Dynamic Routing

I. Why we need dynamic routing?

- ✓ To find the best route or path from end to end (source to destination) over a network.
- ✓ It is a process where a router can forward data via a different route or given destination based on the current conditions of the communication circuits within a system.
- ✓ Plays an important role for providing the shortest path.
- ✓ For larger network, we need dynamic routing.

II. Use of Dynamic Routing

- ✓ The chief advantages of dynamic routing over static routing are scalability and adaptability.
- ✓ A dynamically routed network can grow more quickly and larger.
- ✓ It is able to adapt to changes in the network topology brought about by this growth or by the failure of one or more network components.

III. Two Kinds of Dynamic Routing

- ✓ Routing Information Protocol Version 01 [RIP V1]
- ✓ Routing Information Protocol Version 02 [RIP V2]

IV. Routing Information Protocol Version 01 [RIP V1]

- ✓ It is a distance-vector routing protocol
- ✓ RIP V1 is a classful routing protocol
- ✓ It avoids subnetted network
- ✓ RIP V1 doesn't support VLSM [variable length subnet masking]
- ✓ RIP V1 support maximum hop of 15 [*HOP counts refer to the number of devices, usually routers, that a piece of data travels through*]

V. Disadvantage of RIP V1

- ✓ It produces more traffic than for OSPF but it is easier to configure.

VI. Routing Information Protocol Version 02 [RIP V2]

- ✓ It is a hybrid routing protocol
- ✓ It allows classless routing, which allows subnetted network also.
- ✓ It supports VLSM also [variable length subnet masking]
- ✓ It is better than RIPV1 as it has the option for network mask in the update to allow classless routing advertisements
- ✓ For RIP V2, auto summarization feature is excluded by commenting #no auto summary

"no auto summary" – It is mainly used for RIP V2 and EIGRP as auto summarization allows Routing Information Protocol (RIP) to summarize its routes to their classful networks automatically which creates confusion in the case of multiple network as each router is advertising each other about same network.

When we use "no auto summary" confirms the routes are advertised individually as separate subnets which we can track.