

# \* Computer Network and Security (CNS) - Assignment Number - 3

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\* What are the drawbacks of distance Vector Routing and solutions to recover them?

→ Drawbacks of Distance Vector Routing -

1. It is slower to converge than link state.

2. It is at risk from the count-to-infinity problem.

3. It create more traffic than link state since a hop count change must be propagated to all routers and processed on each router.

Hop count updates take place on a periodic basis, even if there are no changes in the network topology, so bandwidth-wasting broadcasts still occur.

4. For larger networks, distance vector routing results in larger routing tables than link state since each router must know about all other routers. This can also lead to congestion on WAN links.

Solutions -

1. Link State Analysis (LSA) - this protocols and hybrid protocols. In these



not only the hop-count is considered but also link quality is checked at regular interval to ensure the selection of not only shortest path but also the most efficient path for the destination.

2 Route Poisoning - route poisoning refers to the practice of advertising a route, but with a special metric value called Infinity. The main disadvantage of poison reverse is that it can significantly increase the size of routing announcement in certain fairly common network topologies.

3. Use of Split horizon method.

★ A class B network on internet has a subnet mask of 255.255.240.0. What is the maximum number of host per subnet?

→ Class B address format is Net.Net.Node.Node.

Subnet mask code -

1 = Position representing network or subnet addresses  
0 = Position representing the host address.

So firstly convert subnet mask into binary.

Subnet mask = 255.255.240.0 → 11111111 11111111 11110000 00000000

Number of host per subnet =  $2^y - 2$ , where  $y$  = numbers of 0's in node.

here,  $y = 8$  ∴ Number of host per subnet =  $2^8 - 2 = 256 - 2 = 254$

∴ 254 host is maximum number of host per subnet.