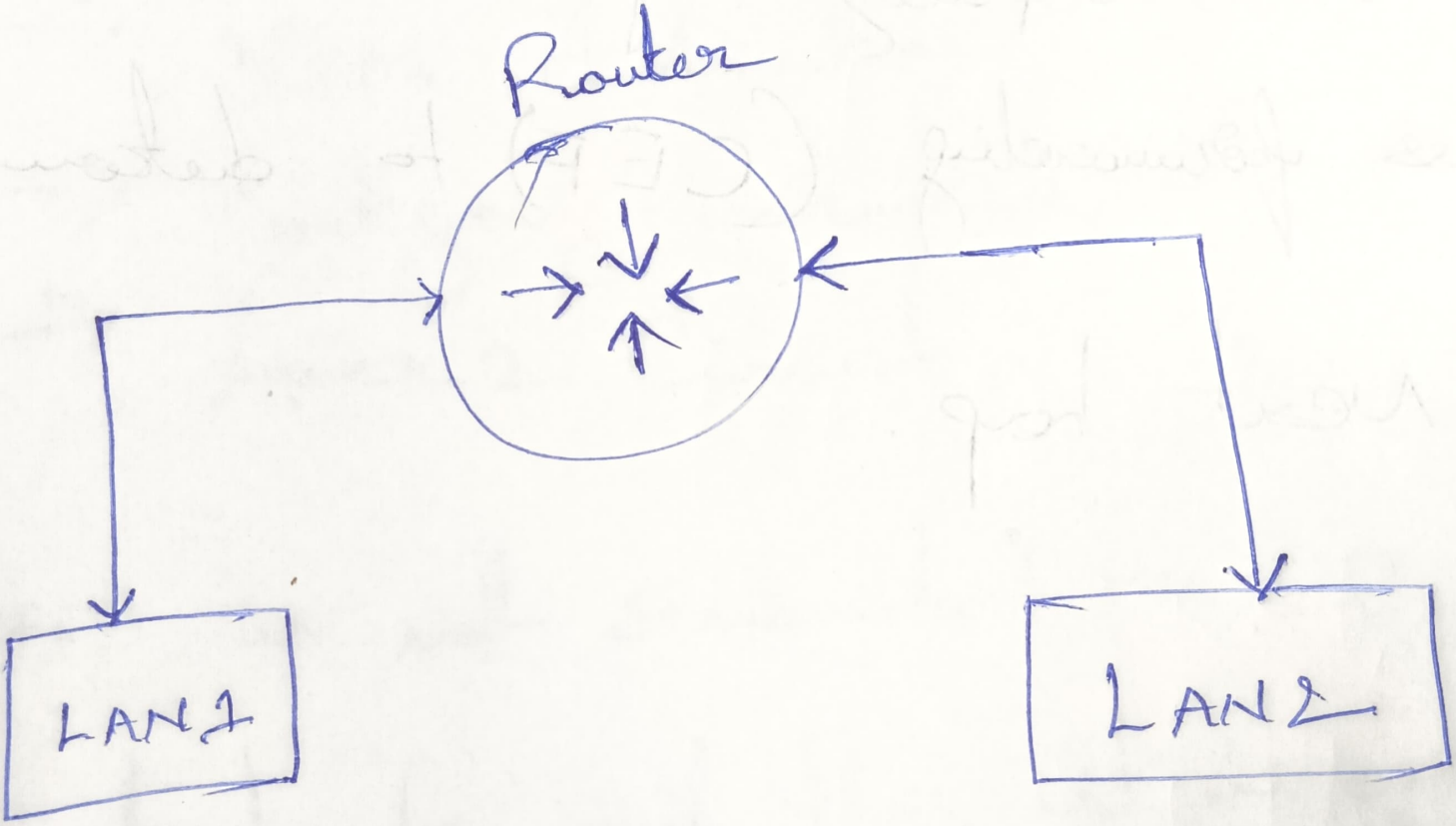
Router :



→ Router Contains OS, internal processor and memory

→ wired vs wireless

→ Some are physical & logical (virtual)

→ Interprets or works based on IP addresses.

→ determines the best path for data to travel from source to destination (@) between two networks.

→ Routing protocols are used to Calculate the most efficient way.

→ Router Can filter/block a broadcast domain traffic

→ " " monitor & filter traffic

→ ports of router, 3 port.

