

IPv6 Ready Phase-2
Mobile IPv6
Self Test Specification
for Home Agent
Technical Document
Revision 3.2.0



Modification Record

Revision 3.2.0 November 1, 2007

New

Added the IPsec Advanced Function "Fine-Grain Selectors" based on RFC4877.

- "Reference standards" in "1 Overview"
- IPsec setting in "Common Set up-1"
- Packet figure in "5. Common Packets" and "6. Test Specification"

Improvement

- make more detail Sequence chart in "6. Test Specification"
- make more detail Packet figure in "6. Test Specification"

Correct

"3. Common Setup"

- Correction the routing table.
- Correction the IPsec Parameter.
- Correction the RA parameter.

Typo

"6.7.2.1.1 HA_6_2_1"

"(*2) PASS: CN0X receives Echo Request"

-> "(*2) PASS: MN0X receives Echo Request w/ RH"

"6.7.2.2.1 HA_6_2_2"

"(*2) PASS: CN0X receives Echo Request"

-> "(*2) PASS: MN0X receives Echo Request w/ RH"

Editorial

Title, footer, and copyright were fixed.

Version 3.1.6 July 9, 2007

The copyright was updated.

Version 3.1.5 July 18, 2006

Correction of cover and Acknowledgements.

Version 3.1.4 May 29, 2006

About status of the Binding Acknowledgement packet.

Zero and 1 is admitted as Binding Update accepted.

All Binding Acknowledgement packets were corrected.

The test item was added in "6.7.2 Invalid Reverse Tunneling".

"6.7.2.1.1 HA_6_2_1", "6.7.2.2.1 HA_6_2_2"

Typo

"6.4.1.1.1 HA_3_1_1", "6.4.1.1.2 HA_3_1_6", "6.4.1.1.3 HA_3_1_2",

"6.4.1.1.4 HA_3_1_7", "6.4.1.1.5 HA_3_1_4", "6.4.1.1.6 HA_3_1_9",

"6.4.1.2.1 HA_3_1_11", "6.4.1.2.2 HA_3_1_12",

"6.4.3.1.1 HA_3_3_1", "6.5.3.1.1 HA_4_4_1", "6.10.1.2.3 HA_8_1_8"

Binding Acknowledgement packets were corrected.



(Mistake of packet form (PADN OPTION) to refer to 5.10.2.)

Typo “6.6.2.1.1 HA_5_1_2” “[PROCEDURE]”

“ | -----> | Echo Request (link-local)”
-> “ | ----> | | Echo Request (link-local)”

Version 3.1.3 May 11, 2006

“6.6.2.2.1 HA_5_1_7”

The source address of the packet(destination unreachable) to be judged was corrected.

Version 3.1.2 February 3, 2006

The global address of RUT(Link1) was corrected in “2 Common Topology”.

Typo

“6.6.2.1.2 HA_5_1_3”, “6.6.2.2.1 HA_5_1_7”

“(*2) PASS: * receives Echo Reply (tunneled)”
-> “(*2) PASS: * receives Echo Request (tunneled)”

“6.6.2.2.1 HA_5_1_7”

5. R1X sends Time Exceeded
6. CN1Y receives Destination Unreachable (*3)
"RUT (Link0, link-local)"
-> "RUT (Link0, global)"

“6.6.1.1.1 HA_5_1_1” “[JUDGEMENT]”

(*2) PASS: MN0X receives Echo Reply (tunneled)
-> (*2) PASS: MN0X receives Echo Request (tunneled)

“6.6.1.1.2 HA_5_1_4” “[JUDGEMENT]”

(*2) PASS: MN0X receives Echo Reply (tunneled)
-> (*2) PASS: MN0X receives Echo Request (tunneled)
(*4) PASS: MN0Y receives Echo Reply (tunneled)
-> (*4) PASS: MN0Y receives Echo Request (tunneled)

“6.6.1.2.1 HA_5_1_5” “[JUDGEMENT]”

(*2) PASS: MN1X receives Echo Reply (tunneled)
-> (*2) PASS: MN1X receives Echo Request (tunneled)

“6.6.1.2.2 HA_5_1_6” “[JUDGEMENT]”

(*2) PASS: MN1X receives Echo Reply (tunneled)
-> (*2) PASS: MN1X receives Echo Request (tunneled)
(*4) PASS: MN1Y receives Echo Reply (tunneled)
-> (*4) PASS: MN1Y receives Echo Request (tunneled)

“6.6.2.1.2 HA_5_1_3” “[JUDGEMENT]”

(*2) PASS: MN0Y receives Echo Request (tunneled)
-> (*2) PASS: NUT sends Echo Request to MN0Y(tunneled)

“6.6.2.2.1 HA_5_1_7” “[PROCEDURE]” “6. CN1Y receives Destination Unreachable”

