ABSTRACT

Nowadays, massive data transmission on the Internet, like the distribution of software updates, has been increasing. One of the impacts of this phenomenon is bandwidth wasting. Multicast protocols can be used to overcome this problem. But multicast protocol itself is not reliable. It’s encouraging many researchers to design a reliable multicast protocol. The main problem in designing a reliable multicast protocol is the high possibility of feedback implosion due to packet loss.

This research is aimed to reduce Negative-Acknowledgment (NAK) in order to suppress feedback implosion. In this method, node will map other nodes based on the reliability of each node and make it as a backup node. This reliability is measured based on bandwidth availability and packet loss of each backup node. Nodes who experiencing packet loss, will send NAK to the backup node with highest reliability. Then backup node will reply by sending repair package. The goal of this method is to avoiding bottle neck at the sender node, which can avoid repetitive sending of NAK from nodes that experiencing packet loss.

Experimental results proved that this method can reduce the probability of bottle neck condition at the sender node and increase the successfull rate of NAK reply and decrease the chances of NAK retransmission. But this method need an additional bandwidth for backup node discovery process.

**Keyword**: reliable multicast protocol, feedback implosion, NAK, backup node.