

ABSTRACT

Limitations in the process of monitoring a network that has a large and complex infrastructure is one of the problems in the management and maintenance of network devices in a company. A good monitoring process will help prevent the damage to devices that have an impact on network performance. Currently the monitoring process uses a lot of simple network management protocols that have many shortcomings and are unable to display monitoring data with good data visualization and easy to understand. In addition, if the network devices to be monitored are very many and are scattered and different vendors, then the device configuration process will be very inflexible and complicated.

At present there are many open source data visualization, data collector and data exporter software that are widely used by other countries for managing network infrastructure. Therefore, this research tries to implement it using Grafana and Prometheus software to monitor the performance of personal computers (PCs) and access points (APs) in real time and can solve problems in today's simple network management protocols. In this study, the authors also added the Software Defined Network (SDN) platform to solve problems related to the configuration of network devices. SDN can configure network devices such as allocation of IP Address, OSPF Routing, etc. centrally and sufficiently through controllers, so that adding routing on SDN will provide flexibility when changes in network topology occur.

PC and AP monitoring performance testing results have successfully displayed monitoring data in real-time and complete with visualization of charts and graphs. SDN performance testing that applies OSPF routing with one of the wireless connected hosts shows that the convergence time value is 4.942 seconds and the average QoS parameter (throughput, delay, jitter, packet loss) has a very good value according to TIPHON standardization.

Keywords: Opensource Management, Monitoring, SDN, Grafana, Prometheus