Source Address RUT (Link0, global)
-> Source Address RUT(Link1, global)

“6.6.2.2.1 HA_5_1_7” “[JUDGEMENT]”

(*2) PASS: MN1Y receives Echo Request (tunneled)
-> (*2) PASS: NUT sends Echo Request to MN1Y(tunneled)



“6.7.1.1.1 HA_6_1_1” “[JUDGEMENT]”

(*2) PASS: CN0X receives Echo Reply

-> (*2) PASS: CN0X receives Echo Request

“6.7.1.1.2 HA_6_1_2” “[JUDGEMENT]”

(*2) PASS: CN0X receives Echo Reply

-> (*2) PASS: CN0X receives Echo Request

(*4) PASS: CN0Y receives Echo Reply

-> (*4) PASS: CN0Y receives Echo Request

“6.7.1.2.1 HA_6_1_3” “[JUDGEMENT]”

(*2) PASS: CN1X receives Echo Reply

-> (*2) PASS: CN1X receives Echo Request

“6.7.1.2.2 HA_6_1_4” “[JUDGEMENT]”

(*2) PASS: CN1X receives Echo Reply

-> (*2) PASS: CN1X receives Echo Request

(*4) PASS: CN1Y receives Echo Reply

-> (*4) PASS: CN1Y receives Echo Request

“6.9.2.1.9 HA_7_2_11” “[PROCEDURE]”

“ | | | ----> | HAAD Reply (HA0, RUT) (*2)”

->“ | | | ----> | HAAD Reply (RUT, HA0) (*2)”

Version 3.1.1 June 20, 2005

The document file was converted from HTML into PDF, and the composition of the document was changed.

Version 3.1.0 May 16, 2005

HTML document.



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Principle Authors:

- IPv6 Promotion Council, Certification Working Group

Commentators:

- IRISA-INRIA



Introduction

The IPv6 forum plays a major role to bring together industrial actors, to develop and deploy the new generation of IP protocols. Contrary to IPv4, which started with a small closed group of implementers, the universality of IPv6 leads to a huge number of implementations. Interoperability has always been considered as a critical feature in the Internet community. Due to the large number of IPv6 implementations, it is important to provide the market a strong signal proving the level of interoperability across various products.

To avoid confusion in the mind of customers, a globally unique logo programme should be defined. The IPv6 logo will give confidence to users that IPv6 is currently operational. It will also be a clear indication that the technology will still be used in the future. To summarize, this logo programme will contribute to the feeling that IPv6 is available and ready to be used.

The IPv6 Logo Programme consists in three phases

Phase 1 :

In a first stage, the Logo will indicate that the product includes IPv6 mandatory core protocols and can interoperate with other IPv6 implementations.

Phase 2 :

The "IPv6 ready" step implies a proper care, technical consensus and clear technical references. The IPv6 ready logo will indicate that a product has successfully satisfied strong requirements stated by the IPv6 Logo Committee (v6LC).

To avoid confusion, the logo "IPv6 Ready" will be generic. The v6LC will define the test profiles with associated requirements for specific functionalities.

Phase 3 :

Same as Phase 2 with IPsec mandated.



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1 Overview

This document organization tests by group based on related test methodology or goals. Each group begins with a brief set of comments pertaining to all tests within that group. This is followed by a series of description blocks; each block a single test. The format of the description block is as follows:

Description block

[PURPOSE]	The PURPOSE is the short statement describing what the test attempts to achieve. It is usually phrased as a simple assertion of the future or capability to be tested.
[CATEGORY]	The CATEGORY shows you who need to satisfy the test shortly.
[REQUIREMENT OF TEST]	The REQUIREMENT describes the condition of the NUT.
[TOPOLOGY]	The TOPOLOGY describes the network used in the test.
[TEST SETUP]	The TEST SETUP describes how to initialize and configure the NUT before starting each test. If a value is not provided, then the protocol's default value is used.
[INITIALIZATION]	The INITIALIZATION describes step-by-step instructions for carrying out the setting before the test.
[PROCEDURE]	The PROCEDURE describes step-by-step instructions for carrying out the test.
[JUDGMENT]	The JUDGEMENT describes expected result. If we can observe as same result as the description of Judgment, the NUT passes the test.
[REFERENCES]	The REFERENCE section contains some parts of specification related to the tests. It also shows the document names and section numbers.



Reference to Common

Refer to a common part for some blocks because there are only several kinds of content.

Reference to Common packets

The reference to Common packets in [INITIALIZATION] and [PROCEDURE] is described.

