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

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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