ABSTRACT

Method of Admission Control is a validation process that is used for the inspection process before creating a new service to see if the conditions of service performance is still possible to accept new customers.

The classification of a service based on priority and availability of bandwidth in order to analyze the performance of canal traffic in complex networks. Network conditions is difficult to predict when there is traffic on the network is flooded by the user, then impacted by the drop in premium traffic is therefore a need for a method that can determine the performance that can be taken with proper handling.

Based on the problem as well as to support the admission control method described above, keep in mind the quality of canal traffic on the network is done by using direct measurement using tools and pathchirp Assolo Available Bandwidth Estimation to know that the concept of PRM (Probe Rate Model) using induced congestion and to tool PathChirp which uses the principle of slops (Self Loading Periodic Streams). The development of PathChirp is Assolo developed by varying the speed of the circuit is in Chirp using the principle of REACH (Reflected Exponential Chirp), the second tool is the source code in the form of C++ and run in a computerized operating system Ubuntu with the condition Real Time, then the output of pathchirp assolo tool and traffic will be compared with results obtained from a previous PRTG (Paessler Router Traffic Grapher) to the results of comparisons needed to verify the results of the tool assolo and pathchirp.

Admission control performed to determine which services can be passed or precedence to any available network quality using appropriate methods in OPNET Modeller version 17.1 licensed version so we get priority for services to be missed.

Based on the measurements, it was found that the tool PathChirp Assolo and can be used to see the conditions that exist on the network bandwidth and admission control techniques by demonstrating TELKOM RDC background traffic on the 3rd floor which is relatively quite solid. Link intranet experience of loading up 81.91 Mbps, or about 81.91% of the bandwidth capacity of 100 Mbps. Internet link with a

maximum capacity of 10 Mbps experienced 9.15 Mbps maximum load equal to 91.5%. Assolo better performance in terms of speed when compared with the range PathChirp, Assolo has a speed of 2.655 times faster and has better accuracy. Available Bandwidth Estimation Tool using Assolo to do because it has been compared with PRTG (Peassler Router Traffic Grapher) and the percentage error of 3.71%.

Admission Control Process with Poisson background traffic are done successfully with 100% admitted and priority for services performed successfully. Admission Process Control with background traffic Realtime 3rd floor RDC TELKOM obtained the Quality of Service (QoS) has a delay of 28.98 µs uplink and the downlink delay 58.059 µs. Throughput average value 75.264 Mbps downlink and 47.006 Mbps for uplink throughput value of the maximum link capacity of 100 Mbps. Packet loss generated an average of 37.44%.

From the simulation results, the value of MOS for the VoIP service has an average of 4.3232 stated that satisfactory quality, VoIP Jitter value is worth an average of 5.76 µs, while the end-to-end delay by an average of 0.0692 s.