ABSTRAK

Judul : Analisis dan pemodelan bandwidth manajemen jaringan komputer universitas esa unggul

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Program Studi : Teknik Informatika

Penelitian ini didasarkan dari observasi awal diwilayah Universitas Esa Unggul Cabang Kebun Jeruk dimana didapatkan kekurangan dalam konektifitas jaringan yang tersedia di kampus serta ketika wawancara dengan Bagian IT Universitas Esa Unggul tidak adanya buku/blue print dari rancangan infrastruktur yang saat ini diterapkan di Universitas Esa Unggul. Tujuan dari penelitian yaitu diharapkan memberikan informasi *bandwidth* manajemen yang sesuai untuk digunakan di Universitas Esa Unggul dan memberikan perbandingan Infrastruktur jaringan baru kepada Universitas Esa Unggul. Penelitian ini menggunakan metode penelitian kualitatif dimana data diperoleh menggunakan cara observasi dan wawancara langsung serta mencari buku-buku referensi dan bahan publikasi. Dalam mengembangan rancangan infrastruktur jaringan menggunakan metode NDLC (*Network Develepoment Life Cycle)* dengan tahapan *Analysis – Design – Simulation prototyping – Implementation – Monitoring – Management* tetapi didalam penelitian dibatasi sampai tahapan simulasi dikarenakan inti penelitian di analisis dan pemodelan *bandwidth* manajemen. Hasil dari penelitian yaitu data perbandingan antara infrastruktur jaringan komputer lama dan infrastruktur jaringan komputer baru didapatkan dari perhitungan QoS (*delay* dan *throughput*) menggunakan aplikasi Wireshark yang terhubungan dengan GNS3. Dimana hasil yang didapatkan dari perbandingan nilai QoS infrastruktur jaringan komputer baru lebih baik dibandingan dengan infrastruktur jaringan komputer lama.

Kata kunci : bandwidth manajemen, jaringan komputer, *Network Development Life Cycle, Quality of Service*

ABSTRACT

Title : Analysis and Modeling of Bandwidth Management of Esa Unggul University Computer Network

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Study Program : informatics engineering

This research is based on preliminary observations in Esa Unggul University, Kebun Jeruk, where there is a lack of network connectivity available on campus. When interviewing the IT Department of Esa Unggul University, there is no book/blue print of the infrastructure design currently implemented at Esa Unggul University. The purpose of this research is to provide information on the appropriate management bandwidth for use at Esa Unggul University and provide a comparison of the new network infrastructure to Esa Unggul University. This research used a qualitative research method where the data were obtained using direct observation and interviews and searching for reference books and publication materials that match the report. In the development of computer network infrastructure the author uses NDLC (Network Development Life Cycle) method with step *Analysis – Design – Simulation prototyping – Implementation – Monitoring – Management* but in the research it is limited to the simulation stage because the core of the research is in the analysis and modeling of management bandwidth. The result of this research is comparison data between old computer network infrastructure and new network infrastructure obtained from QoS (delay and throughput) calculations using the Wireshark application which is linked to GNS3. Where the results obtained from the comparison of the QoS value of the new computer network infrastructure are better than the old computer network infrastructure.

Keywords : bandwidth management, computer networks, *Network Development Life Cycle, Quality of Service*