



القلادة أكاديمي



القلادة القابضة



سيسكو في 6 ساعات



الكورس

يختصر أكثر من مائة ساعة
يركز على احتياجات المهندسين
في سوق العمل

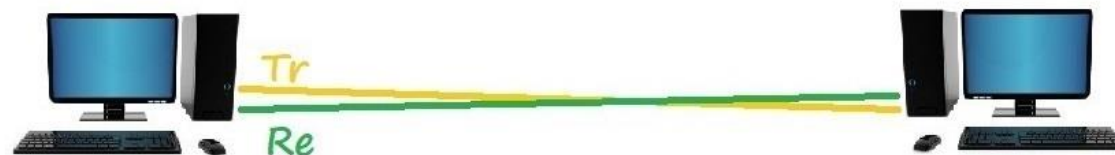
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Second Edition
حقوق النشر والترجمة محفوظة

- Network devices

- Why Networking ?



- NIC
(Network interface Card)

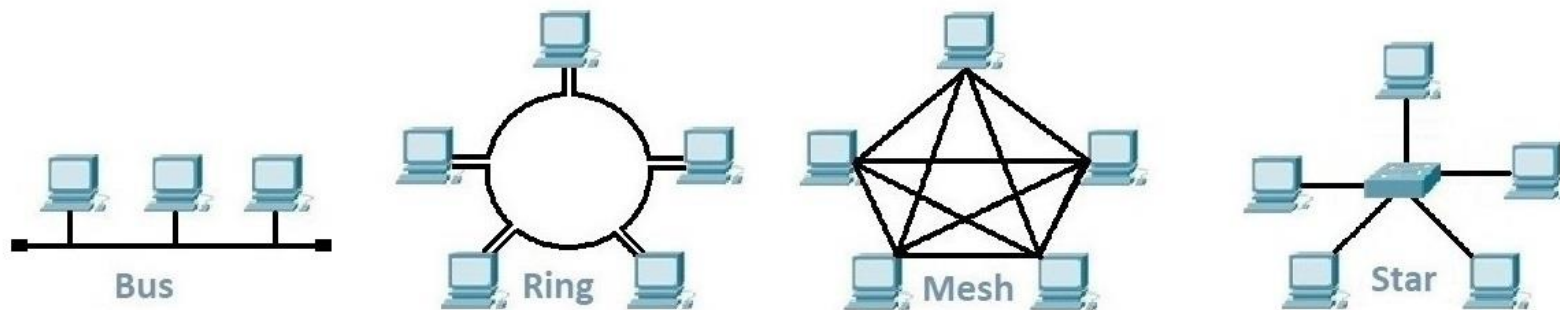


Mac Address
(Media Access Control)
00-40-96-A1-23-BD

Dell Co : 00-14-22-XX-XX-XX
Nortel : 00-04-DC-XX-XX-XX
Cisco : 00-40-96-XX-XX-XX

- Network devices

- Networks Topology



- Network devices

- HUB



8 Port

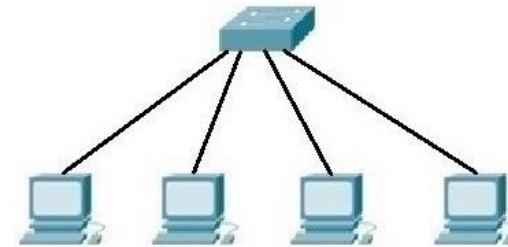
Speed 10 Mbps

Half-duplex (Send or Received)

Broadcast Message

CSMA/CD

(Carrier Sense Multiple Access/Collision Prevention)