- Refer to the packet simply.
Example)
5. Send Binding Update. (Refer to X.X.X)
- The packet is referred to, and amplification is described.
Example)
5. Send Binding Update(Sequence No=10000). (Refer to X.X.X)
6. Receive Binding Acknowledgement. (HA0 -> NUTX) (Refer to X.X.X)
The Lifetime field is less than or equal to 60 seconds.
- Especially, the packet of the focus supplements the field to which it pays attention with the table form.
Example)

5. Send Binding Update. (Refer to X.X.X)

IPv6 Header	Source Address (Care-of Address of Mobile Node)	MN (global)
	Destination Address (Correspondent Node Address)	NUT (global)
Destination Option	Home Address of Mobile Node	MN (global)
Mobility Header	MH Type	5
	A	1
	H	0
	Sequence	10000
	Lifetime	60
Nonce Indices Option	Home Nonce Index	Any
	Care-of Nonce Index	Any
Binding Authorization Data Option	Authenticator	Any

Acronyms

CN	- Correspondent Node
HA	- Home Agent
MN	- Mobile Node
HL	- Home Link
FL	- Foreign Link
HoA	- Home Address
CoA	- Care-of Address
Re-Reg	- Re-Registration
De-Reg	- De-Registration
Co-Reg	- Correspondent Registration
BCE	- Binding Cache Entry
BLE	- Binding Update List Entry
ICMPv6	- Internet Control Message Protocol for IPv6
DHAAD	- Dynamic Home Agent Address Discovery
HAAD	- Home Agent Address Discovery
MPD	- Mobile Prefix Discovery



MPS	- Mobile Prefix Solicitation
MPA	- Mobile Prefix Advertisement
BRR	- Binding Refresh Request
RR	- Return Routability
HoTI	- Home Test Init
CoTI	- Care-of Test Init
HoT	- Home Test
CoT	- Care-of Test
BU	- Binding Update
BA	- Binding Acknowledgement
BE	- Binding Error

Reference standards

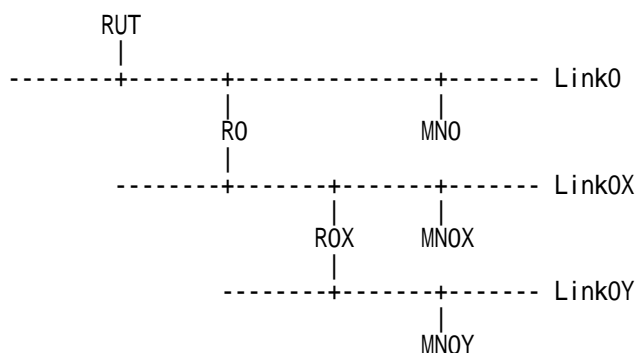
This documentation covers the functions specified in the IETF RFC and Mobile IPv6 Test Profile listed below.

- (1) RFC3775: Mobility Support in IPv6
(<http://www.ietf.org/rfc/rfc3775.txt>)
- (2) RFC3776: Using IPsec to Protect Mobile IPv6 Signaling between Mobile Nodes and Home Agents
(<http://www.ietf.org/rfc/rfc3776.txt>)
- (3) RFC4877: Mobile IPv6 Operation with IKEv2 and the Revised IPsec Architecture
(<http://www.ietf.org/rfc/rfc4877.txt>)
- (4) IPv6 Ready Logo Phase-2 Mobile IPv6 Policy
(http://www.ipv6ready.org/about_phase2_test.html)
- (5) IPv6 Ready Logo Phase-2 Mobile IPv6 Test Specification Profile
(http://www.ipv6ready.org/about_phase2_test.html)

2 Common Topology

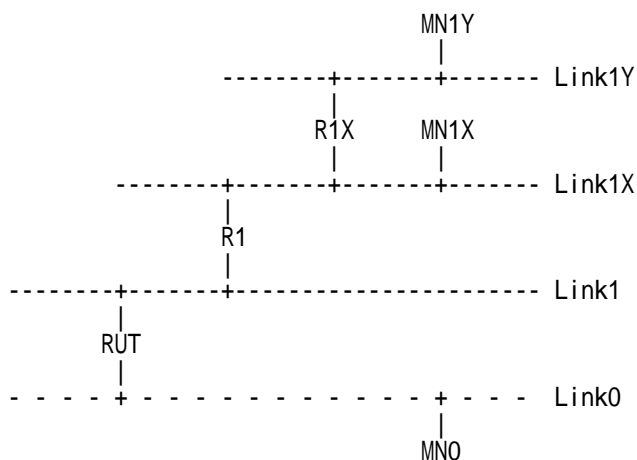
2.1 Common Topology-1

- Real Home Link (If RUT supports Real Home Link.)



