A Survey of Transition Mechanisms and Models for Transiting from IPv4 to IPv6 Networks

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Abstract:

The huge number of interconnected network nodes has led to the depletion of IPv4 address space meant for the global internet. This development has contributed to the implementation of IPv6 to replace and improve the depleted IPv4 platform. The transition concept along with its underlying strategies have been warmly adopted in implementation on major networks and operating systems. Several mechanisms have been proposed, including dual-stack, tunneling, and translation transition strategies though not yet mature on implementation. As a result, the implementation of IPv4 to IPv6 networks has increased and new challenges need to be taken into consideration for operational excellency. The transition mechanisms and models facilitate infrastructural representation towards smooth transition process. In this paper we survey available transition mechanisms, strategies, and modelling approaches as well as discuss how each can be used in the implementation of computer networks. This is achieved by carrying out a qualitative analysis of the current state-of-the-art strategies and present a couple of recommendations for adoption on the highlighted approaches.