→ Console → LAN port → WAN port

⇒ ex: fastethernet → LAN ports

administrative access → Console

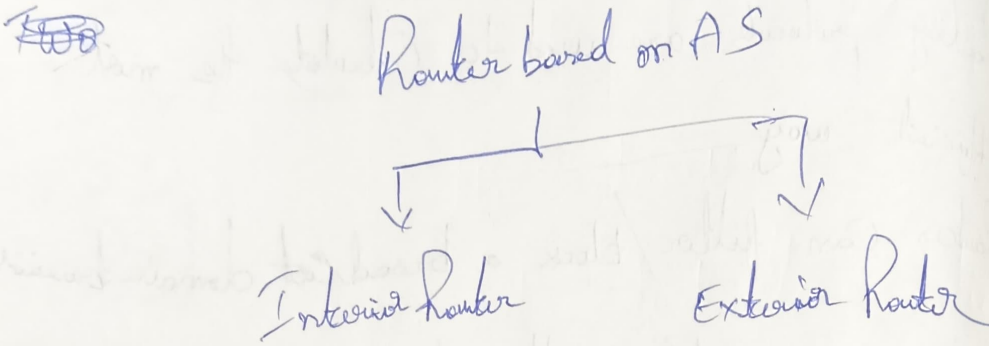
Serial ports → WAN ports the Connects to different networks.

→ No Router No Internet.

1) AS: it a ~~independent~~ Independent

Collect of networks that were supervised and
manged by single administrative entity like
ISP (Internet Service provider)