Link0	global	3ffe:501:ffff:100::/64	home link
Link0X	global	3ffe:501:ffff:1100::/64	foreign link
Link0Y	global	3ffe:501:ffff:2100::/64	foreign link
RUT (Link0)	global	3ffe:501:ffff:100::<NutDef.Link0_addr>	
	global	3ffe:501:ffff:100:fdff:fff:fff:ffe	anycast
	link-local	fe80::<NutDef.Link0_addr>	
	ether	<NutDef.Link0_addr>	
R0 (Link0)	global	3ffe:501:ffff:100:200:ff:fe00:a0a0	
	link-local	fe80::200:ff:fe00:a0a0	
	ether	00:00:00:00:a0:a0	
MNO	global	3ffe:501:ffff:100:200:ff:fe00:1	home address
	link-local	fe80::200:ff:fe00:1	
	ether	00:00:00:00:00:01	
MNOX	global	3ffe:501:ffff:1100:200:ff:fe00:1	care-of address
MNOY	global	3ffe:501:ffff:2100:200:ff:fe00:1	care-of address

- Virtual Home Link (If RUT supports Virtual Home Link.)

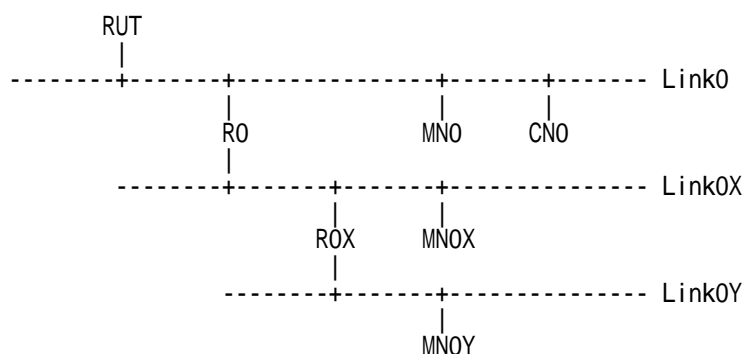


Link0	global	3ffe:501:ffff:100::/64	home link
Link1	global	3ffe:501:ffff:101::/64	foreign link
Link1X	global	3ffe:501:ffff:1101::/64	foreign link
Link1Y	global	3ffe:501:ffff:2101::/64	foreign link
RUT (Link0)	global	3ffe:501:ffff:100::<NutDef.Link0_addr>	
	global	3ffe:501:ffff:100:fdff:ffff:ffff:fffe	anycast
	link-local	fe80::<NutDef.Link0_addr>	
	ether	<NutDef.Link0_addr>	
RUT (Link1)	global	3ffe:501:ffff:101::<NutDef.Link1_addr>	
	link-local	fe80::<NutDef.Link1_addr>	
	ether	<NutDef.Link1_addr>	
R1 (Link1)	global	3ffe:501:ffff:101:200:ff:fe00:a1a1	
	link-local	fe80::200:ff:fe00:a1a1	
	ether	00:00:00:00:a1:a1	
MNO	global	3ffe:501:ffff:100:200:ff:fe00:1	home address
MN1X	global	3ffe:501:ffff:1101:200:ff:fe00:1	care-of address
MN1Y	global	3ffe:501:ffff:2101:200:ff:fe00:1	care-of address

2.2 Common Topology-2

There is CN in Real Home Link.

- Real Home Link (If RUT supports Real Home Link.)

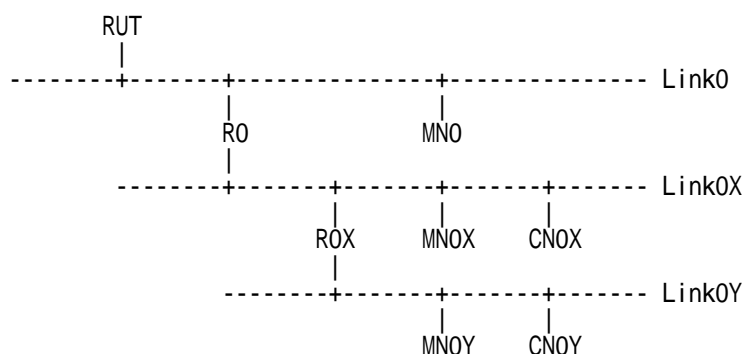


Link0	global	3ffe:501:ffff:100::/64	home link
Link0X	global	3ffe:501:ffff:1100::/64	foreign link
Link0Y	global	3ffe:501:ffff:2100::/64	foreign link
RUT (Link0)	global	3ffe:501:ffff:100::<NutDef.Link0_addr>	
	global	3ffe:501:ffff:100:fdff:fff:fff:ffe	anycast
	link-local	fe80::<NutDef.Link0_addr>	
	ether	<NutDef.Link0_addr>	
R0 (Link0)	global	3ffe:501:ffff:100:200:ff:fe00:a0a0	
	link-local	fe80::200:ff:fe00:a0a0	
	ether	00:00:00:00:a0:a0	
CNO	global	3ffe:501:ffff:100::<TnDef.Link0_addr>	correspondent node
	link-local	fe80::<TnDef.Link0_addr>	
	ether	<TnDef.Link0_addr>	
MNO	global	3ffe:501:ffff:100:200:ff:fe00:1	home address
	link-local	fe80::200:ff:fe00:1	
	ether	00:00:00:00:00:01	
MNOX	global	3ffe:501:ffff:1100:200:ff:fe00:1	care-of address
MNOY	global	3ffe:501:ffff:2100:200:ff:fe00:1	care-of address

