ABSTRACT

The network situation of existing network operators today is inseparable from IP / Optical Network devices and consists of a variety of different devices, things that affect the time and cost of a network operator in providing network services and monitoring, causing complexity networks that occur between the source and destination, congestion can not be avoided. But today the SDN (software defined network) technology is changing the paradigm of network operators in terms of service provision and network monitoring. Nokia NSP (network service platform) is an SDN platform that is able to provide service, monitoring, maintenance, service automation and network optimization.

In the traditional network concept, where the computation path function is located on the router itself, causing link on popular routes, can easily become congested while other links remain underutilized. Nokia NSP implements a centralized PCE (Path Computation Element) concept that has a specific task as path computation, with the help of CPAA (control plane assurance appliance) in charge of providing comprehensive network topology data so that Nokia NSP is able to manage network with globally view network conditions.

this final project is done simulation and analysis how Nokia NSP can maximize link utilization a link IP / MPLS (multi protocol label switching) network. Using two methods is the addition of Service LAG (Link Aggregation Group) on the NE (network element) and the use of STAR algorithm (Self-Tuned Adaptive Routing). This study aims to determine the performance of Nokia NSP in dealing with congestion problems.

From the results of testing and analysis, it can be concluded that the two methods for preventing congestion can be implemented well on IP/MPLS network using nokia NSP, with the best link utilization result is the use of STAR algorithm with link utilization result of 46% of total link between endpoint 1 (source) to endpoint 2 (destination)

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