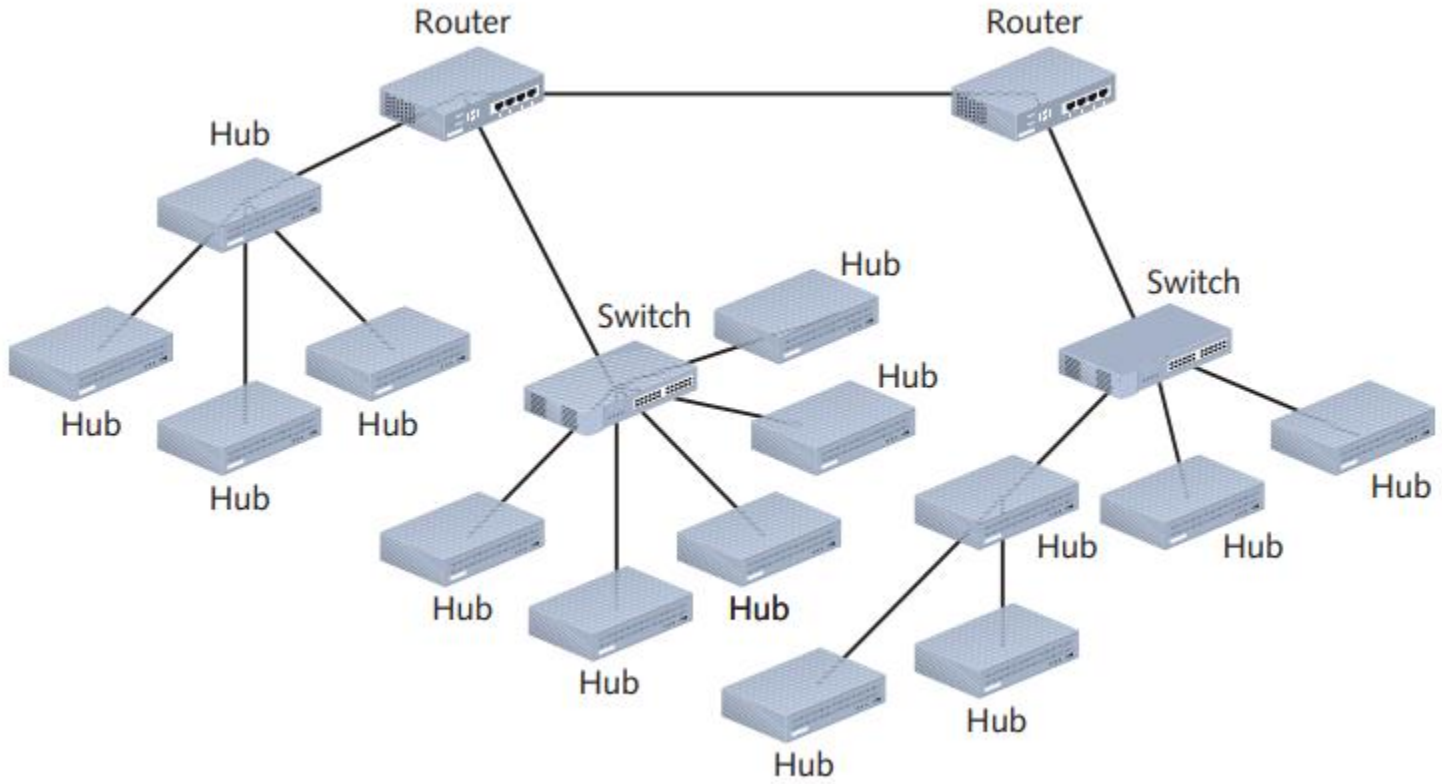

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HUB

- Small devices
- Inexpensive
- Passive or Active
- Signal regeneration in Active Hubs
- Inefficient – as it can handle only one forwarding at a time
- half duplex communications