2.3 Common Topology-3

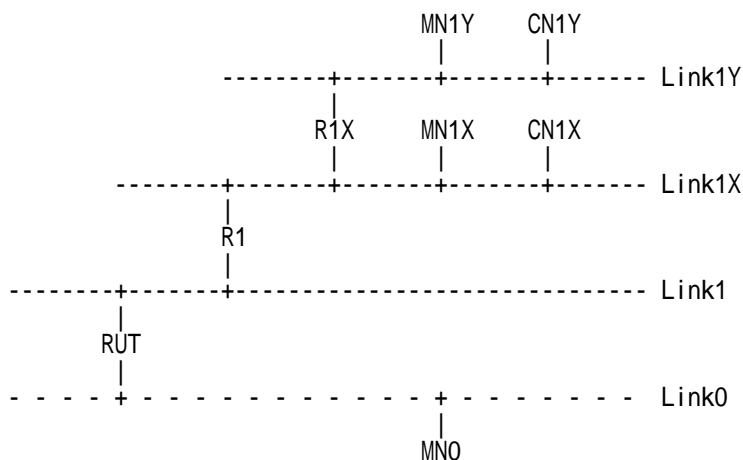
There are CN in Foreign Link.

- Real Home Link (If RUT supports Real Home Link.)



Link0	global	3ffe:501:ffff:100::/64	home link
Link0X	global	3ffe:501:ffff:1100::/64	foreign link
Link0Y	global	3ffe:501:ffff:2100::/64	foreign link
RUT (Link0)	global	3ffe:501:ffff:100:::<NutDef.Link0_addr>	
	global	3ffe:501:ffff:100:fdff:ffff:ffff:fffe	anycast
	link-local	fe80:::<NutDef.Link0_addr>	
	ether	<NutDef.Link0_addr>	
R0 (Link0)	global	3ffe:501:ffff:100:200:ff:fe00:a0a0	
	link-local	fe80::200:ff:fe00:a0a0	
	ether	00:00:00:00:a0:a0	
R0X	global	3ffe:501:ffff:1100:200:ff:fe00:a0a0	
MNO	global	3ffe:501:ffff:100:200:ff:fe00:1	home address
	link-local	fe80::200:ff:fe00:1	
	ether	00:00:00:00:00:01	
MNOX	global	3ffe:501:ffff:1100:200:ff:fe00:1	care-of address
MNOY	global	3ffe:501:ffff:2100:200:ff:fe00:1	care-of address
CNOX	global	3ffe:501:ffff:1100:::<TnDef.Link0_addr>	correspondent node
CNOY	global	3ffe:501:ffff:2100:::<TnDef.Link0_addr>	correspondent node

- Virtual Home Link (If RUT supports Virtual Home Link.)

