Running MIPv4 and MOBIKE together – Optimizations

MIP4 WG, IETF 69
Vijay Devarapalli (vijay.devarapalli@azairenet.com)
Meghana Sahasrabudhe (meghana.sahasrabudhe@nsn.com)
draft-ietf-mip4-mobike-connectivity-03.txt is with the IESG currently

Describes how to run Mobile IPv4 over an IPsec tunnel

- The IPsec remote IP address obtained as part of IPsec tunnel setup is used as the co-located CoA for MIPv4 registration
- MIPv4 is used when the MN is inside the trusted network – No IPsec tunnel
- MOBIKE is used to handle IP address changes when the MN is outside the trusted network and is running MIPv4 over IPsec

Some disadvantages

- Tunneling overhead when the MN is outside the trusted network
  - Packet initiated by the MN
    IPv4 hdr (src=IPA, dst=VPN_GW)
    ESP Hdr
    IPv4 hdr (src=TIA, dst=HA)
    IPv4 hdr (src=HoA, dst=CN)
    Payload
  - FA CoA mode not addressed
Foreign Agent co-located with VPN GW

- Co-locate the foreign agent on the VPN GW
- The IPsec remote IP address is the same as the MIPv4 home address
- Reduces the tunneling overhead since the Mobile IP tunnel is between the VPN GW/FA and the HA and the IPsec tunnel is between the MN and the VPN gateway
  - IPv4 hdr (src=IPA, dst=VPN_GW/FA)
  - ESP hdr
  - IPv4 hdr (src=HoA, dst=CN)
  - Payload
- The IPsec tunnel between the MN and the VPN GW provides a single hop p2p link between the MN and the FA
  - FA Agent Advertisement sent over this link
- Currently documented in draft-meghana-mip4-mobike-optimizations-02
Home Agent co-located with VPN GW

- Co-locate the home agent with the VPN GW
- The IPsec remote IP address is the same as the MIPv4 home address
- The MN is at home when attached to the VPN GW
  - No tunneling overhead
  - Single hop p2p link between the MN and the HA
  - HA Agent Advertisement sent over the IPsec tunnel
- Was documented in version 00 of draft-meghana-mip4-mobike-optimizations-02