ROUTING ALGORITHMS

Routing

* Process of moving data packet- to one network to another is called Routing
* Routing done by Router

Two methods of routing

- Static routing
  - [manual router config]
  - Adv
    1. Easy implementation
    2. Secure
  - DisAdv:- Large Network is not possible.
- Dynamic routing
  - [Routing protocol Enable]
  - Adv:-
    1) For complex Network easy routing
    2) Automatic routing Table create
    3) If any link failure means automatically resolve the path.
  - Dis
    1. No Authentication
    2. No Secure
    3. CPU, memory depends

Dynamic routing

Interior Gateway Protocol (IGP)

Routing information is shared in single Gateways (or) organization.

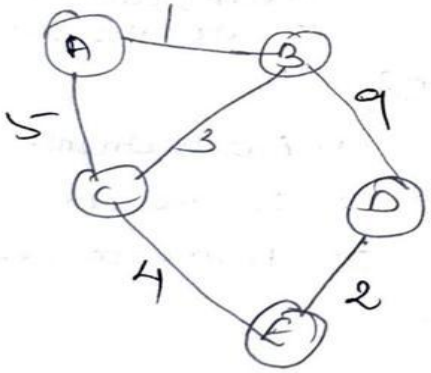
Exterior Gateway Protocol [EGP]
[Border Gateway Protocol]
Ex: [BGP]
Shared information to two different organization.

Link State Protocol
Eg:- OSPF, ISIS

Distance Vector Protocol
Eg:- RIP, IGRP

Hybrid routing Protocol
Ex: EIGRP

Distance Vector Routing algorithm



Destination	Cost	Next Node	Optimal cost calculation
A-B	1	B	A-B = 1 A-E-B = 5+3 = 8 A-C-E-D-B = 5+4+2+9 = 20

Destination	cost	Next node	optimal cost calculation
A-C	5	C	A-C = 5 A-B-C = 1+3 = 4 A-B-D-E-C = 1+9+2+4 = 16
A-D	10	B	A-B-D = 1+9 = 10 A-C-E-D = 5+4+2 = 11 A-B-C-E-D = 1+3+4+2 = 10
A-E	8	B	A-B-D-E = 1+9+2 = 12 A-B-C-E = 1+3+4 = 8 A-C-E = 5+4 = 9

Main goal of routing algorithm:-

1. Correctness:-
2. Simplicity [Ex: Shortest path]
3. Robustness :- ↳ you can add Extra parameters
   ↳ The ability to withstand the system over a years.