

ABSTRAK

Delay Tolerant Network (DTN) adalah jaringan nirkabel tanpa infrastruktur dimana koneksi antar *node* DTN sering terputus karena *node* DTN yang selalu bergerak. Dalam pengiriman pesanya dalam DTN digunakan mekanisme *store-carry-forward*. Dimana *node* akan menyimpan pesan di dalam *buffer*-nya sebelum diteruskan ke *node* lain. Salah satu strategi penerusan pesan dalam DTN adalah *Epidemic Routing*. *Epidemic Routing* menggunakan sistem *flooding* dalam penerusan pesannya, sistem *flooding* milik *epidemic* ini lebih cepat menghabiskan sumberdaya milik *node* DTN. Salah satu sumber daya tersebut adalah *buffer*. *Buffer* adalah sumber daya yang terbatas, sehingga sistem *flooding* milik *epidemic* dapat menyebabkan kemacetan pada *buffer*. Untuk mengatasi hal tersebut maka diterapkan sebuah *congestion control Average Forwarding Number based on Epidemic Routing* (AFNER) pada *buffer* agar *node* DTN dapat mengatasi kemacetan pada *buffer*. Pada penelitian ini penulis akan mengevaluasi *delivery probability*, *end-to-end latency*, *overhead ratio*, *message drop*, *buffer occupancy*, dan *average forwarding number* dengan pergerakan *Random Waypoint*, *Haggle3-Infocom5*, dan *Reality-MIT* sebagai pengukuran unjuk kerja.

Kata Kunci : *Delay Tolerant Network*, *Epidemic Routing*, *Congestion Control*.

ABSTRACT

Delay Tolerant Network (DTN) is a wireless network without infrastructure where the connection between DTN nodes is often lost because the DTN nodes are always moving. DTN uses a store-carry-forward mechanism when sending a message. With this mechanism, the node will store the message in its buffer before being forwarded to another node. One of the message forwarding strategies in DTN is Epidemic Routing. Epidemic Routing uses a flooding system to forward messages, this epidemic flooding system consumes DTN node resources faster. One of these resources is a buffer. Buffer is a limited resource that epidemic flooding system can causes buffer congestion. To overcome this, a congestion control Average Forwarding Number based on Epidemic Routing (AFNER) is applied to the buffer so that the DTN node can overcome congestion in the buffer by managing buffer usage when congestion in the buffer occurs. In this study, the author will evaluate delivery probability, end-to-end latency, overhead ratio, message drop, buffer occupancy, and average forwarding number with Random Waypoint, Haggle3-Infocom5, and Reality-MIT movements as performance measurements.

Keywords: Delay Tolerant Network, Epidemic Routing, Congestion Control.