Mobility Capability Negotiation and Protocol Selection

draft-yan-dmm-man-02
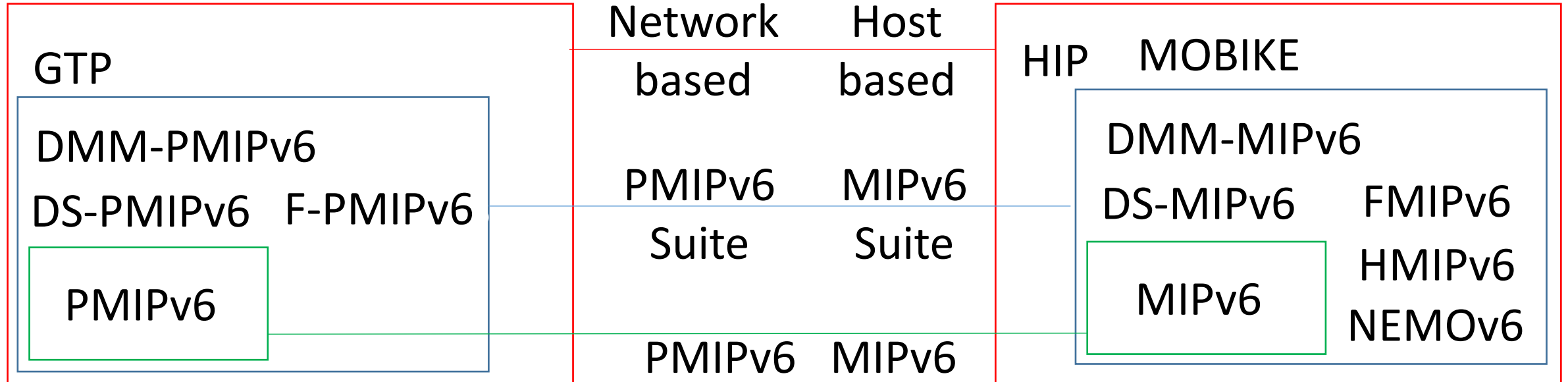
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Overview

- First presented at the IETF Chicago meeting

- Some feedbacks we got
  - Clear possible protocol categories required
  - Clear possible protocol selection analysis required

- Addressed in draft-yan-dmm-man-02

Categories

	Network based	Host based	
GTP			HIP MOBIKE
DMM-PMIPv6			DMM-MIPv6
DS-PMIPv6 F-PMIPv6	PMIPv6 Suite	MIPv6 Suite	DS-MIPv6 FMIPv6
PMIPv6			MIPv6 HMIPv6 NEMOv6
	PMIPv6	MIPv6	

- PMIPv6: the network-based mobility management protocol specified by RFC5213

- PMIPv6 Suite Protocols: extensions based on PMIPv6

- Network-based mobility management protocols: L3 mobility management protocols which have no functional requirements on the mobile node

- MIPv6: the host-based mobility management protocol specified by RFC6275

- MIPv6 Suite Protocols: extensions based on MIPv6

- Host-based mobility management protocols: L3 mobility management protocols which have functional requirements on the mobile node

Possible Cases - Overview

Host (i.e., mobile node)				Possible cases		Network (i.e., service provider)		
Network based	PMIPv6 suit	PMIPv6	X		Y	PMIPv6	PMIPv6 suit	Network based
		DS-PMIPv6				DS-PMIPv6		
		F-PMIPv6				F-PMIPv6		
		DMM-PMIPv6				DMM-PMIPv6		
	Others	GTP				GTP	Others	
Host based	MIPv6 suit	MIPv6				MIPv6	MIPv6 suit	Host based
		DS-MIPv6				DS-MIPv6		
		FMIPv6				FMIPv6		
		HMIPv6				HMIPv6		
		DMM-MIPv6				DMM-MIPv6		
		NEMOv6				NEMOv6		
	Others	HIP, MOBIKE				HIP, MOBIKE	Others	

Possible Cases – Selection Principles

- Priority 1: Follow network ability
- Priority 2: Follow host preference
- Priority 3: Support the functional extensions
- Priority 4: Support the performance enhancements
- *In default: network based scheme if it can be supported*

