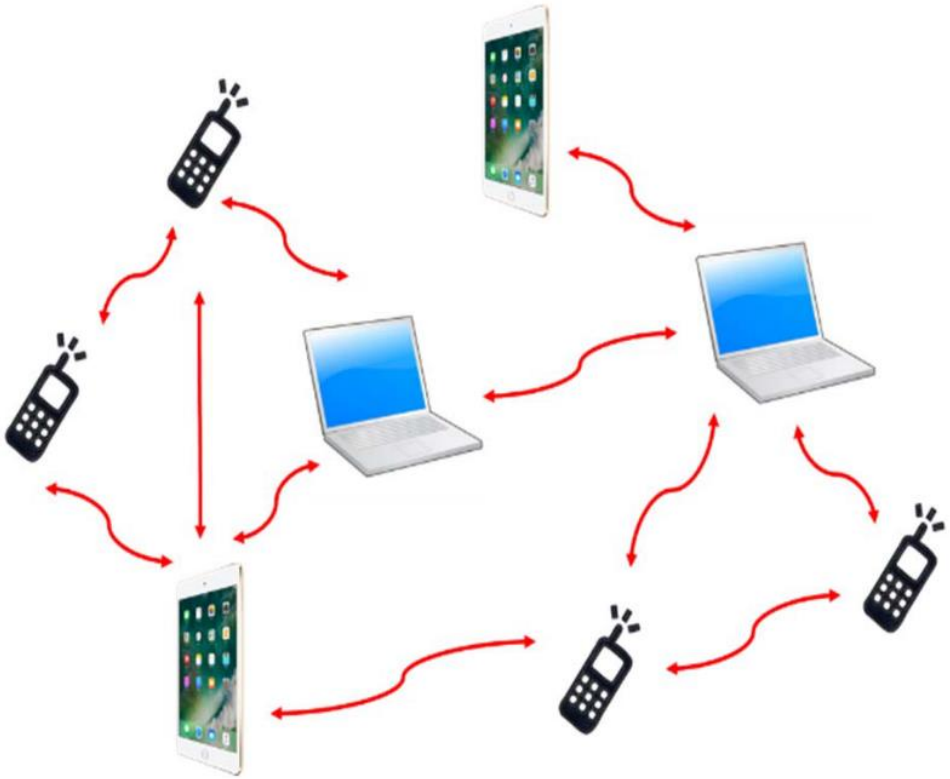
An Effective Multiple Paths Congestion Control AODV



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Conference Paper

CC-ADOV: An effective multiple paths congestion control AODV

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Motivation

- Researchers have been focusing on the routing algorithm for MANET routing protocol design for the last several years. Ad hoc On-Demand Distance Vector (AODV) routing is one of the most famous MANET reactive routing protocol. Thus, researchers have extensively modified this protocol in order to improve its performance.

- A new control scheme, named congestion control AODV (CC-AODV), is proposed to manage the described routing condition.

Challenges of AODV

- When using this approach other nodes (excluding the source and destination) that are available are not fully utilized even if they might have low traffic, leading to a lack of bandwidth utilization.

- As a result, the performance is degraded as the delays in delivering packets increase as well as the number of packets delivered is reduced.

