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Abstract

The shortage address space of the Internet Protocol Version 4 (IPv4) was the major factor that gave birth to the development of Internet Protocol Version 6 (IPv6). Initially, when the shortage alarmed, network experts used mechanisms like Classless Inter Domain Routing and Address Translation to remedies and slow down the exhaustion rate, yet the necessity for IPv6 could not be avoided. Finally, IPv6 emerged in 1998. Another issue however emerged as well, the migration to the new protocol. Since the arrival date up till now IPv6 is not the default Internet routing protocol. As result of the slow migration process, IPv6 has been running alongside with IPv4 on infrastructures partly meant for IPv4 in a dual stack network. The later and the former protocols employed multicast routing as integral of part their operations; this implies multicast routing is an integral part of the two protocols. This paper tests the performance IPv6 multicast routing over a dual stack virtual local area network. Graphical Network Simulator 3 was used to configure the network and Microsoft Hyper-V was used as the hypervisor on which the six virtual machines (hosts) reside. Parameters such as throughput, latency variations, data lost and the network over heads were measured. The experiment has shown that IPv6 multicast

routing did not performed well running it alongside with IPv4, therefore, after more examination, running IPv6 multicast routing alongside IPv4 multicast in dual Stack network should be discontinued.

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Index Terms

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Keywords

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