Paper 171 – Technology

NETWORK SIMULATION AND THROUGHPUT ANALYSIS OF DELAY/DISRUPTION TOLERANT NETWORK

Jacquline Morlav S. Waworundeng and Green Mandias
Universitas Klabat
jacquline.morlav@unklab.ac.id, green@unklab.ac.id

ABSTRACT

Network configuration related with computers which connected together in an integrated system that can send and receive data. Protocol Transmission Control Protocol/Internet Protocol (TCP/IP) in the Internet network ensure reliable data exchange, in which the source and destination computer must always be connected continuously with low delay and low error rate of data transfer. In some areas with limited infrastructure internet network, the exchange of data becomes difficult because internet protocol has limitations that could not be used. Communication without Internet is being developed to overcome the limitations of the internet protocol. Alternative that can be used is a network-based Delay/Disruption Tolerant Network (DTN), which can handle data transfer even in extreme conditions with delays and disruption. In particular, this paper examine computer network which configured with the DTN protocol. The specific objectives related to simulation, experiments and testing the potential use of the DTN protocol in the process of data transmission between source node and destination node via a router node in simple network of DTN. The design of DTN-based network configuration, lead to analysis of the relation between the size of data, the transmission time and throughput. Throughput analysis between node-1to router and also between router to node-2 in DTN could have a different throughput value but not significant. The results of this study can be utilized to provide the facility of transfer data between computers in DTN network, without using the Internet.

Keywords: DTN, network simulation, router, throughput, bundles, data transmission