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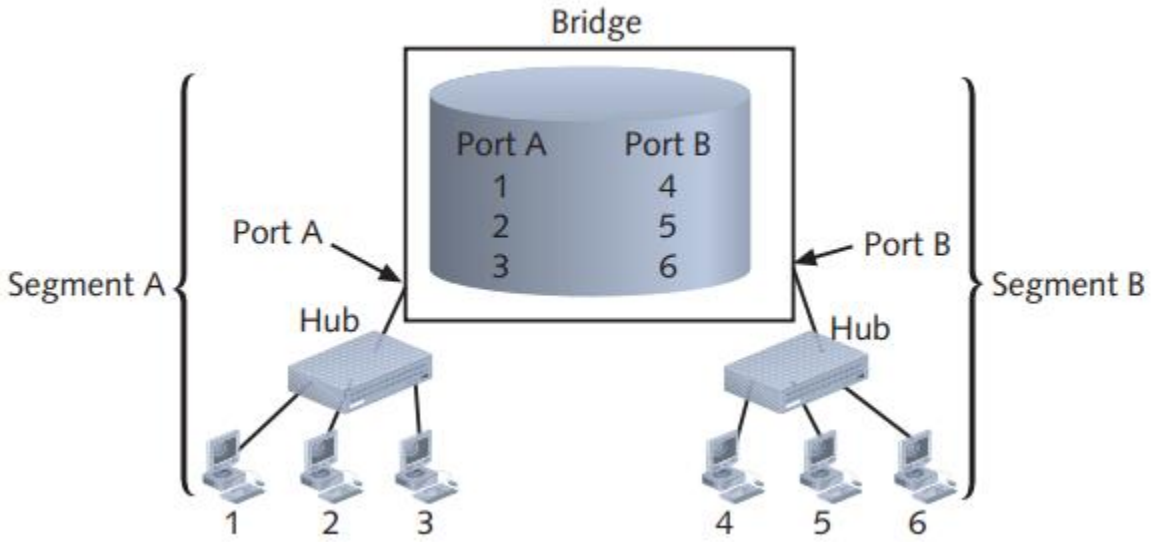
Bridge



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Switch

- Resembles Hub
- Can handles many connections at same time
- Many switches can be interconnected to form larger networks
- Forwards data based on MAC addresses
- Channels data between ports
- Reduces collision by channelization
- full-duplex connections
- Micro-segmentation is possible in some switches

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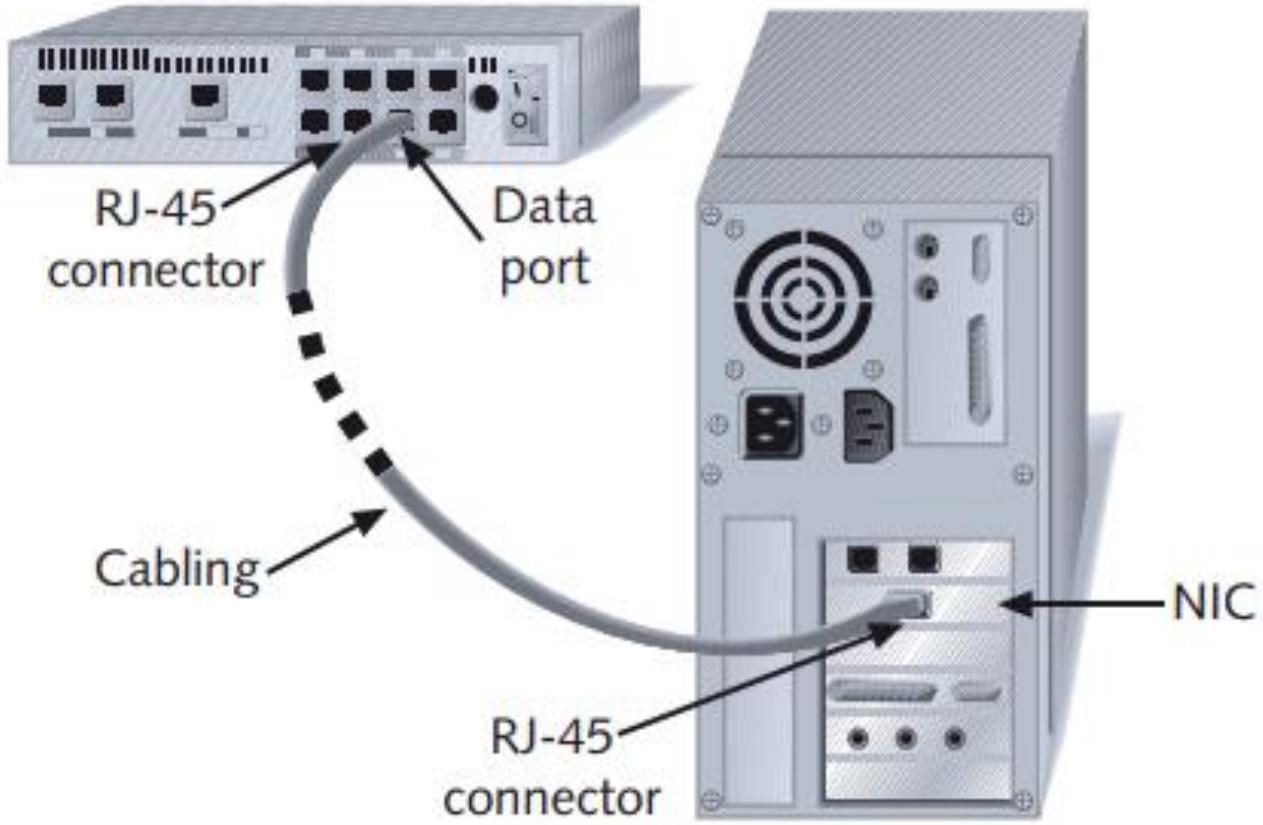
NIC, RJ45



