Using 127-bit IPv6 Prefixes on Inter-Router Links

draft-kohno-ipv6-prefixlen-p2p-01.txt

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The major changes from -00

- Had Lorenzo Colitti join to the author team
- Stated the reasons for using longer prefixes more clearly
  - Ping-pong issue
  - Neighbor cache exhaustion issue
  - Other reasons
global address for Inter-Router Links

• operational needs
  – for health check (by ping) and to help traceroute
  – for eBGP configuration
• concern for /64
  – ping-pong issues on sonet/tunnel links
  – Neighbor cache exhaustion issues
  – and others as well
• workarounds other than /127
  – /128 addressing
  – packet filter
  – these are difficult to deploy on AS-boundaries
Operators need insurance

• /127 is like an insurance for us
  – to avoid unexpected misuse/attacks

• We have /31 addressing for IPv4, so we are already familiar with the smallest minimum addressing.
/127 on Inter-Router Links

• /127 addressing works today, and we are using it in our network.
  – Subnet-Router Anycast is not currently widely implemented.

• Then we would like to make sure that it keeps working in the future as well.
The recommendation

• The draft proposes that Inter-Router links MAY be assigned 127-bit prefix lengths.
• If such a prefix is assigned to a link, Subnet-Router Anycast MUST be disabled for the prefix.

– Obsoletes: 3627 (if approved)
  • RFC3627 : Use of /127 Prefix Length Between Routers Considered Harmful
– Updates: 4291,5375 (if approved)
  • RFC4291 : IP Version 6 Addressing Architecture
  • RFC5375 : IPv6 Unicast Address Assignment Considerations
Next step

• Ask 6man WG to adopt the draft as the WG document