Mobile Networks Considerations for IPv6 Deployment

http://tools.ietf.org/html/draft-ietf-v6ops-v6-in-mobile-networks-01

v6ops Working Group
Internet-Draft

Rajeev Koodli
Cisco Systems

Scope

- Document covers:
  - Public and Private IPv4 Exhaustion
  - NAT Placement
  - IPv6-only Deployments
  - Fixed-Mobile Convergence
- This talk:
  - Revisions since v00

On-demand IPv4 addressing

- On-demand IPv4 PDN management
  - Providers may allocate only the IPv6 PDN upon attach
  - IPv4 PDN allocated based on application usage
    - Needs additional support in a MN
  - IPv4 PDN is subject to session idle timers, releasing the IPv4 address when the PDN is deleted

On-demand IPv4 addressing

- IPv4 addressing in IPv4v6 PDN
  - Only the IPv6 prefix assigned at the time of IPv4v6 PDN establishment
  - IPv4 address assignment may be deferred when establishing the PDN
    - MN needs to support deferred addressing, DHCP
    - MN needs application-triggers to invoke DHCP

On-demand IPv4 addressing

- Split MN:
  - The MN is a combination of a peripheral (e.g., USB dongle) and a computer
  - The computer supports DHCP, which needs to be triggered based on application usage
  - Typical DHCP operation, with *appropriate* lease times

IPv6-only Deployments

- Dual-stack is the preferred model, and is readily applicable
- IPv6-only deployments expedite IPv6 roll outs, and avoid need for (public or private) IPv4 addresses
- Need IPv6 – IPv4 translation
  - Associated considerations from the relevant protocols
- All applications on the MN need to be IPv6-only, and roaming could imply fallback to IPv4

Next

- Need further input, especially on the FMC section