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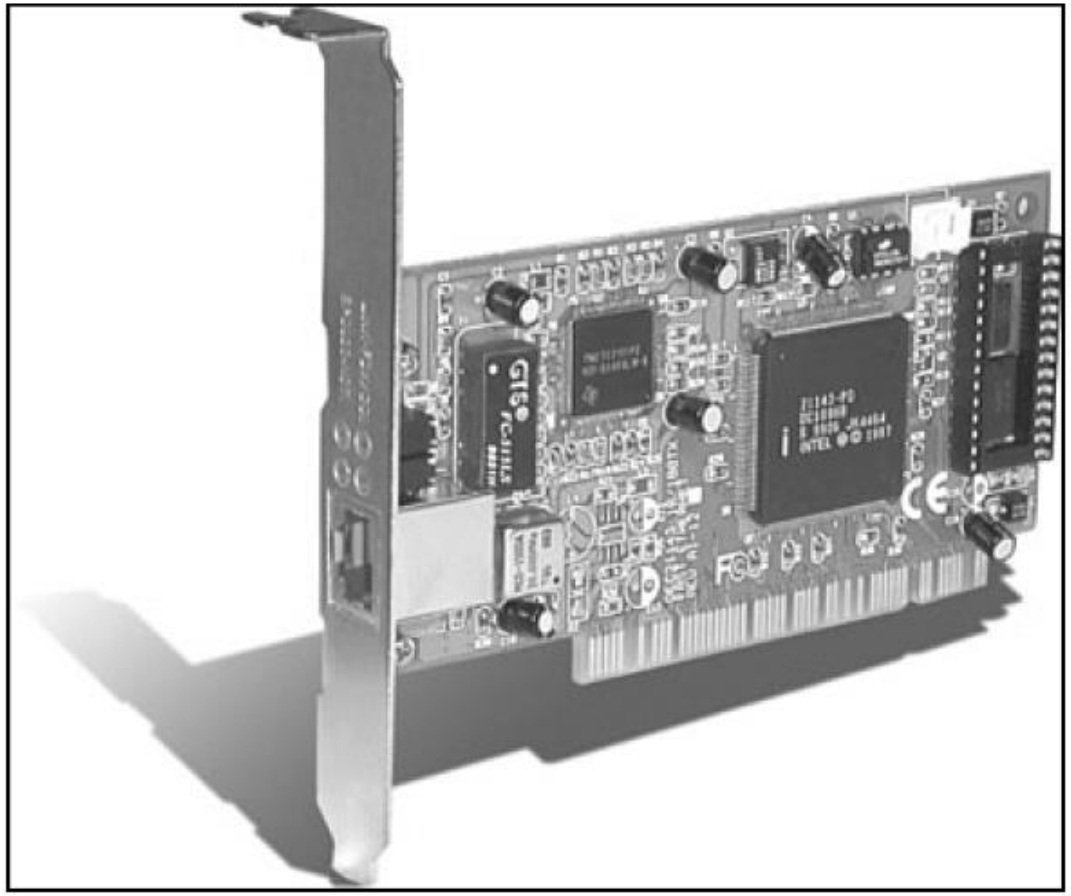
NIC