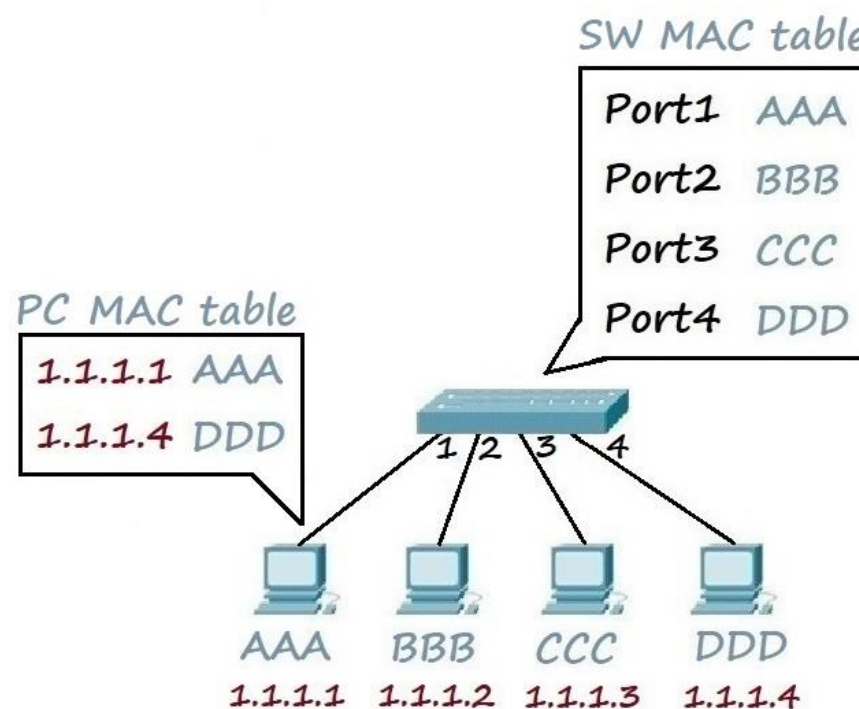


- Network devices

- Switch



24 or 48 Ports , 2 Uplink Port
 Speed 100 Mbps , 1000Mbps
 Console port and auxiliary (AUX) port
 Full-duplex (Send or Received)
 Unicast Message , Broadcast Message
 ARP (Address Resolution Protocol)



- Switch

Power ON



SYST = System
 RPS = Redundant Power
 STAT = Port Status
 DUPLX = Port Duplex
 SPEED = Port Speed



Blocking (30 s)
 Listening (15 s)
 Learning (Record Mac)
 Forwarding (Send Data)

Store and forwarding (Mac+IP+Data) Defult
 Fragment-Free (Mac+IP)
 Cut-through (Mac)

Stack Cable



Fiber Cable



GBIC
 (Gigaabit interface Converter)

ZX	LX	SX	T
100Km	10Km	500m	100m

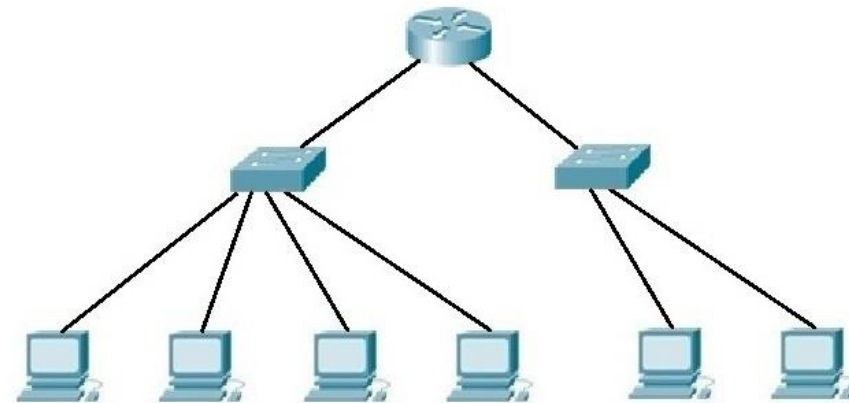
CAT Cable

Ethernet 10M
 Fast Ethernet 100M
 GiGa Ethernet 1000M

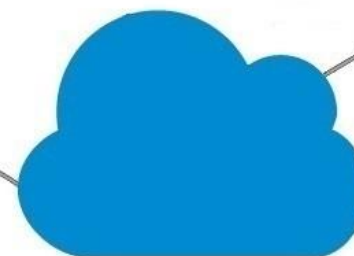
- Network devices
- Router



2 Port Ethernet , Speed 100 Mbps
2 Port Serial T1 , Speed 1.5 Mbps
Console port , AUX port
Prevents Broadcast
Rip , Eigrp , Ospf , ... Protocol



- Router



Serial interfaces



Circuit Sw	Modem 56Kbps
	ISDN 128 Kbps
Leased Line	T1 1.5 Mbps
	E1 2 Mbps
Packet Sw	Frame Relay 4 Mbps
	ATM 155 Mbps

- Ethernet Cable

UTP (unshielded twisted pair)

Cat 1 , Voice

Cat 2 , 4 Mbps , 100m

Cat 3 , 10 Mbps , 100m

Cat 4 , 16 Mbps , 100m

Cat 5e , 100 Mbps , 100m

Cat 6 , 1 Gbps , 100m

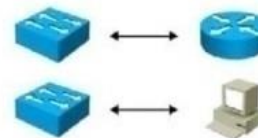
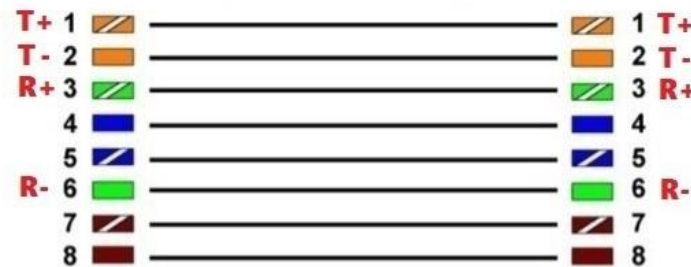
Cat 6a , 10 Gbps , 100m



