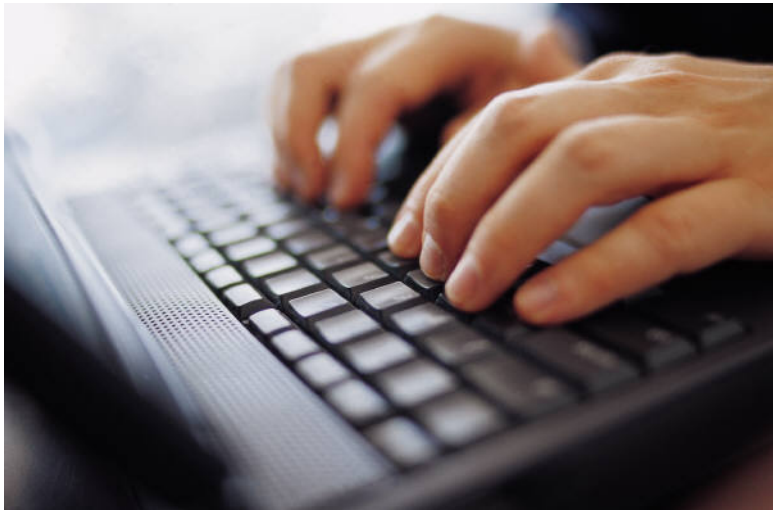

Wireline: Incremental IPv6

draft-kuarsingh-wireline-incremental-ipv6-02

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Why?

- Vendor and operator feedback on additional guidance to address IPv6 transition
- Many technological options, viewpoint on how to use such technologies and when
- Not all operators are as fall along as others in IPv6 deployment and addressing IPv4 run out

Introduction

- Draft-kuarsingh-incremental-ipv6 lays out a phased approach to introducing IPv6 in a Wireline Netowrk
  - Primary audience would be Cable and other Wireline environments
- Intended to help operators whom may be just starting out planning a strategy for IPv6 transition and implementation
- Link to framework document [draft-ietf-v6ops-v4v6tran-framework]
- Link to to RFC6264 was suggested
  - This draft is more specific and sets out a more definitive phase and objectives

Version -00 through Version -02

- Changes made moving to version -01
  - Text updates and edits
  - New Sections Added
  - Updated References

- Changes made moving to version -02
  - Textural Updates (based on comments)
  - Operator considerations
  - Diagrams

Topics Covered (and maturing)

- Motivation
- Reasons for Phased approach
  - Relevance of IPv6 and IPv4 in transition
  - IPv4 Resource challenges
  - IPv6 Environment Maturity
  - Impacts to Operators

- Transition Technology Analysis (very basic for novice)
  - Auto Tunneling (background)
  - CGN (NAT44)
  - 6RD
  - Native Dual Sack
  - DS-Lite
  - NAT64

Approach and Rationale

- Introduce IPv6 as soon as possible
  - Use Tunneling if needed due to Customer Prem and/or Access network issues
  - Assist auto tunneling technologies as best as one can (promotes IPv6 use)
  - IPv4 still main service, and aligns with network conditions (tools/mgmt etc)
- Mature to Dual Sack as soon as possible
  - Use CGN if needed on IPv4 (it's deployable)
  - IPv4 path still independent so less impact to tools, procedures and troubleshooting (environment maturing)
- Optimize IPv4 environment
  - Move to tunneled IPv4

- Keep the most traffic off transition technologies!
- Transition techs are "auxiliary paths", "assist paths"
- Relays, translators etc – are engineering and management challenges so use them as little as possible
- Use Dual stack phase to move the build of content and services to IPv6

Transition Phases

- Phase 0
  - Foundational Items (routing, policy, security, transition architecture)
    - Will be expanded in rev -01 with far more detail and operational considerations and input
- Phase 1 (Tunneling)
  - Managed/Assist Auto-Tunneling (6to4, Teredo)
  - Introduce 6RD as early option
  - Most tools on Ipv4, main capabilities (content to be added)
- Phase 2 (Native Dual Stack)
  - Mature IPv6 environment, add in CGN if needed
  - Mature IPv6 tools, capabilities, operational proceeds
- Phase 3 (Tunneled IPv4)
  - IPv6 now mature, services on IPv6 now (for the part)
  - Optimize IPv4 (if resourced challenged or if desired)

Next Steps

- Interest and/or value in such a document?
- WG Document?