IPv6 Standards Update

Steve Deering
deering@cisco.com
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IPv6 (formerly IPng) Working Group

- minutes and presentations from last month's meeting are at playground.sun.com/ipv6
- some bureaucratic highlights:
  - Margaret Wasserman (WindRiver) appointed as 3rd co-chair, along with Bob Hinden (Nokia) and myself
  - starting an effort to advance our many Proposed Standards to Draft Standard status (currently have 5 Draft Standards, 32 Proposed)

IPv6 Node Requirements Spec

- starting an effort to compile an IPv6 Node Requirements spec
  - triggered by appearance of several device requirements drafts ("cellular hosts", "low-cost network appliances")
  - to identify applicability and requirements level (MUST/ SHOULD/ MAY) of the many IPv6 RFCs and parts of RFCs
  - not to fix bugs/omissions from specification RFCs

Progress on Some Old Issues

- Flow Label field
  - seem to finally have rough consensus use of the flow label:
    - for labeling "microflows", e.g., individual TCP connections and individual RTP streams, to enable more efficient classification by routers for, e.g., QoS handling or load-spreading
    - end-to-end immutable value; dropped "randomness" requirement
    - routers use (source addr, destination addr, flow label) as classifier
- Scoped Address Architecture
  - need to pin down syntax for text representation of zone IDs, then ready for working-group "last call" for publication as Proposed Standard RFC

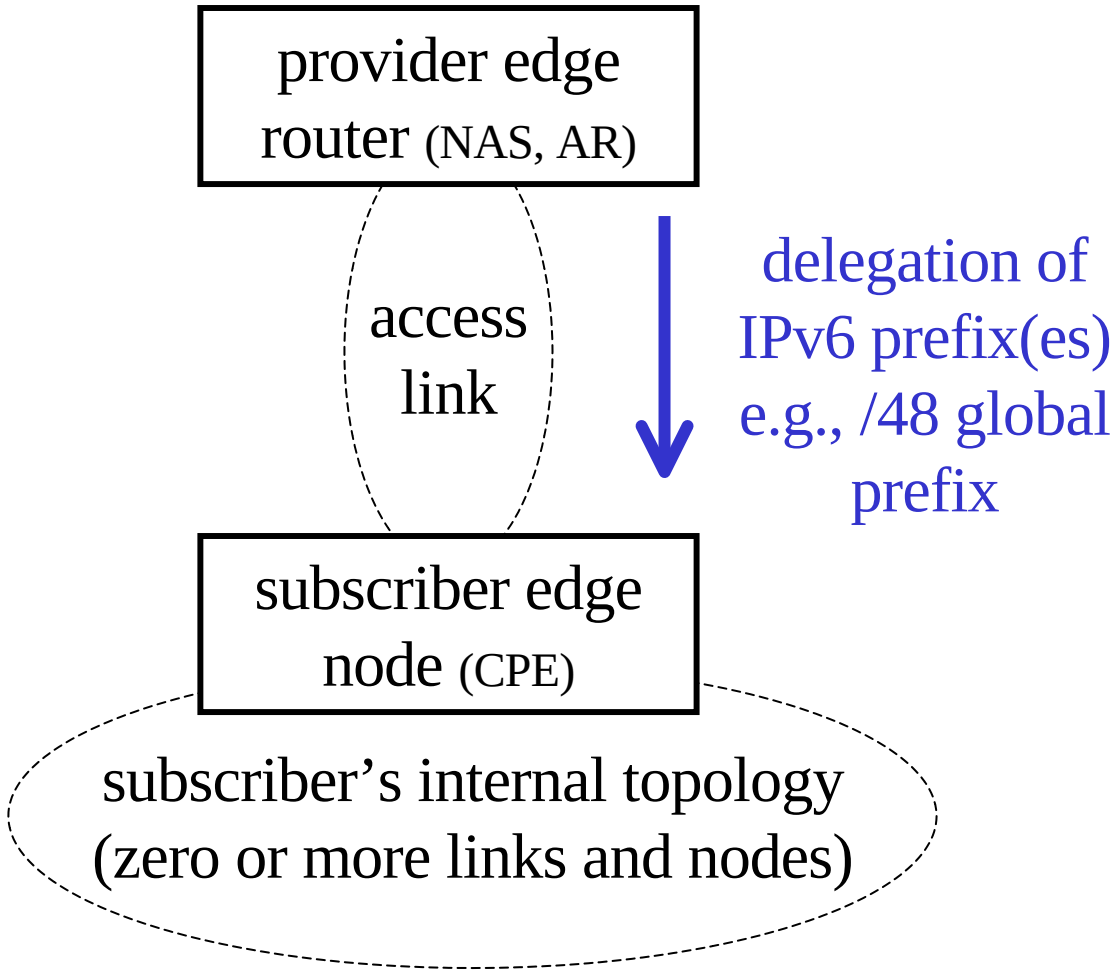
Progress Old Issues (cont.)

- Default Router Preferences & More-Specific Routes
  - inching towards publication as Proposed Standard RFC
- IPv6 3GPP Recommendations
  - submitted for publication as Informational RFC

Non-Progress on Other Issues

- IP-version-independent MIB work is stalled; needs new leadership
- anycast semantics and mechanics still under debate
  - e.g., may an anycast address be used as a source address
  - proposal to form a new working group for anycast
- far from reaching consensus on DNS Discovery technique(s)
- far from reaching consensus on Prefix Delegation technique(s)

Automatic Prefix Delegation Problem



Results of Discussion and Poll at Redmond Interim Meeting (5/2001)

candidate solutions (votes):

- Router Renumbering (0)
- DHCPv6 (0)
- PPP extension (1)
- normal RAs on access link (many)
- ICMPv6 [Haberman/Martin APD proposal] (many)

Reconsideration of candidates in light of new/revised proposals

candidate solutions (votes):

- Router Renumbering ()
- DHCPv6 ()
- DHCPv6 subset ()
- PPP extension ()
- normal RAs on access link ()
- ICMPv6 [Haberman/Martin APD proposal] ()
- RA extension [Lutchansky proposal] ()

unable to reach agreement to even have a show-of-hands; have to produce problem description/requirements first.

NGtrans Working Group

- Margaret Wasserman also appointed co-chair of this WG, replacing Bob Fink (LBL, retired); Tony Hain (Cisco) and Alain Durand (Sun) continuing
- major attempt to refocus group
  - WG has generated many specs and techniques (half a dozen tunneling schemes, multiple translation and dual-stack approaches)
  - is both too much and too little? (numerous redundant mechanisms, but possibly still some gaps)
  - all current drafts-in-progress are being frozen, and group asked to develop transition/interoperation scenarios first, and then show how specific techniques fit into those scenarios

Other Working Groups

- Mobile IP(v6)
  - agreed to use “return routability” as minimal mechanism to authenticate Binding Updates sent to correspondent nodes
  - vulnerable to man-in-the-middle subversion, but so is most Internet communication, whether mobile or not

    (but wireless networks allow more “men” in the “middle”
  - trying to leave door open for future, stronger methods
- DHCP(v6)
  - finally submitted to IESG for publication as Proposed Standard

Regional Registry Discussions on IPv6 Address Allocation Policy

- close to adopting revised allocation policy, in common across all registries
  - dropping TLA/NLA structure and jargon
  - more liberal policy for initial allocations to ISPs
    - need plan to serve at least 200 subscribers within 2 years
    - initial allocation is a /32
  - additional allocations based on HD-Ratio computation, using current subscriber count
    - takes into account the lower densities achievable for larger-scale, hierarchical allocation blocks