Module 3: Network Module 3 PT6

Network Layer - Layer 3 - Packets - Day 4

Review

Static or Dynamic are two ways for routers to get information from/about devices.
Static - moving from one location to another, physically connecting routers.
Dynamic - automatically reroute traffic to another router (floor, broadcast to a network), to send traffic to.

What routing protocols?

- Distance Vector
    - Neighbor
    - Rumor / Second Hand
    - “Hops”
    - RIP / IGRP
- Link State
    - Actual
    - Everybody
    - CPU/RAM
    - Metrics
        - Hops, Bandwidth, Cost
    - OSPF (Open Shortest Path First), IS/IS
- Hybrid
    - EIGRP
- Exterior
    - BGP (Border Gateway Protocol)
        - Internet

Vocabulary and Links

Nat Explained
NAT - SNAT, DNAT, PAT

NAT (Network Address Translation)

Private Addresses

Class A
10.x.x.x 255.0.0.0 /8
Class B
172.16-17.31.x 255.255.0.0 /16
Class C
192.168.x.x 255.255.255.0 /24
APIPA (Windows)
169.254.x.x 255.255.0.0 /16

Engineers developed private IP addresses and network address translation (NAT).
Very first computer (1.0.0.1)

Static NAT (Static Network Address Translation) - Dedicated device - deals more with incoming traffic

Dynamic NAT (Dynamic Network Address Translation) - Pool of available IP address

- IP masquerading - Mask IP addresses
- NAT = Port Number
- Access gate interface - Physical
- Dest IP SRC IP
- Tied to a port number, makes each session unique.
    - SRC 10.10.10.4 : 80 (HTTP) -> NAT -> SRC 10.10.10.4 : 8000 (Association with the original SRC IP address in a table router.)

PAT (Port Address Translation) - 1 IP address used

Port Forwarding - Deals with incoming traffic.

- PAT reversed
    - All traffic funneled into a dedicated port

Border Router

- Router at the boundary of the internal and external network