Policy Proposal: Limit The Address Allocation to Extend The Lifetime of IPv4

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Abstract

IP addresses are critical resources for Internet development. The available IPv4 address pool is projected to fully allocated within 3-5 years, but the deployment of the alternative protocol, IPv6, is not accelerating. Recently, several proposals have introduced new approaches to managing IPv4 allocation. However, the market proposals in particular imply fundamental changes to the nature of IPv4 address allocation. This work analyzes the allocation history of ARIN, the organization which manages address allocation in the America region. Based on the historical data and projected trends, we propose three simple management policies which can be immediately implemented with limited resources and without either significant registrar cost nor drastic modifications on current allocation strategy. We verify the effectiveness of our policies using historical data.