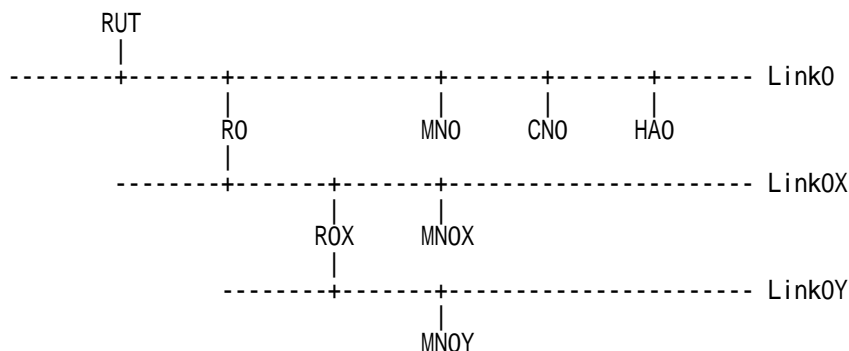


Link0	global	3ffe:501:ffff:100::/64	home link
Link1	global	3ffe:501:ffff:101::/64	foreign link
Link1X	global	3ffe:501:ffff:1101::/64	foreign link
Link1Y	global	3ffe:501:ffff:2101::/64	foreign link
RUT (Link0)	global	3ffe:501:ffff:100::<NutDef.Link0_addr>	
	global	3ffe:501:ffff:100:fdff:ffff:ffff:ffe	anycast
	link-local	fe80::<NutDef.Link0_addr>	
	ether	<NutDef.Link0_addr>	
RUT (Link1)	global	3ffe:501:ffff:100::<NutDef.Link1_addr>	
	link-local	fe80::<NutDef.Link1_addr>	
	ether	<NutDef.Link1_addr>	
R1 (Link1)	global	3ffe:501:ffff:101:200:ff:fe00:a1a1	
	link-local	fe80::200:ff:fe00:a1a1	
	ether	00:00:00:00:a1:a1	
R1X	global	3ffe:501:ffff:1101:200:ff:fe00:a1a1	
MN0	global	3ffe:501:ffff:100:200:ff:fe00:1	home address
MN1X	global	3ffe:501:ffff:1101:200:ff:fe00:1	care-of address
MN1Y	global	3ffe:501:ffff:2101:200:ff:fe00:1	care-of address
CN1X	global	3ffe:501:ffff:1101::<TnDef.Link1_addr>	correspondent node
CN1Y	global	3ffe:501:ffff:2101::<TnDef.Link1_addr>	correspondent node

2.4 Common Topology-4

There are CN0 and HA0 in Real Home Link.

- Real Home Link (If RUT supports Real Home Link.)

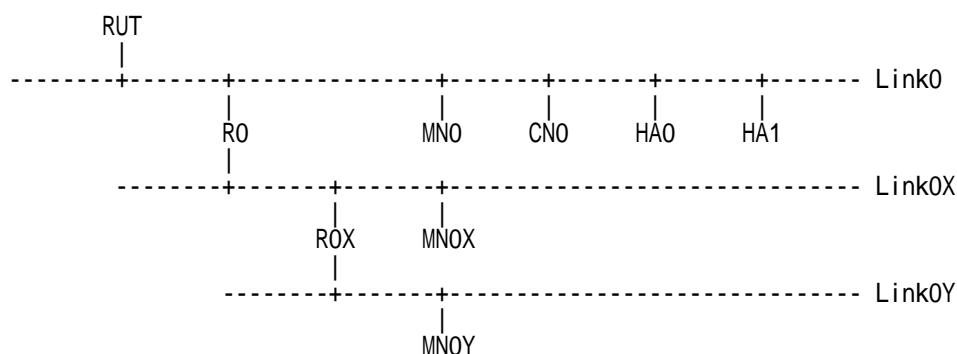


Link0	global	3ffe:501:fff:100::/64	home link
Link0X	global	3ffe:501:fff:1100::/64	foreign link
Link0Y	global	3ffe:501:fff:2100::/64	foreign link
RUT (Link0)	global	3ffe:501:fff:100::<NutDef.Link0_addr>	
	global	3ffe:501:fff:100:fdff:fff:fff:ffe	anycast
	link-local	fe80::<NutDef.Link0_addr>	
	ether	<NutDef.Link0_addr>	
R0 (Link0)	global	3ffe:501:fff:100:200:ff:fe00:a0a0	
	link-local	fe80::200:ff:fe00:a0a0	
	ether	00:00:00:00:a0:a0	
CN0	global	3ffe:501:fff:100::<TnDef.Link0_addr>	correspondent node
	link-local	fe80::<TnDef.Link0_addr>	
	ether	<TnDef.Link0_addr>	
HA0	global	3ffe:501:fff:100:200:ff:fe00:a2a2	home agent
	link-local	fe80::200:ff:fe00:a2a2	
	ether	00:00:00:00:a2:a2	
MNO	global	3ffe:501:fff:100:200:ff:fe00:1	home address
	link-local	fe80::200:ff:fe00:1	
	ether	00:00:00:00:00:01	
MNOX	global	3ffe:501:fff:1100:200:ff:fe00:1	care-of address
MNOY	global	3ffe:501:fff:2100:200:ff:fe00:1	care-of address

2.5 Common Topology-5

There are CN0, HA0, and HA1 in Real Home Link.

- Real Home Link (If RUT supports Real Home Link.)

