ABSTRAK

Penelitian ini berjudul **"SIMULASI BORDER GATEWAY PROTOCOL (BGP) UNTUK LAYANAN PAKET DATA MENGGUNAKAN SIMULATOR GNS3"**. Sehubungan dengan perkembangan teknologi saat ini yang sangat berperan penting dalam kebutuhan pengguna internet sehari-hari sehingga penyedia layanan internet membuat jaringan yang lebih kompleks agar kebutuhan pengguna dapat terpenuhi. Kebutuhan pengguna saat ini sangat bervariatif. Tidak hanya data berupa tulisan saja melainkan data berupa suara, gambar, bahkan video dalam ukuran besar dapat diakses dengan adanya koneksi internet. Agar kebutuhan tersebut dapat terpenuhi, maka penyedia layanan internet memberikan solusi dengan menggunakan media penyimpanan berbasis internet yang dapat diakses oleh seluruh pengguna sesuai dengan jenis kebutuhannya.

Cloud storage adalah salah satu solusi bagi penyedia layanan internet untuk memenuhi kebutuhan para pengguna internet. *Cloud storage* merupakan layanan penyimpanan file di internet. File yang disimpan di *cloud storage* dapat dikelola dari mana saja selama penggunanya terhubung ke *cloud storage* tersebut melalui internet. Selain dapat meng-*upload* data untuk menyimpan data, pengguna internet juga dapat men-*download* data di *cloud storage* tersebut.

Dalam pembuatan tugas akhir ini penulis menggunakan dua metode, yaitu study literatur dan riset atau aplikasi. Hasil penelitian dari simulasi ini menghasilkan dengan uji coba sebagai berikut : *delay wireless upload* 14,629862 *ms* sangat baik*, packet loss wireless upload 0%* sangat baik*, throughput wireless upload 51,9%* baik*. Delay wireless download* 15,00390392 *ms* sangat baik*, packet loss wireless download 0%* sangat baik*, throughput wireless download 52,1%* baik*. D*elay wireline upload* 13,84215257 *ms* sangat baik*, packet loss wireline upload 0%* sangat baik*, throughput wireline upload 56,2%* baik*. Delay wireline download* 13,90313023 *ms* sangat baik*, packet loss wireline download 0% sangat baik, throughput wireline download 57,8%* baik*.

Kata Kunci : BGP *(Border Gateway Protocol),*

MPLS (*Multi-Protocol Label Switching),*

Cloud Storage,

GNS3 *(Graphic Network Simulators)*

QoS *(Quality of Service)*

ABSTRACT

*Research is called a "**SIMULATION BORDER GATEWAY PROTOCOL (BGP) FOR SERVICE DATA PACKETS USING SIMULATOR GNS3**". With respect to the development of technology this is very important role in daily internet user need so that internet service providers make tissues are more complex to user needs could be met. The need of users is currently very kind. Not only in the form of writting data but data in the form of sounds, pictures, even videos can be accessed with the higher size by the presence of an internet connection. To these need could be met, and internet service providers provide solutions by using a storage medium based the internet that can be accessed by all users conforming to a type needs.*

Cloud storage is one of the solutions for internet service providers to meet the need of internet users. Cloud storage is service storage a file on the internet. A file that is stored in cloud storage can be managed from anywhere as long as a threat to the users connected to the cloud storage via internet. In additional to uploads the data for store data, internet users can also download data in the cloud storage.

In the manufacture of final project the writer used two methods, namely study literature and research or application. The result from simulation it produces to trial of as follows : delay wireless upload $14,629862$ ms excellent, packet loss wireless upload 0% excellent, throughput wireless upload 51,9% good. Delay wireless download $15,00390392$ ms excellent, packet loss wireless download 0% excellent, throughput wireless download 52,1% good. Delay wireline upload $13,84215257$ ms excellent, packet loss wireline upload 0% excellent, throughput wireline upload 56,2% good. Delay wireline download $13,90313023$ ms excellent, packet loss wireline download 0% excellent, throughput wireline download 57,8% good.

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