HIP Mobile Router

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HIP Mobile Router

- Signaling delegation between HITs
  - MR sends location updates on behalf of clients
  - Certificate-based authorization & authentication
  - Supports nested moving networks
- Hides the network mobility from MR’s clients
  - Private address space in moving network
- New BEETMB (Middle Box) mode in MR
- MR service discovery
HIP MR state establishment

MN → HIP Mobile Router → CN

- Private address space
- Internet
- I1 / UPD (SEQ) (+ MR locators)
- R1' (+ REG_INFO)
- I2' (+ REG_REQ + certificate)
- R2' (+ REG_RESP)
- R1 / UPD (SEQ ACK) (+ CN locators)
- I2 / UPD (ACK)
- R2
- ESP packets
- New BEETMB (Middle Box) mode

IN PARALLEL
HIP MR location update

MN IP: C

Private address space

HIP Mobile Router

MR IP: A

UPD (SEQ + certificate)

UPD (SEQ ACK)

UPD (ACK)

ESP packets

Handoff

Internet

CN

MR IP: B

ESP packets
Implemented HIP MR demo scenario

Correspondent Node

3G Access IPv4

Mobile Node #1

WLAN Access IPv6

Mobile Router

SIMA

Mobile Node #2

IPv6 Access

Data

Internet
SPI collisions

- It is possible that SPI values collide
  - SPI needs to be modified
  - Problems e.g. SPI value integrity protected
- “SPINAT: Integrating IPsec Into Overlay Routing”
  - J. Ylitalo, P. Salmela, H. Tschofenig
  - SecureComm'05