

ABSTRACT

Today's classic network has become one of the most important needs in facilitating the daily activities of mankind. However, the classical network still lacks and must meet certain conditions in order to work properly. Intermittent Connectivity, Long or Variable Delay, and High Error Rates are some of the challenges in classic network performance processes. From that it has found a new paradigm to overcome the challenge called Delay Tolerant Network / DTN. Routing Protocol in DTN is one of the determinants of good performance. So DTN is still in progress and there has been no standardization in application in the field. Although it does not have its default standard, DTN has some basic stomachs, namely Prophet and Epidemic. However, both Routing is still lacking and need development. So research has been done to combine the two properties of the stomach, and able to overcome the deficiencies in both stomachs called Improved Prophet.

In this Final Project conducted simulation algorithm Routing Protocol Improved Prophet. Using scenarios that vary the number of Nodes, Time To Live values, and number of Buffers aimed at analyzing performance optimizations compared to both Epidemic and Prophet Routing Protocols on delivery probability, average latency, and overhead ratio.

By applying the Node number change scenario. On the delivery probability side, Improved Prophet experienced an average performance improvement of 19.92% compared with Epidemic and 41.09% with Prophet. On the average latency side, Improved Prophet also experienced an average performance increase of 10% of both Routing Protocol. On the overhead ratio, there is also an average increase of 58% compared to Epidemic and 34% compared to Prophet. By making TTL changes. The delivery probability side Improved Prophet experienced an average increase of 66% and 55% in Epidemic and Prophet. On the average latency side, Improved Prophet has increased 18% and 19% compared to Epidemic and Prophet. On the overhead ratio, it also increased 39% and 45% against Epidemic and Prophet. The final test with Buffer Size change scenario. In delivery probability, Improved Prophet experienced an average performance improvement of 47% in Prophet and 43% with Epidemic. On the average latency side, Improved Prophet gets an average performance increase of below 10% from both. And lastly on the overhead ratio, Improved Prophet gained 28% increase in Prophet and 40% in Epidemic.

Keywords: Classic Network, DTN, Intermittent Connectivity, Long or Variable Delay, High Error Rates, Improved Prophet, Epidemic, Prophet, Average Latency, Overhead Ratio, Node, TTL, Buffer Size, Routing Protocol