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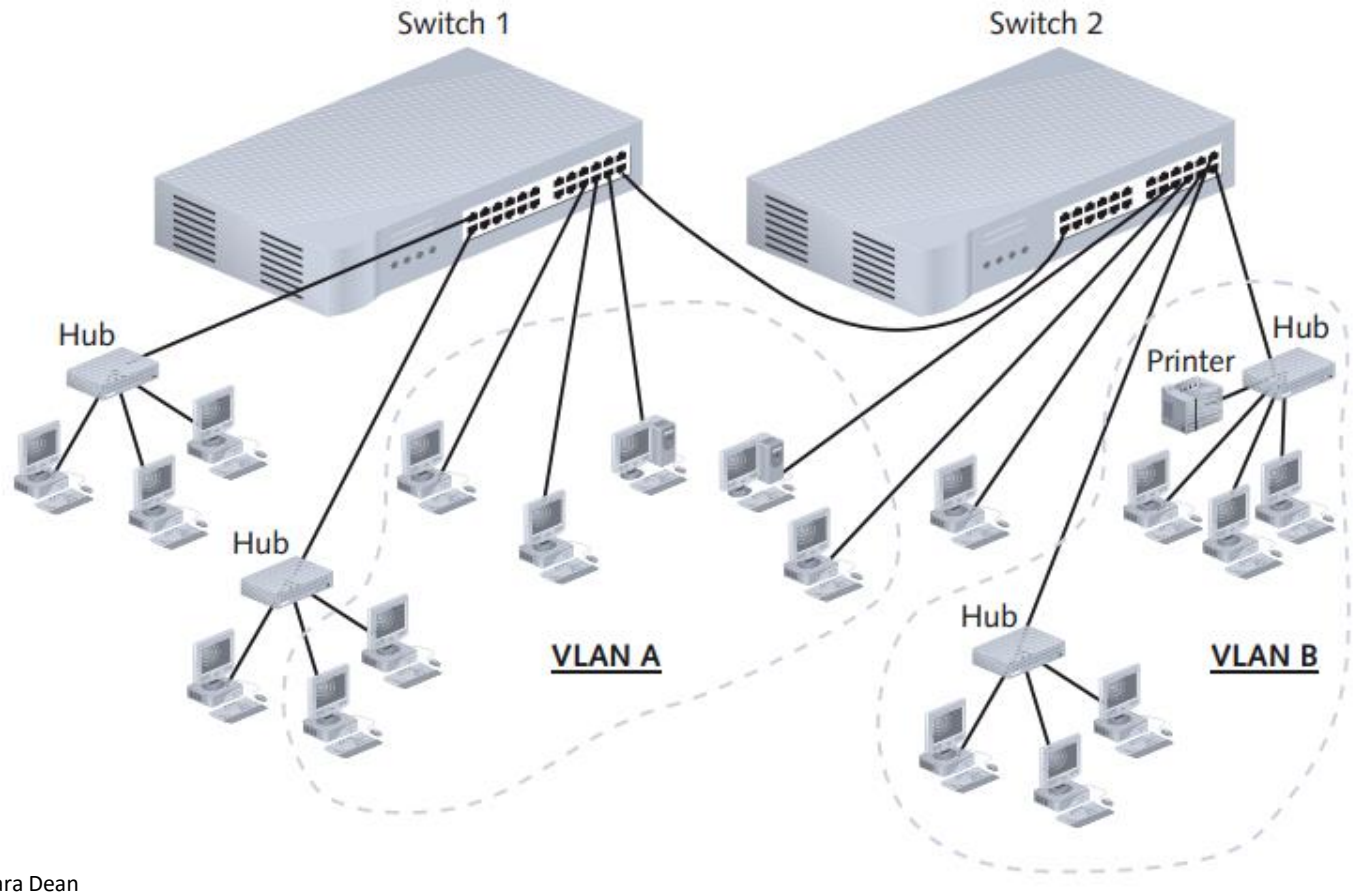
VLAN