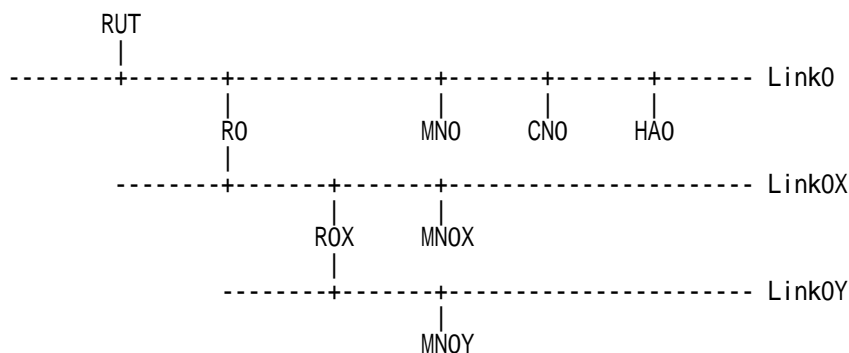


Link0	global	3ffe:501:ffff:100::/64	home link
Link0X	global	3ffe:501:ffff:1100::/64	foreign link
Link0Y	global	3ffe:501:ffff:2100::/64	foreign link
RUT (Link0)	global	3ffe:501:ffff:100:::<NutDef.Link0_addr>	
	global	3ffe:501:ffff:100:fdff:ffff:ffff:fffe	anycast
	link-local	fe80:::<NutDef.Link0_addr>	
	ether	<NutDef.Link0_addr>	
R0 (Link0)	global	3ffe:501:ffff:100:200:ff:fe00:a0a0	
	link-local	fe80::200:ff:fe00:a0a0	
	ether	00:00:00:00:a0:a0	
CN0	global	3ffe:501:ffff:100:::<TnDef.Link0_addr>	correspondent node
	link-local	fe80:::<TnDef.Link0_addr>	
	ether	<TnDef.Link0_addr>	
HA0	global	3ffe:501:ffff:100:200:ff:fe00:a2a2	home agent
	link-local	fe80::200:ff:fe00:a2a2	
	ether	00:00:00:00:a2:a2	
HA1	global	3ffe:501:ffff:100:200:ff:fe00:a3a3	home agent
	link-local	fe80::200:ff:fe00:a3a3	
	ether	00:00:00:00:a3:a3	
MNO	global	3ffe:501:ffff:100:200:ff:fe00:1	home address
	link-local	fe80::200:ff:fe00:1	
	ether	00:00:00:00:00:01	
MNOX	global	3ffe:501:ffff:1100:200:ff:fe00:1	care-of address
MNOY	global	3ffe:501:ffff:2100:200:ff:fe00:1	care-of address

2.6 Common Topology-6

There are CN0 and HA0 in Real Home Link.
HA0 has two global address.

- Real Home Link (If RUT supports Real Home Link.)

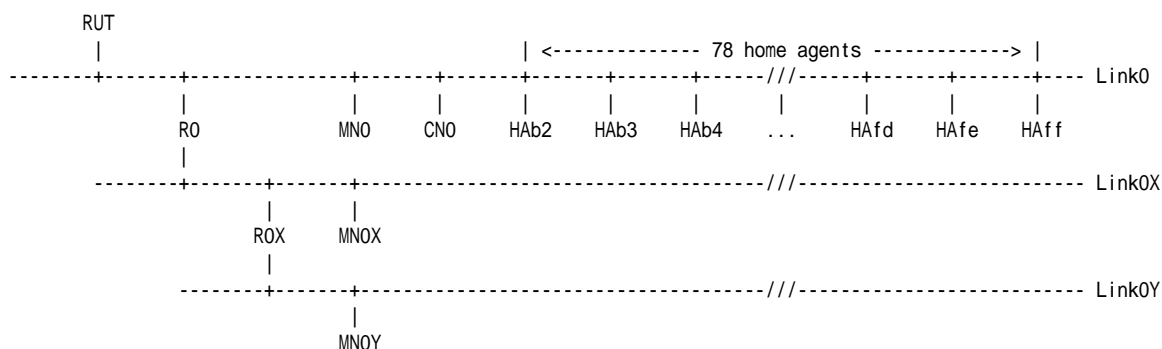


Link0	global	3ffe:501:ffff:100::/64	home link
Link0X	global	3ffe:501:ffff:1100::/64	foreign link
Link0Y	global	3ffe:501:ffff:2100::/64	foreign link
RUT (Link0)	global	3ffe:501:ffff:100::<NutDef.Link0_addr>	
	global	3ffe:501:ffff:100:fdff:fff:fff:ffe	anycast
	link-local	fe80::<NutDef.Link0_addr>	
	ether	<NutDef.Link0_addr>	
R0 (Link0)	global	3ffe:501:ffff:100:200:ff:fe00:a0a0	
	link-local	fe80::200:ff:fe00:a0a0	
	ether	00:00:00:00:a0:a0	
CN0	global	3ffe:501:ffff:100::<TnDef.Link0_addr>	correspondent node
	link-local	fe80::<TnDef.Link0_addr>	
	ether	<TnDef.Link0_addr>	
HA0	global	3ffe:501:ffff:100:200:ff:fe00:a2a2	home agent
		3ffe:501:ffff:100:200:ff:fe00:a3a3	
	link-local	fe80::200:ff:fe00:a2a2	
	ether	00:00:00:00:a2:a2	
MNO	global	3ffe:501:ffff:100:200:ff:fe00:1	home address
	link-local	fe80::200:ff:fe00:1	
	ether	00:00:00:00:00:01	
MNOX	global	3ffe:501:ffff:1100:200:ff:fe00:1	care-of address
MNOY	global	3ffe:501:ffff:2100:200:ff:fe00:1	care-of address

2.7 Common Topology-7

There are CN0 and a lot of HA0 in Real Home Link.