Possible Cases – Examples (1/5)

Host	Network

- Network based, Network based
  - PMIPv6 Suite, PMIPv6 Suite
    - PMIPv6, PMIPv6-------PMIPv6
    - PMIPv6, Extensions-PMIPv6------Extensions-PMIPv6 if no MN involvement, otherwise PMIPv6
    - Extensions-PMIPv6, PMIPv6------PMIPv6
    - Extensions-PMIPv6, Extensions-PMIPv6------Extensions-PMIPv6 if same, otherwise PMIPv6
  - PMIPv6 Suite, Other-N
    - PMIPv6, Other-N------Other-N if no MN involvement, otherwise failure
    - Extensions-PMIPv6, Other-N------Other-N if no MN involvement, otherwise failure
  - Other-N, PMIPv6 Suite
    - Other-N, PMIPv6------PMIPv6
    - Other-N, Extensions-PMIPv6------Extensions-PMIPv6 if no MN involvement, otherwise PMIPv6
  - Other-N, Other-N
    - Other-N if same, otherwise follow network ability *Other-N: other network based solutions*

Possible Cases – Examples (2/5)

- Network based,   Host based
  - PMIPv6 Suite, MIPv6 Suite
    - PMIPv6, MIPv6-------Failure
    - PMIPv6, Extensions-MIPv6------Failure
    - Extensions-PMIPv6, MIPv6------Failure
    - Extensions-PMIPv6, Extensions-MIPv6------Failure
  - PMIPv6 Suite, Other-H
    - PMIPv6, Other-H------Failure
    - Extensions-PMIPv6, Other-H------Failure
  - Other-N, MIPv6 Suite
    - Other-N, MIPv6------Failure
    - Other-N, Extensions-MIPv6------Failure
  - Other-N, Other-H
    - Failure

Other-H: other host based solutions

Possible Cases – Examples (3/5)

Host	Network

- Host based,   Network based
  - MIPv6 Suite, PMIPv6 Suite
    - MIPv6, PMIPv6-------PMIPv6 in default, MIPv6 if MN prefers
    - MIPv6, Extensions-PMIPv6------Extensions-PMIPv6 in default, then PMIPv6, MIPv6 if MN prefers
    - Extensions-MIPv6, PMIPv6------PMIPv6 in default, Extensions-MIPv6 if MN prefers and network also supports (otherwise MIPv6)
    - Extensions-MIPv6, Extensions-PMIPv6------Extensions-PMIPv6 in default, then PMIPv6, Extensions-MIPv6 if MN prefers and network also supports (otherwise MIPv6)
  - MIPv6 Suite, Other-N
    - MIPv6, Other-N------Other-N in default, other failure
    - Extensions-MIPv6, Other-N------ Other-N in default, other failure
  - Other-H, PMIPv6 Suite
    - Other-H, PMIPv6------PMIPv6 in default, otherwise failure
    - Other-H, Extensions-PMIPv6------Extensions-PMIPv6 in default, otherwise failure
  - Other-H, Other-N
    - Other-N in default, otherwise failure

Possible Cases – Examples (4/5)

Host	Network

- Host based,   Host based
  - MIPv6 Suit, MIPv6 Suit
    - MIPv6, MIPv6-------MIPv6
    - MIPv6, Extensions-MIPv6------MIPv6
    - Extensions-MIPv6, MIPv6------MIPv6
    - Extensions-MIPv6, Extensions-MIPv6------Extensions-MIPv6 if same, otherwise MIPv6
  - MIPv6 Suite, Other-H
    - MIPv6, Other-H------Failure
    - Extensions-MIPv6, Other-H------Failure
  - Other-H, MIPv6 Suite
    - Other-H, MIPv6------Failure
    - Other-H, Extensions-MIPv6------Failure
  - Other-H, Other-H
    - Other-H if same, other failure

Possible Cases – Examples (5/5)

Host	Network
• Host&Network based	Host&Network based

- • Host&Network based
  - • Follow the Network based scheme in default
  - • Select the protocol both network and host can support

Working Group Draft?

- Request to be a working group draft

Thank you!

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