

## ABSTRACT

The number of students at the University Telkom continues to increase so does the number of users of Telkomsel, especially on 4G networks, therefore if traffic provided not able to handle the increased traffic caused by the increasing number of users, then it does this impact on the quality of service even failure data connection for customers , So from that to deal with this situation as well as the calculations required and appropriate supervision of the network is available, so the quality 4G services can be achieved in excellent condition both when normal traffic or when traffic increases.

In this final project analysis of the data MRTG, the data represents data traffic MRTG on software Cacti in the Metro Ethernet connected with 4G BTS-STTTELKOMMD BDS079. Data MRTG analyzed the data obtained within 3 months of observation of October 18, 2015 until January 18, 2016 and observations per day for 6 days of observation between February 16, 2016 until February 25, 2016, but it also made observations on the customer side with the testing duration data downloads, ping test, and the measurement of signal strength.

From observations of Metro Ethernet traffic obtained that data traffic condition 4G service in normal conditions under 70% of the total traffic load, while at the increase in traffic occur, especially on Thursday, February 18 and February 25, 2016 obtained the value of traffic at 71.64% and 74.32% where the value has passed the traffic load tolerance should be under 70%. Addition of intermittent testing obtained an average duration longer downloading data on Thursday, February 18 and February 25, 2016. This is due to the unstable intermittent data connection, causing the data connection is intermittent. Based on observations and testing Metro Ethernet from the customer side, the analysis showed that the current data traffic has exceeded the tolerance traffic load, there will be intermittent and interfere with quality of service for customers. From the analysis offered solutions in tackling these problems in the form of additional allocations and additional capacity 4G base stations so that traffic can be reduced and intermittent load can be avoided.

Keywords: **Metro Ethernet, Traffic, 4G base stations, MRTG, Cacti.**