Abstract

The delay tolerant networks (DTN, Delay Tolerant Networks) are networks where connectivity is intermittent because of the difficulties encountered in the environment such as climate, mobility, the breakdowns of energy, etc. To achieve a good delivery of data despite all these challenges, new network architecture was developed. This one consists on the addition of a supplementary layer in the OSI protocol stack, above the transport layer. This new policy is called: the bundle protocol. Its main role is to store data until an opportunity of transmission appears by using the Store and Forward technique and the concept of custody transfer. Routing protocols in this type of network do not try to find the shortest path as it is the case in the conventional protocols, but they focus on the increase in data delivery. The techniques used for this purpose can be divided into two large families. Some protocols adopt the
approach of replication, which involves the duplication of messages in the network by providing multiple copies in order to increase the likelihood of transmission. Others, are based on knowledge, that is to gather information about the network status and manage shipments efficiently. In DTN routing protocol forwarding decision and buffer management strategy are important to improve the chance of message delivery. In this paper, the new strategy proposed optimizes Epidemic routing protocol; it consists on using the path of ACKs messages and the path of all messages that have reached their destination to resolve the disadvantages of Epidemic routing protocol with the FIFO method. According to the simulation, the proposed method shows better delivery rate, better delivery probability and lower communication overhead compared to FIFO strategy and it is suitable for Epidemic.

References


Index Terms

Computer Science           Networks

Keywords

Store and forward   forwarding strategies   routing   DTN   Queue modes.