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Routers

Interconnects LAN
Forwards data based on IP addresses
Routing Protocols are used for communications between routers

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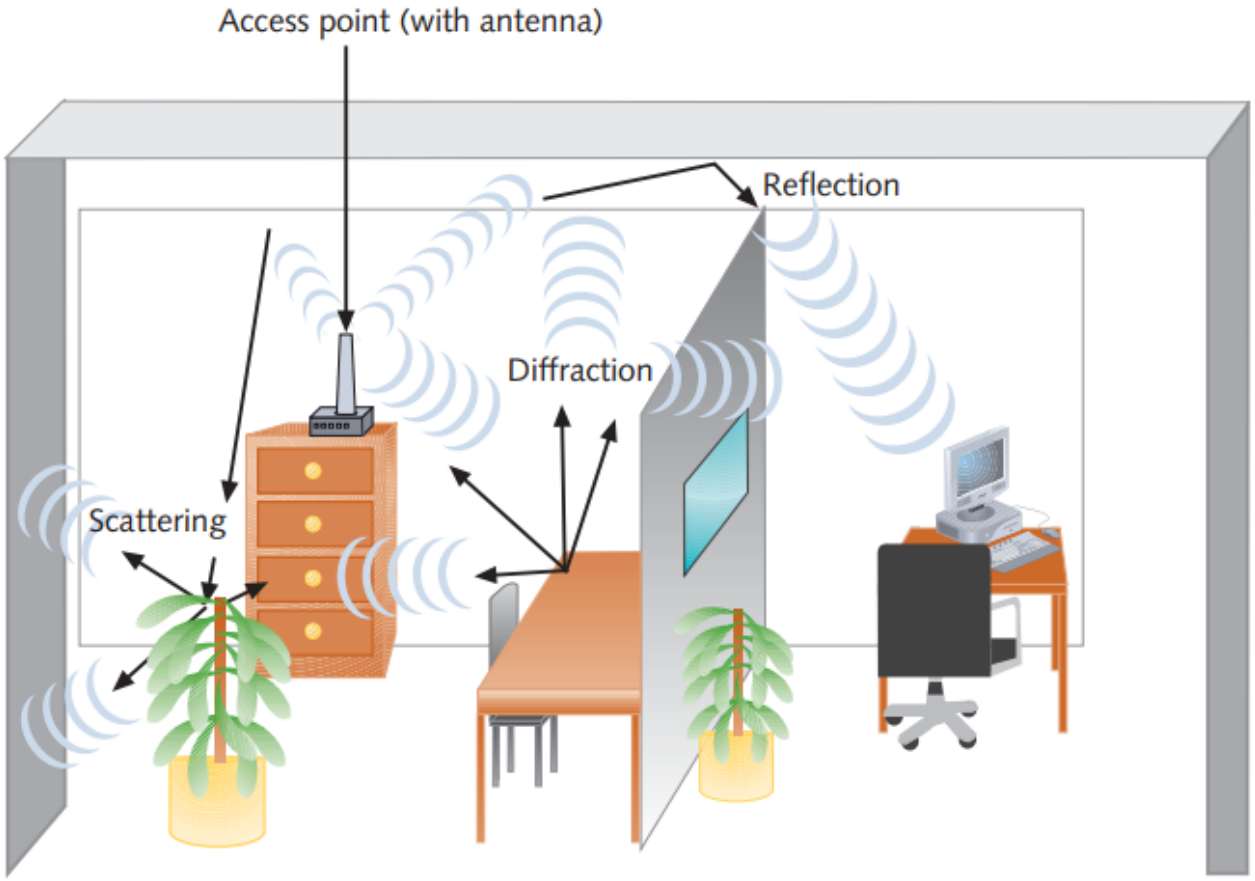
Wi-Fi



