NETWORK FUNDAMENTALS

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DYNAMIC ROUTING

- In dynamic we configure router with KNOWN NETWORK ID's
- TYPES OF DYNAMIC ROUTING PROTOCOLS:
- DISTANCE VECTOR PROTOCOL
- - RIP (Routing Information Protocol)
- LINK STATE PROTOCOL
- - OSPF (Open Shortest Path First)
- ADVANCED DISTANCE VECTOR PROTOCOL
- - EIGRP (Enhanced Interior Gateway Protocol)
- All the above routing protocols will identify best path differently.
- -Based on the purpose, we use any one of routing protocol

WORKING OF PROTOCOLS
RIP (ROUTING INFORMATION PROTOCOL)

- Metric - Hop Count
- Best Path - Minimum Hop Count will be considered as best path.
- Its an old protocol and not commonly used now a days due to false positive.

OSPF (OPEN SHORTEST PATH FIRST)

- Metric - Bandwidth
- Bandwidth is the channel width, (Like roadsize, bigger the road size faster we can travel) more the bandwidth, speed of internet will be more.
- Best Path - Maximum Bandwidth is considered as best path
- Used commonly for router configuration
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EIGRP (ENHANCED INTERIOR GATEWAY PROTOCOL)

- Metric - Bandwidth & Delay
- Delay is the time taken for the packet to reach the destination and come back.
- Best Path - Maximum Bandwidth & Minimum delay is best path
- Most commonly used routing protocol.

CONFIGURATION COMMANDS

RIP

#ROUTER RIP

#NETWORK (NETWORK ID)

EIGRP

#ROUTER EIGRP (AUTONOMOUS NUMBER)

#NETWORK (NETWORK ID)

OSPF

#ROUTER OSPF (PROCESS ID)

#NETWORK (NETWORK ID) (WILD CARD MASK) AREA (AREA NUMBER)

PROCESS ID

- Its a number
- Number range is from 0 - 65535 (we can assign any number)
- It should be different for all 3 routers
- It is like Mobile Number.

AUTONOMOUS NUMBER(EIGRP) / AREA NUMBER (OSPF)

- Both are numbers
- Number range is from 0 - 65535 (we can assign any number)
- It should be same for all 3 routers
- It is like country code [+91]

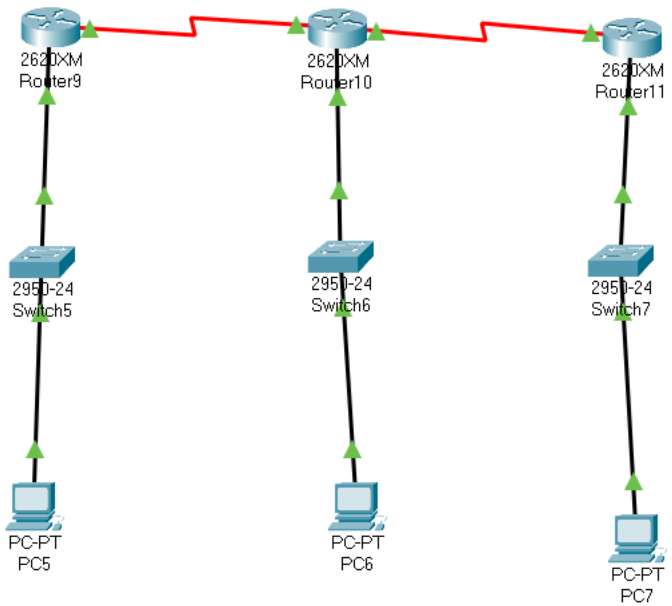
WILD CARD MASK

- It is inverse of ur subnet mask
- Calculation
- Global Subnet mask - 255.255.255.255
- Default Subnet mask - 255.255.255.0 (-)
- Wild card mask - 0 . 0 . 0. 255

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical | Physical | x: 1064, y: 2426 | [Root] | 08:08:00



Time: 01:00:25 | Realtime | Simulation

Serial DTE

Scenario 0 | New | Delete | Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC5	PC7	ICMP		0.000	N	2	(edit)	(delete)
	Successful	PC7	PC6	ICMP		0.000	N	3	(edit)	(delete)
	Successful	PC5	PC7	ICMP		0.000	N	4	(edit)	(delete)

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