

## IPv6 in MPLS Networks

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- The biggest unresolved issue in the ISP analysis

- How to deploy IPv6 in the MPLS networks?

- Options

- Require deploying native IPv6 support
- Require MPLS network to support setting up IPv6 LSPs
- Use IPv6-over-IPv4 configured tunneling
- Use an automatic tunneling mechanism to set up v6-in-v4 tunnels in the network

- The first and second are longer-term options

- Well, could be done in the short term as well..
- The exact details what is required for the control plane upgrade are unclear

- The third is a simple option, and works very well

- However, if IPv6 is added on all the edge routers, setting these up is cumbersome..

- The fourth is the "lazy man's solution" to configured tunneling

- More on this in the next slide

# Automatic tunneling in MPLS

## Automatic tunneling in MPLS

- Automatic tunneling =~ "BGPTUNNEL"
  - Cisco has claimed IPR on this, not clear which parts of the spec
  - Its relation to Cisco's "6PE" is a bit unclear
    - Some say they're the same
    - Some think BGPTUNNEL has cruft in it, and would need a clean-up
  - Other implementations, do they interoperate?
- Why not dual-stack deployment instead?
  - Vendor has sold hardware which doesn't do v6, needs workaround
    - Or doesn't do v6 well enough
    - Is it IETF's problem work around such "reasons" ?
- What's wrong with IPv6 LSP set-up deployment?
  - Takes time to implement and/or upgrade?
  - Folks don't want to upgrade their MPLS signalling plane
    - Not sure if a valid reason, as upgrades happen in any case..
- Why not configured tunneling?
  - Want to set up large IPv6 networks with "featureless" hardware