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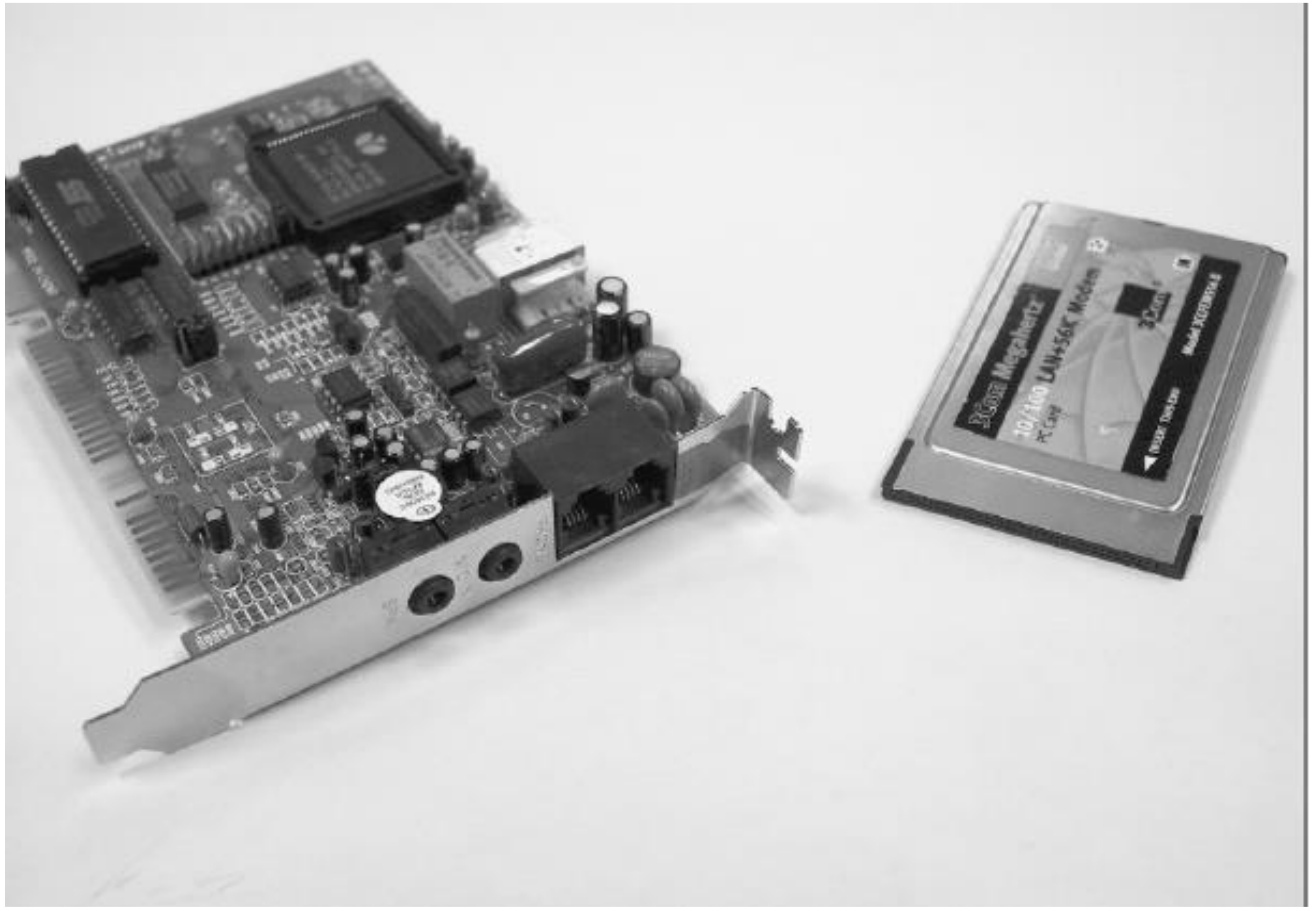
- To provide wireless connection to clients
- Can be secured or not
- Provides flexibility and extension for networks
- Distance coverage based on spec

Modem



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- Does MOdulation and DEModulation
- Digital – Analog Conversion
- Modem speed based on UART chip (Universal Asynchronous Reciever/Transmitter)

UART Chip	Speed (bps)
8250	9,600
16450	115,200
16550	115,200
16650	430,800
16750	921,600
16950	921,600

- ifconfig
- ping
- traceroute
- netstat
- nslookup
- dig
- ps
- bg
- fg
- passwd
- top

Ls
Ls –l , ls –a ls –al
Cwd, pwd
Cd ..
Mkdir
Rmdir

man ls

ipconfig