**DSDV Protocol**

* Based on the Bellman-Ford algorithm.
* Each mobile node maintains a routing table in terms of number of hops to each destination.
* Each entry in the table is marked by a sequence number which helps to distinguish stale routes from new ones, and thereby avoiding loops.
* To minimize the routing updates, variable sized update packets are used depending on the number of topological changes.
* DSDV is Destination Based
* No global view of topology

**DSDV is Proactive (Table Driven)**

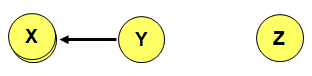
* + Each node maintains routing information for all known destinations
  + Routing information must be updated periodically
  + Traffic overhead even if there is no change in network topology
  + Maintains routes which are never used
  + Keep the simplicity of Distance Vector
  + Guarantee Loop Freeness
  + New Table Entry for Destination Sequence Number
  + Allow fast reaction to topology changes
  + Make immediate route advertisement on significant changes in routing table

**DSDV (Route Advertisements)**

* Advertise to each neighbor own routing information
  + Destination Address
  + Metric = Number of Hops to Destination
  + Destination Sequence Number

**DSDV (Route Selection)**

* Update information is compared to own routing table
  + 1. Select route with higher destination sequence number (This ensure to use always newest information from destination)
  + 2. Select the route with better metric when sequence numbers are equal.
* Each node periodically forwards routing table to neighbors
  + Each node increments and appends its sequence number when sending its local routing table
* Each route is tagged with a sequence number; routes with greater sequence numbers are preferred
* Each node advertises a monotonically increasing even sequence number for itself
* When a node decides that a route is broken, it increments the sequence number of the route and advertises it with infinite metric
* Destination advertises new sequence number
* When X receives information from Y about a route to Z
  + Let destination sequence number for Z at X be S(X), S(Y) is sent from Y



* + If S(X) > S(Y), then X ignores the routing information received from Y
  + If S(X) = S(Y), and cost of going through Y is smaller than the route known to X, then X sets Y as the next hop to Z
  + If S(X) < S(Y), then X sets Y as the next hop to Z, and S(X) is updated to equal S(Y)

Advantage of DSDV:

* It is quite suitable for creating ad hoc networks with a small number of nodes.

Disadvantages of DSDV:

* It requires a regular update of its routing tables, which uses up battery power and some amount of bandwidth, even when the network is idle.
* Secondly, whenever the topology of the network changes, a new sequence number is necessary before the network re-converges.
* Thus, DSDV is not suitable for highly dynamic networks.