ABSTRACT

ANALYSIS OF OSPFv3 PERFORMANCE ON IPv6 NETWORKS USING FREE RANGE ROUTING

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IPv6 adoption is still low at around 35-40% globally, but it may eventually replace IPv4. However, with the number of internet users now does not rule out the possibility that IPv6 will actually replace IPv4 in the future. With the presence of IPv6, of course, it is necessary to have a routing protocol that can later manage the selection of data transmission paths to share information about networks and connections between routers. The routing protocol that can be used on IPv6 networks is OSPFv3, which is a development of OSPF and OSPFv2 which are used on IPv4 networks. OSPFv3 is basically a routing protocol that focuses on IPv6 networks. Able to implement OSPFv3 routing protocol on IPv6 networks. Create a network that applies OSPFv3 routing rules to free range routing. Testing is done with Quality of Service (QoS) is a method of measuring how good a network service is, by sending TCP and UDP protocol packets, with a large load of 10 MB, 20 MB, 30 MB, 40 MB, and 50 MB.. Testing on the TCP protocol averaged 11.815 Mbps throughput and 71.49 ms average delay. In testing the UDP protocol the average throughput is 129.8 Kbps, delay 9.909 ms, jitter 4.503 ms and delay 0%. Based on the results of network testing carried out on TCP and UDP protocols, the network performance was categorized as very good.

Keyword: *Free range routing*, IPv6, OSPFv3, QoS