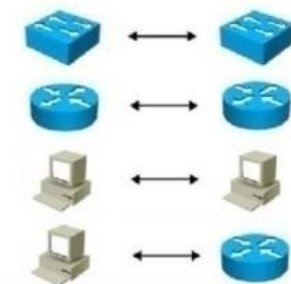
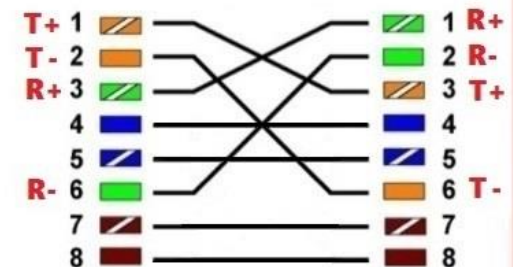
STP (shielded twisted pair)



Straight Cable

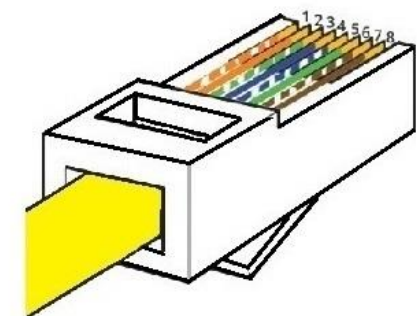
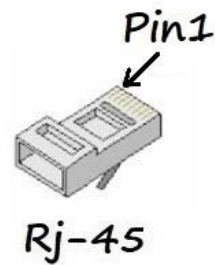
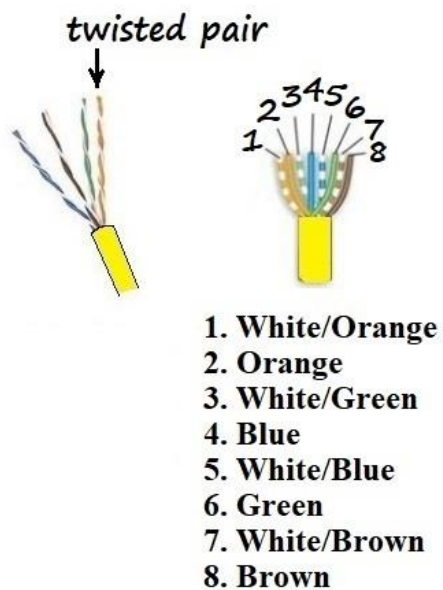


