Enterprise Incremental IPv6

draft-chkpvc-enterprise-incremental-ipv6

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Objective

This document aims to provide a good single point of reference for Enterprise network architects and administrators in planning their IPv6 deployments

Overview

- Enterprise networks face different challenges than service providers and have varied reasons and priorities for deploying IPv6

- There is no current IETF guidance on Enterprise deployments, most recent being RFC4852.

- draft-chkpvc-enterprise-incremental-ipv6 lays out a phased approach to introducing IPv6 in an Enterprise Network

- Phased approach allows incremental deployment of IPv6 based on the business' own determination of priorities

Phased Approach

Given the challenges of migrating user devices, corporate systems, and Internet-facing servers, a phased approach allows incremental deployment of IPv6, based on business priorities

•Preparation and Assessment Phase – Inventory of current network, training of personnel, tools assessment and general program planning

(The following are in no particular order)

•External Phase – Connectivity, security, monitoring of various outward facing elements and/or accessible services

•Internal Phase – Delivery of IPv6 to the internal user facing side of it the IT infrastructure

•Other Phases – Delivering IPv6 to Guest Networks and ultimately deploying IPv6-only networks

Key Highlights – Preparation and Planning Phase

- Recommend thorough readiness assessment and testing

  - Network Equipment

  - Installed Software Base – OS, Middleware, Apps

  - Tools

- Security Policy @IPv6 == Security Policy @IPv4

- If security policy requires audit trails – disable privacy extensions.

- Address Plan

  - Recommend PI space for enterprises that need to multihome with different service providers

  - /48 for each site, /64 for vlan, /127 for point-to-point

  - Aggregate at every level of network hierarchy

- Personnel training needs to be a key component of the deployment strategy

Key Highlights – External Phase

- Dual Stack when you can, translate when you must

- Have consistent filtering policies between IPv4 and IPv6

Key Highlights – Internal Phase

- Dual Stack when you can, tunnel when you must

- Use IGP that technical staff is most familiar within the existing IPv4 setup with awareness that IPv6 introduces the opportunity to rationalize the existing environment and architect it for growth

- Use VRRPv3 for faster failover to alternate default router

- Considerations for SLAAC and/or DHCPv6

- Understand default OS behavior and turn off unneeded interfaces

- Long term enterprise network roadmap should include steps on gradually deprecating IPv4 from the dual-stack network

Concerns raised on mailing list so far…

- Is the document too ambitious
    - "My concern is whether the document is too ambitious. If it is to be detailed enough to be useful, maybe it needs to be split into a number of separate documents." - Brian Carpenter

Our intent is to provide summaries and references to other drafts in an attempt to provide a single point of reference to enterprise network administrators

Next Steps

- Can we get some additional reviewers

- Adopt as a WG Document?