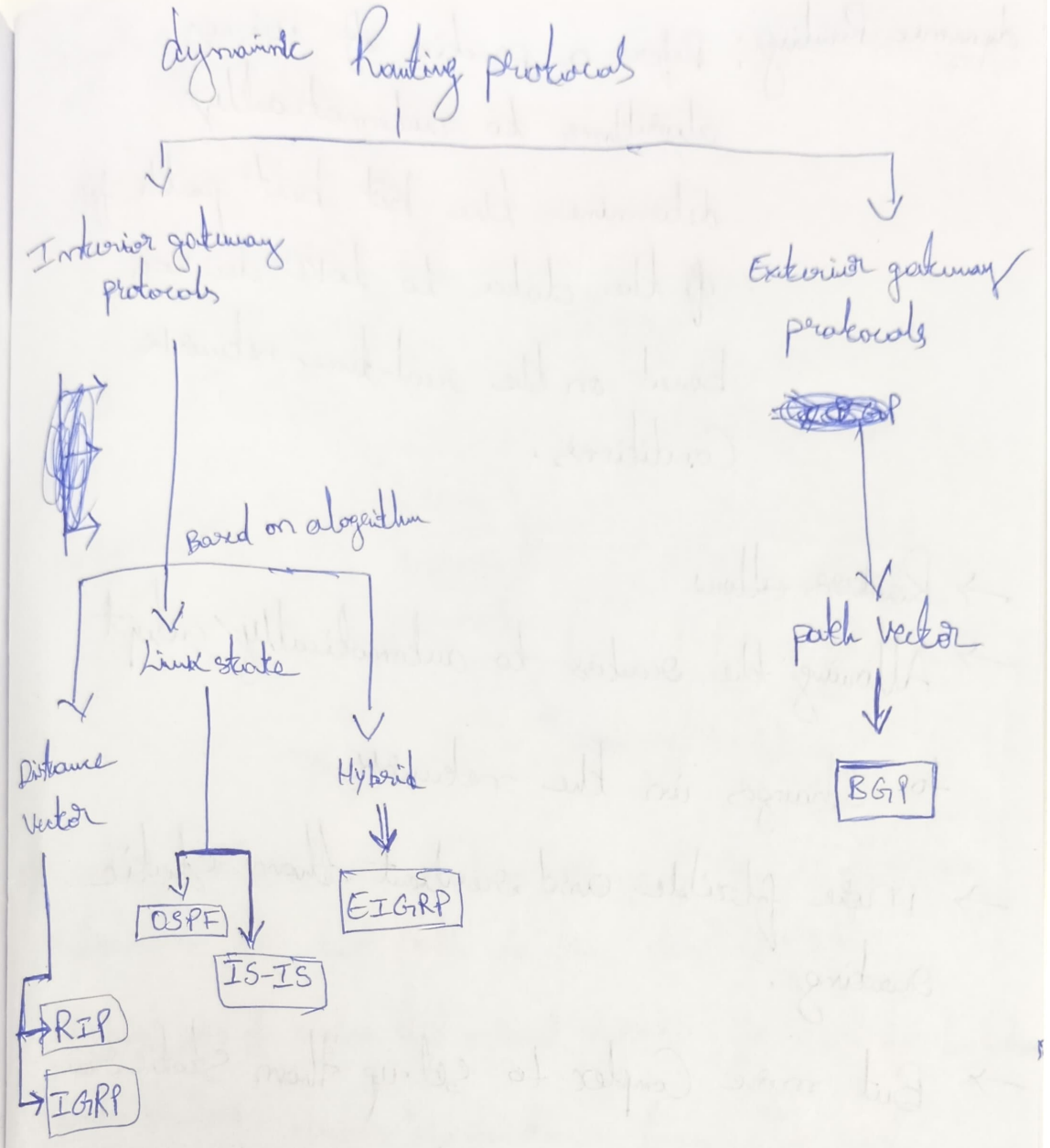
ASN ⇒ 16 bit identifier Number

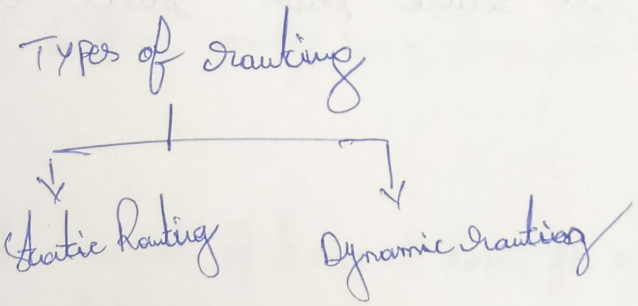


Interior Router are used to deliver the IP packet
& within the a Autonomus System.

Exterior Routers: are used to deliver the IP
packet across the two different Autonomous
Systems.

⇒ Routing protocols are the set of rules and
algorithms that enables routers to exchange
Information about the network and choose
the best path for data to be transmitted





Static: is used in small networks.

Static routing refers to the pratice of manually Configuring a router to forward the data packets to a specific destinations through predetermined paths.

Benefits:

→ performance → Simplicity → Security
→ Predictability → Reliability

dynamic Routing: Refers a practice of using algorithms to automatically determine the ~~best~~ best path for the data to take decision based on the real-time network conditions.

→ ~~Routers allow~~

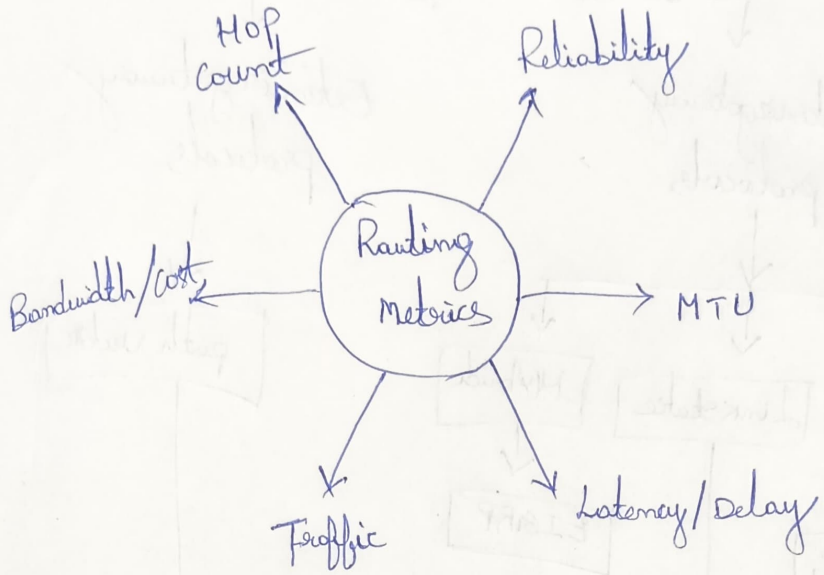
→ Allowing the routers to automatically adapt to changes in the network.

→ more flexible and resilient than static routing.

→ But more complex to set-up than static routing

→ Less secure that static routing.

Routing Metrics



* Routing metrics are values used by routers to determine the best path to the destination.

