

ABSTRACT

The Telkom University Landmark Tower (TULT) building is a center for academic activities with a high density of digital activity, yet it lacks an integrated monitoring system to observe network performance. This research aims to develop and implement a network monitoring dashboard system based on the Simple Network Management Protocol (SNMP) by integrating Zabbix and Grafana. The research scope focuses on monitoring switch devices on the 8th and 9th floors of the TULT Building. The method used is PPDIOO, which includes the stages of planning, design, implementation, and analysis of monitoring results over a two-week period. The main parameters monitored include network traffic (sent and received), packet loss, latency, as well as CPU utilization and disk usage on the monitoring host. Monitoring results show that network traffic spikes consistently occur during peak academic hours, with traffic peaks reaching 341 Mb/s which are directly correlated with an increase in latency up to 901 ms and packet loss up to 100%. Further analysis reveals that the monitoring system's architecture, running in a virtualization environment (Hyper-V), can inflate the measured results for latency and packet loss. From this, it can be concluded that the implementation of the monitoring system is proven effective in presenting a real-time overview of the network's condition and serves as a solution to the problem of the absence of a monitoring system or dashboard in the TULT Building.

Keywords— Dashboard, Network Monitoring, Network Performance, SNMP, Zabbix, Grafana