Network Based Connectivity and Mobility Management for IPv4

draft-chowdhury-netmip4-00.txt

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Motivations

• Connectivity Management:
  – MN needs address X which is from a different domain than the AR
  – The MN may not have a MIPv4 implementation

• Mobility Management:
  – The MN moves across subnet boundary at the point of attachment (AR)
  – How does the AR/Access Network offer seamless mobility for the MN (with address X) w/o requiring the MN to perform any L3 procedures
Overview

• The core idea is to perform Mobile IPv4 registration using MIPv4 client in a network node rather than the MN
  – Initiated by a network node
  – On behalf of a MN
  – Triggered by another protocol:
    • IPCP
    • DHCP
    • Some L2 trigger
• The MN acquires it’s address e.g. X regardless of it’s point of attachment
Illustration of the Connectivity Scenario
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OTAP Link Setup

Serving BS
Cell 1

Serving AR/FA

HA

IPCP or DHCP
Illustration of the Connectivity Scenario

OTA Link Setup

Serving BS

Cell 1

RRQ/RRP, CoA1, HoA= ALL-ZERO-ONES

Serving AR/FA

IPCP or DHCP

HA
HA bi-cast can be a configurable feature in the HA based on operator’s policy. It is also possible that the Serving AR establishes a transport connection with the Target AR instead of HA bi-casting.
Illustration of the Mobility Scenario

OTA handoff preparation

Cell 1

OTA handoff preparation

Cell 2

Serving BS

Serving AR/FA

Target BS

Target AR/FA

HA

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Goals

• A network based connectivity and mobility management scheme for IPv4 by using MIPv4 protocol
  – Leverage basic MIPv4 protocol for this purpose
  – Define a set of simple messages for inter-AR communication (HO request/response) or reuse another suitable protocol
  – Discuss and adopt bi-cast requirements
Next Step?

- Begin the work in MIP4 working group.