Crossover Cable

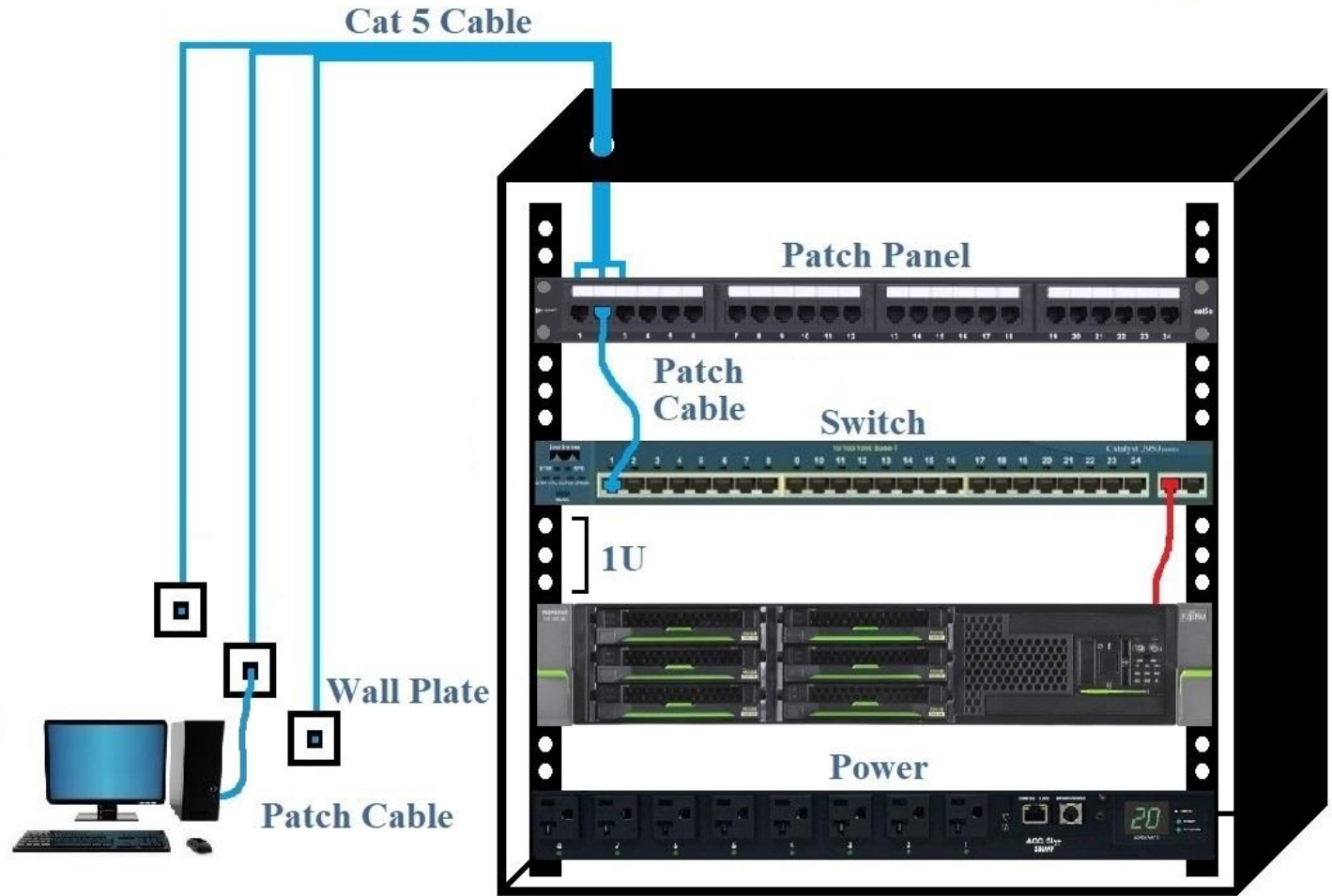


- Network devices

- Ethernet Cable

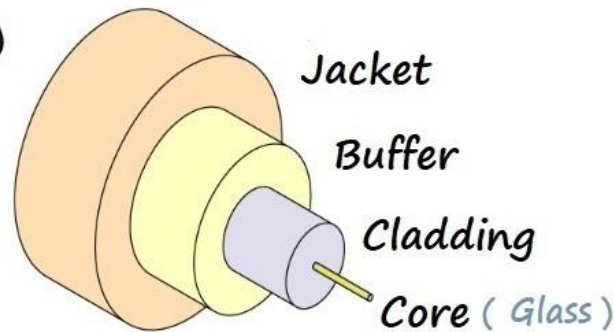


- Cabinet



- Network devices
- Fiber Optic Cable

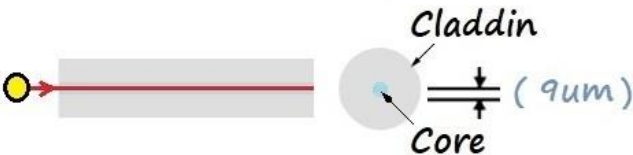
- High Bandwidth (10Gbps)
- Long Distance (70Km)
- Lower Attenuation



Fiber Type

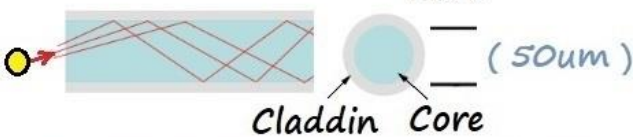
- Single mode

Distance 70km , Laser



- multi mode

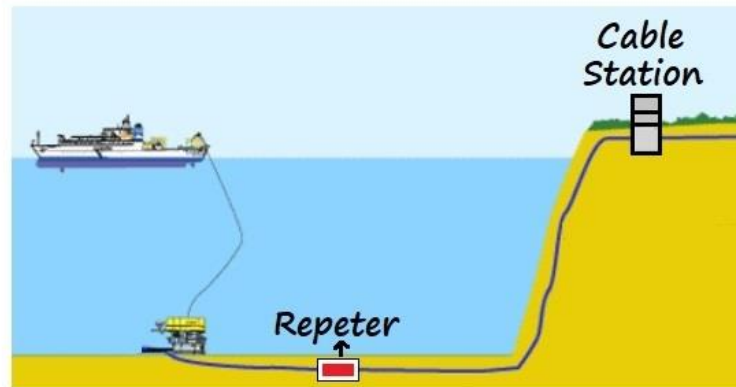
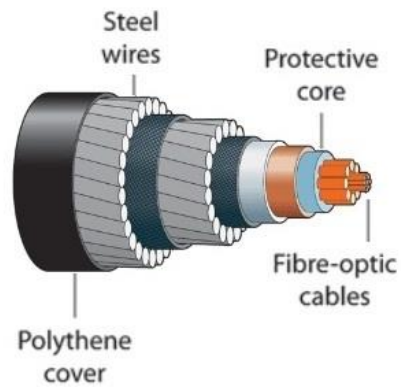
Distance 2km , LED



