Universiti Teknologi MARA

Performance Analysis of Network Monitoring Software in Wireless Network

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STUDENT DECLARATION

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of the other people, published, or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

Network monitoring software is a tools that are able to monitor the behaviours and provide alertness for any failing component of computer network. Network monitoring software usually deals with common issues such as hard to be configured and challenges in determined the best network monitoring that suite with requirements due to dumping of network monitoring software. The objectives of this research are to identify the network monitoring software that are easy to be configured and to analyse the performance of network monitoring software in terms of response time and packet loss. Network monitoring software that were involved in this research are PRTG, OpManager, Zabbix and LibreNMS. Two experiments were conducted for the second objectives which are launching TCP attacks for response time and UDP attacks for packet loss. Both attacks consists of four scenario which are 15 threads, 30 threads, 45 threads and 60 threads. The result for the first objective belongs to PRTG. PRTG provides an attractive of Graphical User Interface (GUI) which all configuration can be done through the interface only. For monitoring website, users need to add the device which was the targeted website and choose HTTP sensor for response time and PING for packet loss compared to others network monitoring software there were a lot of configuration need to be done. For response time and packet loss, both of it belong to Zabbix. The evaluation was based on lowest average response time. The first scenario, Zabbix detected as second lowest response time with a value 1785 msec while for second scenario and third scenario, Zabbix detected the lowest average response time with a values of 2372 msec and 5889 msec. When fourth scenario was launched, the result were same with others network monitoring software which is the average response time was able to be detected because of the website was down. In terms of packet loss, Zabbix show the consistent reading of packet loss from the 15 threads until 60 threads. The first scenario show challenges between Zabbix and PRTG which are 7.43 % and 5 % while LibreNMS was far away with 14.43 %. For the second scenario, the range between Zabbix, PRTG and LibreNMS was closed with the values 51.39 %, 48 % and 45.07 %. Same goes to third scenario, the range was between 64.44 %, 60 % and 66.6 % while the last scenario only show the challenges between Zabbix and LibreNMS only with a value 80 % and 86.72 %. Thus, Zabbix show consistency of detection percentage average packet loss.

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