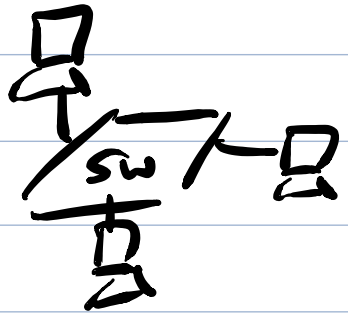
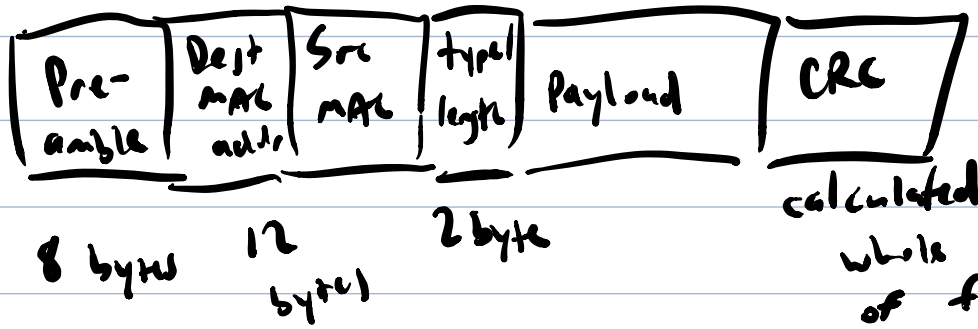
Ethernet 802.3

Topology: bus, star ✓



Frame format:



Connectionless (no handshaking b/w sender/receiver)

Unreliable communication (no rdt)

Full-duplex (later)

MAC → CSMA/CD

Covers link layer & phy. layer

100 BASE-TX ← spec. about signalling/wires of Phy layer

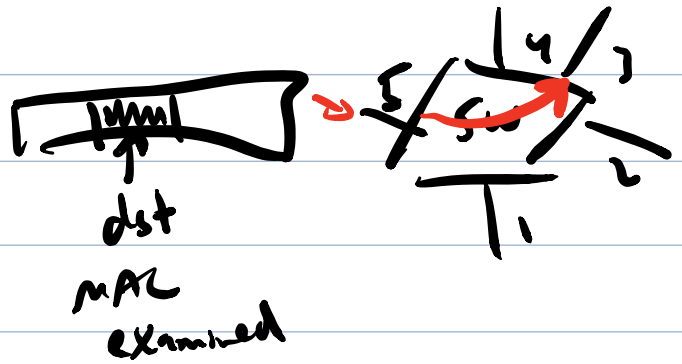
(not modulating signal (long distance freq not altered)

{ twisted pair cable (FISIB = fibre optic)

is the capacity of link in Mbps

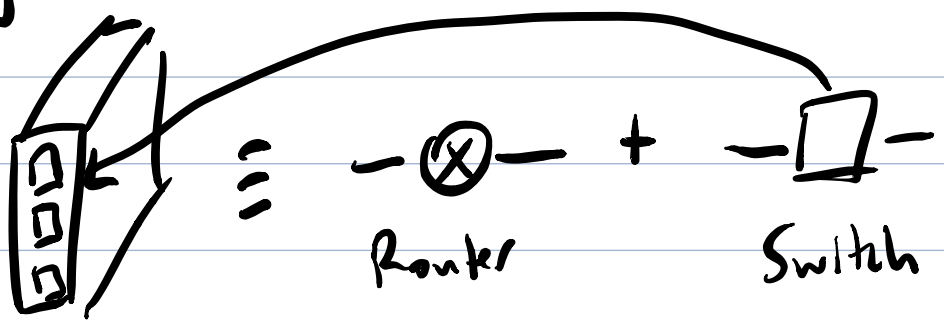
5.4(c): Switches

- link-layer device: active role
  - ↳ store & forward Eth frames (main job!)
  - ↳ check dst MAC addr & forward to it intf

