



Figure 14: Packet Loss in case of DSR with Black hole Attack

8. Conclusion

Here we evaluated three routing protocols with respect to packet loss, packet delay and throughput with black hole attack. These are used for evaluation of performance factors. Throughput, packet loss and packet delay tells the reliability of protocols. In a network the routing protocol should be reliable and efficient.

The choice of intended protocol depends upon the network used. The following conclusions are drawn on the basis of experimental observations and analysis:

1. DSDV has more delay in case of 18 Nodes. While AODV and DSR has less delay in case of 18 Nodes as compare to DSDV. AODV has low Delay in case of 30 Nodes. DSDV has high delay in case of 30 Nodes as compare to DSR and AODV.
2. DSDV and DSR has low throughput in case of 18 Nodes as compare to AODV. AODV has high throughput in case of 18 Nodes. AODV has low Throughput than DSR in case of 30 Nodes. DSDV has very low throughput than DSR and AODV.
3. DSR has high Packet Loss in case of 18 Nodes. While AODV has low Packet Loss in case of 18 Nodes as compare to DSDV and DSR. DSR has High Packet Loss in case of 30 Nodes. AODV has low Packet Loss than DSDV and DSR.

There are three different scenarios packet delay, loss and throughput. There is a Need to analyze other routing protocols like TORA and GRP under black hole attack. A strategy need to be created to eliminate such type of behavior from black hole attack

9. Scope for Future Work

1. Investigation of other routing protocols like TORA and GRP under Black Hole Attack. We need to analyze other routing Protocol to see if they are Performing Better than each other by comparing them.
2. Investigation of the Prevention Techniques for Black Hole Attack for all Routing Protocols in NS-2 and then Comparison.

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