

ABSTRACT

The Office of Communication, Informatics, Statistics, and Codings (DISKOMINFOSTANDI) Bogor is one of the Regional Organizations (OPD) that carries out the main tasks of organizing government affairs in the fields of communications and informatics, statistics and codings. DISKOMINFOSTANDI has a data center to manage basic tasks and become one of the main concerns in the development of a company or agency in the field of information technology. Currently, data center of DISKOMINFOSTANDI has not referred to the TIA-942 data center standard, namely tier-1, especially on network traffic. Therefore, data center design related to network traffic is needed as a basis for optimizing data center usage, especially in terms of network traffic that refers to the TIA-942 standard. In designing network traffic is using Network Development Life Cycle (NDLC) method which focuses on the initial three phases, namely analysis, design, and prototyping simulation. This method was chosen because it is continuous improvement in the development of data center in organization. The result of this research are design related to network traffic in the form of network topology with the Cisco Three-Layered Hierarchical Model concept and implementing Hot Standby Routing Protocol (HSRP) as redundancy on the network and cabling recommendations that refers to TIA-942 standards. From the results of the tests known that the implementation of redundant links decreases throughput 21.17 KBps at peak times and decreases 18.15 KBps at leisure time, then packet loss decreases 16.33% at peak times and decreases 0.8% at leisure time with very good categories according to TIPHON standards. Packet delay increases 13 ms at peak times and increases 11 ms at leisure time with very good categories according to ITU-T standards. So, we can conclude that redundant links can be one of effective solution in increasing network availability by reducing the number of packets loss when sending data.

Keywords: Data Center, Network Development Life Cycle, TIA-942 Standard, Network Traffic.