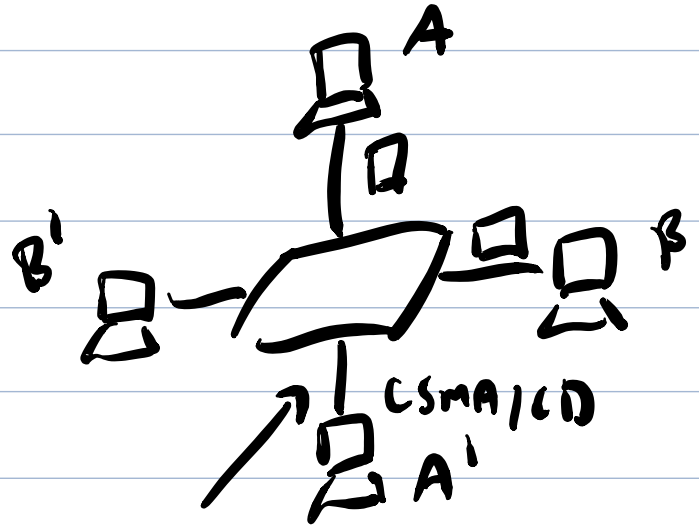


- can be forwarded to > 1 intf!

- transparent: hosts do not know about existence of the switch
  ↳ no MAC address! (does not modify frame)
- plug-and-play, self-learning
  ↳ no configuration
- ISP modem:



- hosts directly connect to switch



B can send to B' and A to A' simultaneously
⇒ Multiple tx to/from switch w/ collision

its own collision domain

A collision domain is any segment in a network over which any two devices can have a

collision.

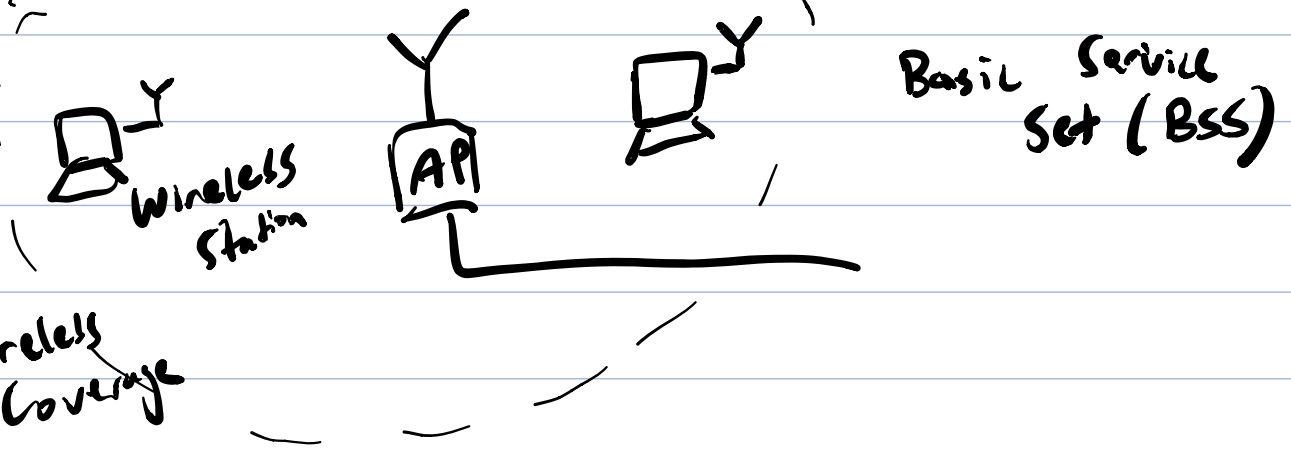
Switch forwarding table: each switch builds its own switching table.

Map MAC addr ↔ intf id ↔ ttl

MAC_A 1 60

- builds up as frames received
- entries indexed by dest MAC
- floods frame if no record exists
- adv: fast, plg and play
- dis: broadcast storm, large sw table for large network

WLAN ≡ Wi-Fi ≡ IEEE 802.11



- the main building unit of WLAN is the BSS
- BSS consists of AP and wireless stations
- Wireless home network usually consists of an AP connected to a router — extended BSS

(EBSS) to provide Internet connectivity