

Analisa unjuk kerja empat skema kontrol explicit rate untuk layanan ABR dalam satu jaringan ATM

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Abstrak

Analisa unjuk kerja penggunaan empat skema kontrol explicit rate untuk layanan Available Bit Rate (ABR) dalam satu jaringan ATM telah dilaksanakan. Empat skema kontrol tersebut adalah EFCI, EPRCA, ERICA dan KIST. Analisa penggunaan keempat skema kontrol tersebut dilakukan dengan menggunakan sebuah model topologi jaringan ATM point to point dengan konfigurasi 'parking lot'. Dengan topologi jaringan tersebut, keempat skema kontrol tersebut dikonfigurasi dalam dua tahap penelitian, yaitu 4 dan 12 skenario konfigurasi jaringan.

Berdasarkan hasil simulasi dan analisa penelitian tahap 1, skenario konfigurasi 2 menghasilkan throughput terbesar yaitu 98,58 % dari throughput ideal dan juga menghasilkan nilai fairness index terbesar 0,9865. Skenario konfigurasi 1 menghasilkan throughput terkecil 96,33 % dari throughput ideal dan juga menghasilkan nilai fairness index paling kecil 0,9806.

Berdasarkan hasil simulasi dan analisa penelitian tahap II, Skenario konfigurasi 6 menghasilkan throughput terbesar 96,52 % dari throughput ideal dan juga menghasilkan nilai fairness index terbesar 0,9887. Skenario konfigurasi 10 menghasilkan throughput terkecil 88,84 % dari throughput ideal dan juga menghasilkan nilai fairness index terbesar 0,9532.

Performance analysis of usage of fourth explicit rate control scheme for ABR services in an ATM network have been performed. The fourth control schemes are EFCI, EPRCA, ERICA and NIST. The analysis of usage of fourth control scheme was performed in a point to point ATM network topology model with 'parking-lot configuration'. With that network topology, the fourth control scheme was configured in two phase of research, which is 4 and 12 configuration scenarios.

Based on the first phase research' simulation and analysis results, the 2nd configuration scenarios giving the biggest throughput, that is 98.58% from expected throughput and also giving the biggest fairness index value, that is 0.9865. The 1st configuration scenarios giving the smallest throughput, that is 9633% from expected throughput and also giving the smallest fairness index value that is 0.9806.

Based on the second phase research' simulation and analysis results, the 6th configuration scenarios giving the biggest throughput, that is 96,52% from expected throughput and also giving the biggest fairness index value, that is 0.9887. The 10th configuration scenarios giving the smallest throughput, that is 88.84% from expected throughput and also giving the smallest fairness index value that is 0.9532.