ABSTRACT

Virtualization server or virtual machine has become a core component in information technology infrastructure. A natural or human error disaster which happen anytime can cause serious damage for server storage area or building. Therefore, the server can not serve service requirement even will effect in the server not being able to be run.

Disaster Recovery (DR) system is a solution to handle problem in disaster and restore the service when the disaster has been completed. DR system does the server replication in data center to the other one, by placing the replication server apart from the main one, so that if the location of main server a disaster occurs and the server can not serve, then the spare can replace main server function and restore the system immediately in other server place. The location between the server is far, therefore data replication transmission from main server needs high bandwidth, while the avarage available bandwidth in link network is limited. This can be reduced by doing data compression before being synchronized.

Therefore, this final task is implementing the replication server in IAAS Cloud by doing data compression before the synchronisation to reduce transmitted data so that it can save the bandwidth consumption during replication process. So that saving time of replication in replication process before disaster happened using 100 Mbps bandwidth that is at hyper-v equal to 58.59% and 32.79% in system with ESXi, and saving data transmitted 58,91% on system with hyper-v and 39,9% System with ESXi. While the replication process with bandwidth link of 1000 Mbps the time required to perform relative replication between systems with compression and without compression, but on a system with compression can save the amount of data transmitted during the replication process that is equal to 58% on the system with hyper- V and 40.12% on systems with ESXi.

Recovery process after the disaster is done by restoring data replication in disaster data center to primary data center by replicating the data with compression system obtained time saving replication using 100 Mbps bandwidth that is at hyper-v equal to 54.22% and 22.54% on system with ESXi , And saving 57.98% of data transmitted on systems with hyper-v and 39.87% on systems with ESXi. While the replication process with bandwidth link of 1000 Mbps the time required to perform relative replication between systems with compression and without compression, but on a system with compression can save the amount of data that is sent during the replication process that is equal to 57.98% on the system with hyper- V and 39.87% on systems with ESXi.

Keywords : disaster recovery, cloud computing IAAS, virtual server, hyper-v, ESXi, replication, compression