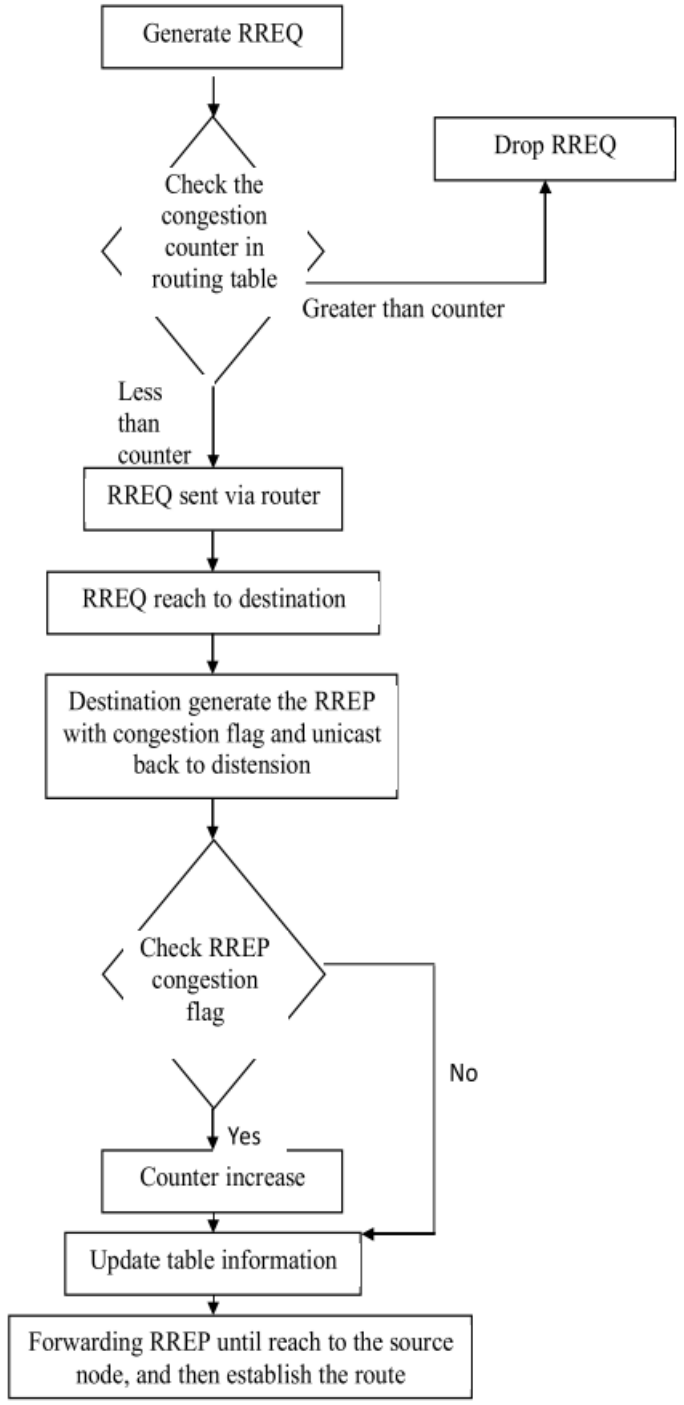
To overcome this challenge, the congestion control CC-AODV is proposed.

Congestion Control CC-AODV

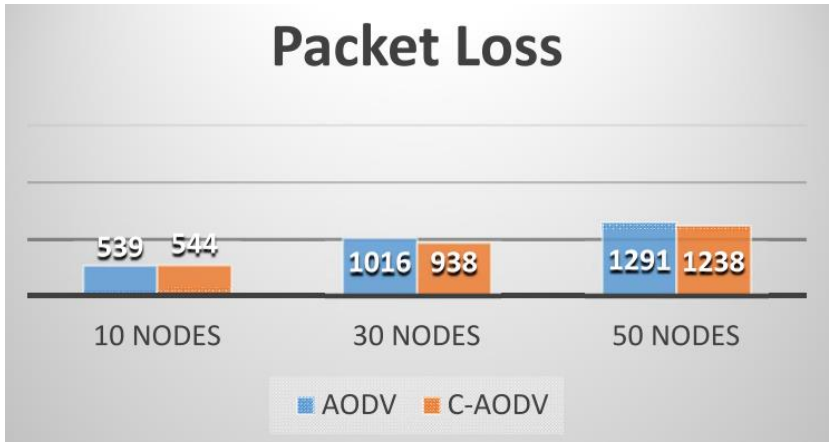
- The proposed CC-ADOV aims to lower the performance degradation caused by the packets congestion while the data is delivered using AODV.

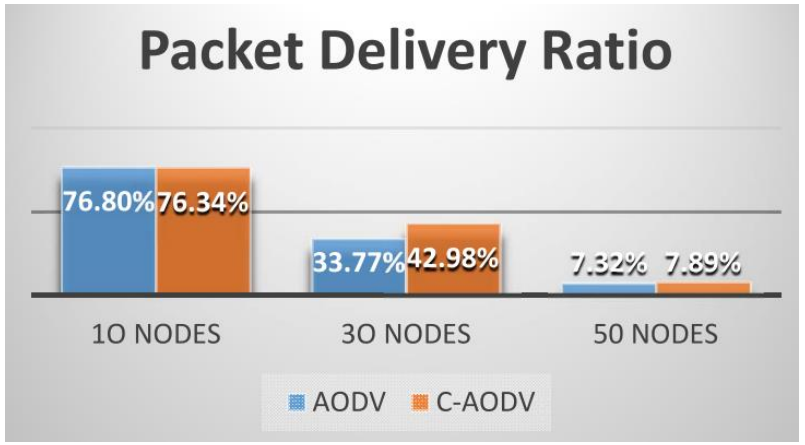
- CC-AODV determines a path for the data by using the congestion counter label.