Connectors Type

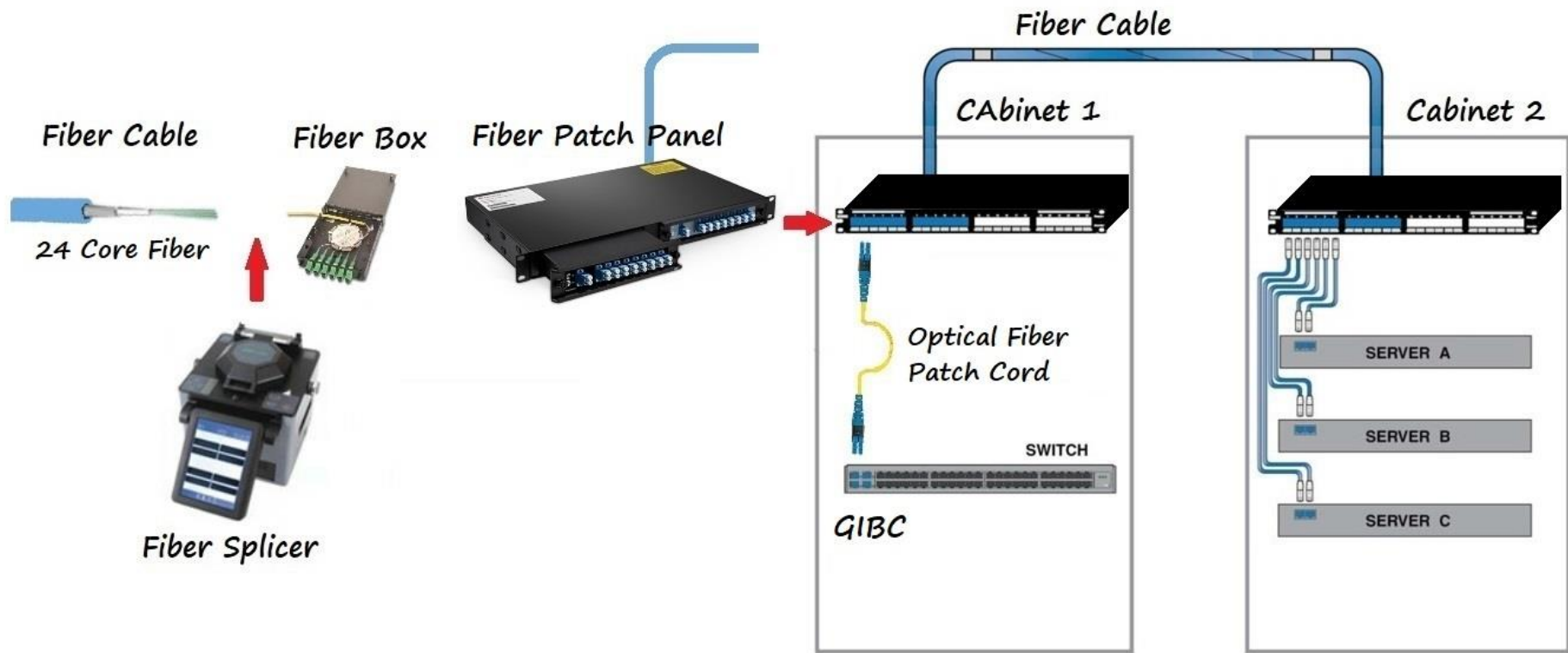


- Network devices
- The Undersea Cables



Connect the World

- Network devices



- Wireless

WIFI (Wireless - fidelity)



- b 11 Mbps
- g 54 Mbps
- n 300 Mbps
- ac 1300 Mbps

GSM (Global System for Mobile)



- G1 14 kbps
- G2 56 kbps
- G3 384 kbps
- G4 7.2-100 Mbps (WiMAX and LTE)

Satellite



- Speed 1 - 20 Mbps
- Delay 240 ms

