

Expanded Address Allocation for Private Internets

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Problem Statement

- Policy conflict :
 - Interpretation that networks that intend to be private should use RFC 1918 private space.
 - Space provided in RFC 1918 is inadequate to meet the needs of larger networks.
- Attitude conflict :
 - Address management is paramount; modify business process to fit within space provided and expose operations plans for any public space acquired.
 - Business process & costs are paramount; modify allocation to streamline operations and reject external scrutiny of procedures.

Proposal

Allocate additional IPv4 /8's for private use:
draft-hain-1918bis-01.txt

Prime recommended candidates are 1/8 & 223/8

Alternative

- Remove interpretation that private networks must use private space.
- Remove scrutiny of deployments.

Example

Large network growing at /12 per year will require 3+ years to transition to IPv6 once their application vendors ship using their normal acquisition / testing / deployment process. With less than 3 years left of 1918 space at their current run rate, and vendors just starting to think about adding IPv6 to the applications, they are forced to modify business practices to delay the exhaustion of the available space. The resulting sub-optimal economics of the unnatural business process is a deterrent to further deployment of IP based applications.

Example

Several Internet access providers have deployed private address space across the upstream side of their CPE for management purposes. With dynamic customer count per aggregation point coupled with multiple addressable entities per CPE device; to manage operational logistics they have reached the point where they need to reuse some address ranges. This overlap creates a burden on operations as they attempt to maintain accurate accounting records and ensure the correct configuration is applied to the overlapped devices.

To illustrate the problem;

Address utilization efficiency for large numbers decreases with topology hierarchies (RFC 3194). For a typical 60% efficiency, 6 million customer devices requires 10 million of the available 16 million in 10.x. With business partner uses in the neighborhood of 4 million, and additional internal services/losses in the neighborhood of 3 million addresses, these providers have already exceeded the capability of the existing space defined in RFC 1918.