Dynamic IP Address Allocation
in Mobile IP

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Current Assumptions

Mobile IP

- Transparent availability based on permanent IP addresses
- Permanent Home Address allocation

Network Access Identifier (NAI)

- Identifies users
- Assist routing authentication requests
- Users can roam between administrative domains and use the same AAA

Why Dynamic Address Allocation?

- Address = Location
- Name = Identity
- Hosts *should* be identified based on names
  NOT based on IP addresses
- Modern technology promote *nomadic computing*

Home and Foreign concepts
have become obsolete

No need for permanent Home Address Allocation

Dynamic Address Allocation Scope

- “Home address” acquired dynamically on a temporary basis
- Local connectivity
- Roaming between different domains shall be possible
- Public and corporate networks
- Support for cross-domain allocation

  “Home” and Care-of addresses *may* be acquired from different administrative domains

Solution

- **DHCP manages temporary IP address allocation**
- **Dynamic Address Binding**
  NAI associated with temporary “Home Address”
- **Domain based approach for supporting mobility**
  MN keeps their temporary “home” address within one administrative domain during connection
- **Roaming support between different domains**

Evaluation Result

- Temporarily Home address allocation ***today*** possible within one administrative domain using available DHCP options
- Address retrieval based on DHCP ~ 100 ms (WLAN)
- DHCP has limitations:

  Security **NOT** provided

  No cross-domain allocation possible

Call for Action!

Related published IETF drafts:

- Mobile IP AAA Requirements
- Dynamic Registration and Configuration Protocol (DRCP)
- Mobile IP Network Access Identifier Extension

There is a need for Dynamic Addresses Assignment

Incorporate in the design of a extended MIP