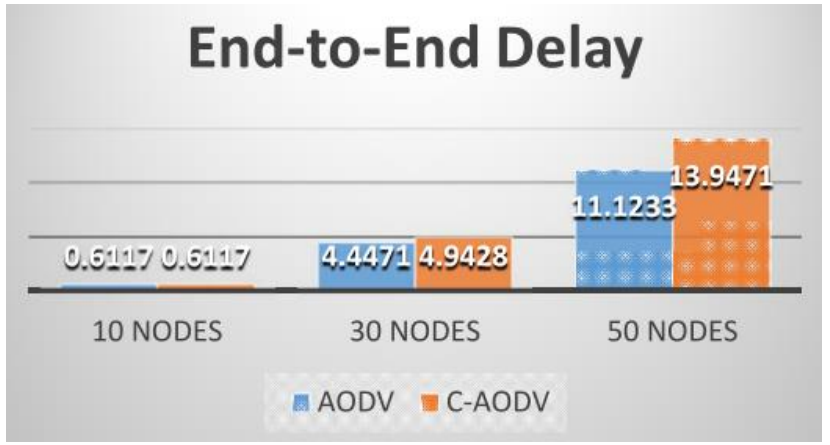
CC-AODV Flowchart

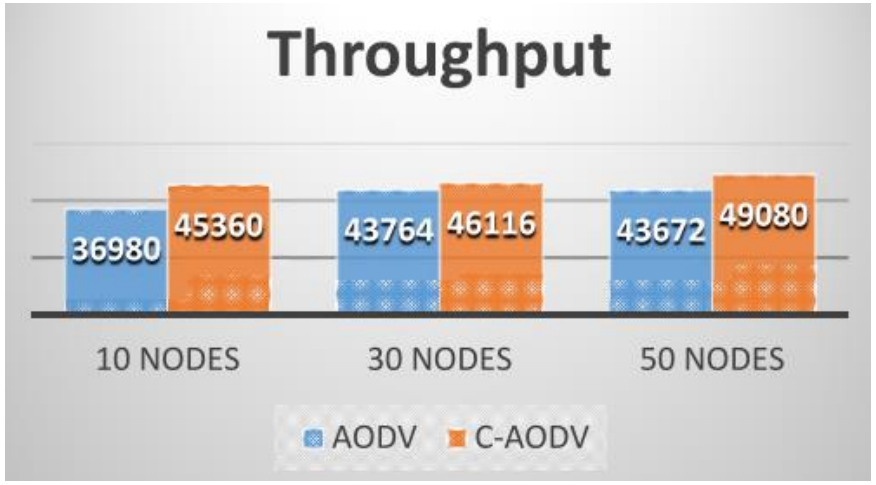


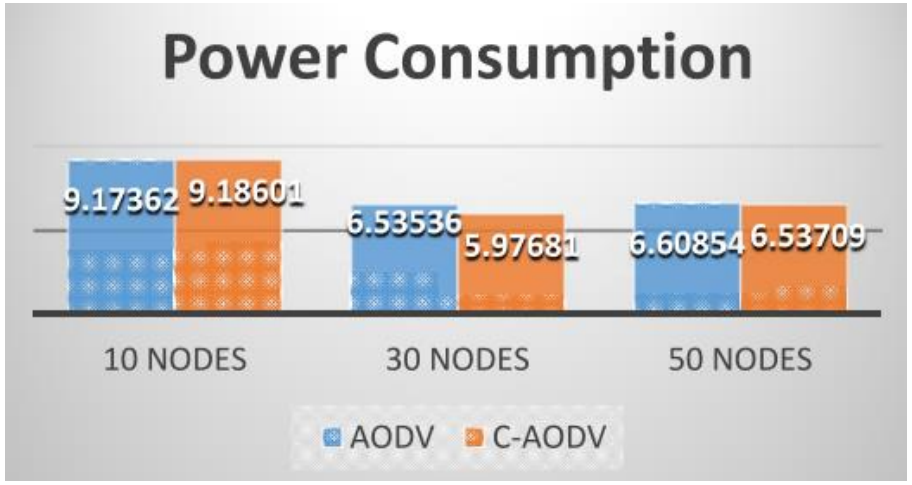
Performance Measure











Conclusion

- CC-AODV has higher end-to-end delay than the AODV when the network has more nodes.
- On the other hand, throughput, packet loss and packet deliver ratio of CC-AODV outperforms the AODV.
- Finally, although the congestion counter in the routing table increases the overhead, it creates better performance as shown on the simulation results.