Hop Count: No. of routers that a packet is passes, to reach the destination

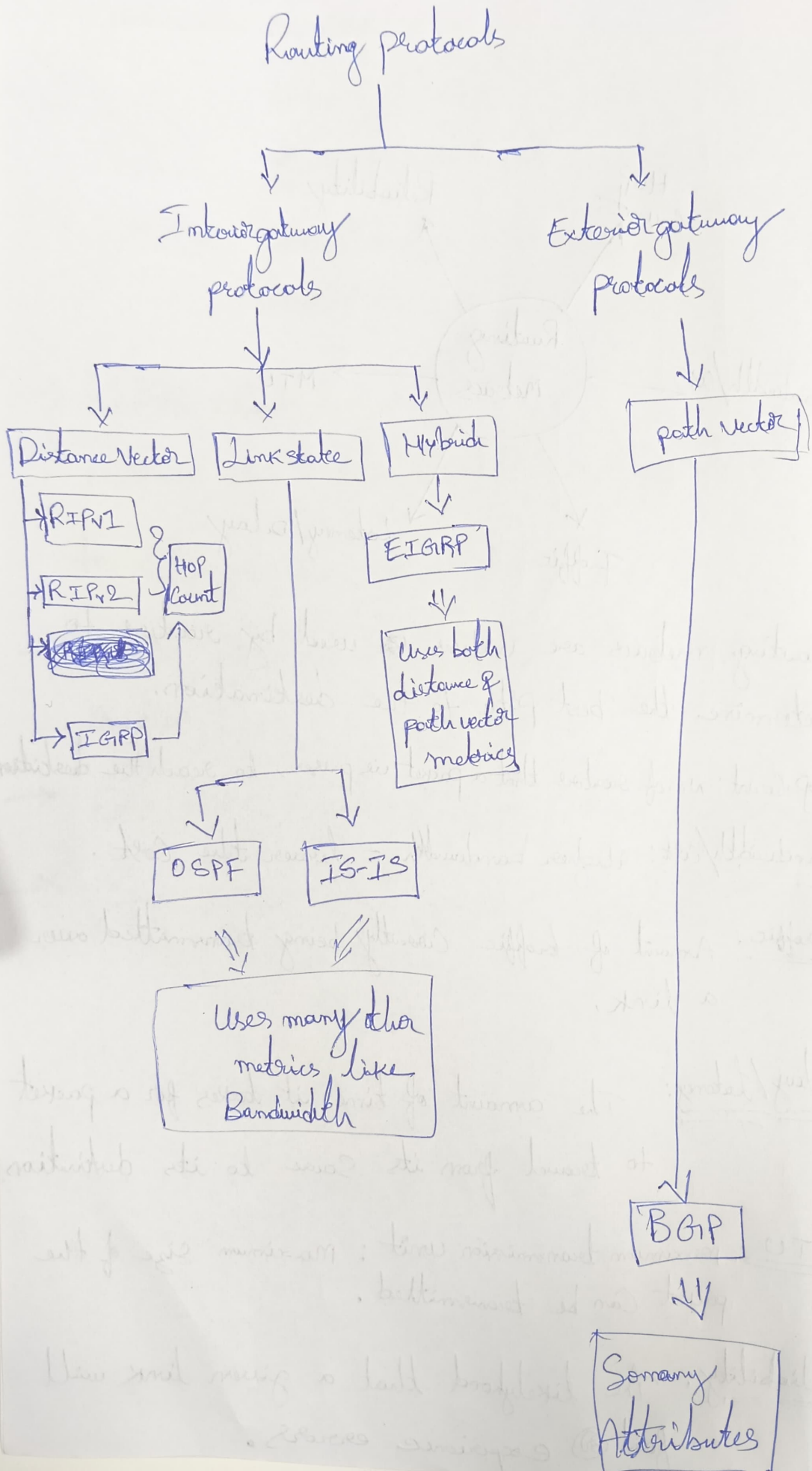
Bandwidth/Cost: Higher bandwidth = lower the cost.

Traffic: Amount of traffic Cooently being transmitted over a link.

delay/Latency: The amount of time it takes for a packet to travel from its Sauce to its destination

MTU: Maximum transmission unit: Maximum size of the packet Can be transmitted.

Reliability: The likelyhood that a given link will fail @ experience errors.


Routing protocols
Interior gateway protocols
Exterior gateway protocols
Distance Vector
Link state
Hybrid
path vector
RIPv1
RIPv2
IGRP
Hop count
EIGRP
Uses both distance & path vector metrics
OSPF
IS-IS
Uses many other metrics like Bandwidth
BGP
Summary Attributes