- Real Home Link (If RUT supports Real Home Link.)



Link0	global	3ffe:501:ffff:100::/64	home link
Link0X	global	3ffe:501:ffff:1100::/64	foreign link
Link0Y	global	3ffe:501:ffff:2100::/64	foreign link
RUT (Link0)	global	3ffe:501:ffff:100::<NutDef.Link0_addr>	
	global	3ffe:501:ffff:100:fdff:ffff:ffff:fffe	anycast
	link-local	fe80::<NutDef.Link0_addr>	
	ether	<NutDef.Link0_addr>	
R0 (Link0)	global	3ffe:501:ffff:100:200:ff:fe00:a0a0	
	link-local	fe80::200:ff:fe00:a0a0	
	ether	00:00:00:00:a0:a0	
CN0	global	3ffe:501:ffff:100::<TnDef.Link0_addr>	correspondent node
	link-local	fe80::<TnDef.Link0_addr>	
	ether	<TnDef.Link0_addr>	
HAb2	global	3ffe:501:ffff:100:200:4dff:fe00:b2	home agent
	link-local	fe80::200:4dff:fe00:b2	
	ether	00:00:4d:00:00:b2	
HAb3	global	3ffe:501:ffff:100:200:4cff:fe00:b3	home agent
	link-local	fe80::200:4cff:fe00:b3	
	ether	00:00:4c:00:00:b3	
HAb4	global	3ffe:501:ffff:100:200:4bff:fe00:b4	home agent
	link-local	fe80::200:4bff:fe00:b4	
	ether	00:00:4b:00:00:b4	
...
HAfd	global	3ffe:501:ffff:100:200:2ff:fe00:fd	home agent
	link-local	fe80::200:2ff:fe00:fd	
	ether	00:00:02:00:00:fd	
HAfe	global	3ffe:501:ffff:100:200:1ff:fe00:fe	home agent
	link-local	fe80::200:1ff:fe00:fe	



	ether	00:00:01:00:00:fe	
HAff	global	3ffe:501:ffff:100:200:ff:fe00:ff	home agent
	link-local	fe80::200:ff:fe00:ff	
	ether	00:00:00:00:00:ff	
MN0	global	3ffe:501:ffff:100:200:ff:fe00:1	home address
	link-local	fe80::200:ff:fe00:1	
	ether	00:00:00:00:00:01	
MN0X	global	3ffe:501:ffff:1100:200:ff:fe00:1	care-of address
MN0Y	global	3ffe:501:ffff:2100:200:ff:fe00:1	care-of address

3 Common Setup

3.1 Common Setup-1

- Reboot RUT
- Assign the global addresses

interface	address	type	note
<NutDef.Link0_device>	3ffe:501:ffff:100::<NutDef.Link0_addr>	unicast	
	3ffe:501:ffff:100:fdff:ffff:ffff:fffe	anycast	Mobile IPv6 Home- Agents anycast address
<NutDef.Link1_device>	3ffe:501:ffff:101::<NutDef.Link1_addr>	unicast	

- Enable HA function
 - Turn on HA functions
- Configure routing table of RUT
 - HA has only physical home link

destination	gateway	interface
default	fe80::200:ff:fe00:a0a0	<NutDef.Link0_device>

- HA has physical home link and physical foreign link

destination	gateway	interface
default	fe80::200:ff:fe00:a0a0	<NutDef.Link0_device>
3ffe:501:ffff:1101::/64	fe80::200:ff:fe00:a1a1	<NutDef.Link1_device>
3ffe:501:ffff:2101::/64	fe80::200:ff:fe00:a1a1	<NutDef.Link1_device>
3ffe:501:ffff:3101::/64	fe80::200:ff:fe00:a1a1	<NutDef.Link1_device>

- HA has virtual home link and physical foreign link

destination	gateway	interface
default	fe80::200:ff:fe00:a1a1	<NutDef.Link1_device>

- Configure the IPsec
 - The tests require following configurations, if a related message is used.
 - *SA7 and SA8 are not used on the all test.

- ESP transport mode (BU/BA)
 - SA1 (inbound ESP transport mode)

SPI	0x111 (273)	
Source address	MN	3ffe:501:ffff:100:200:ff:fe00:1
Destination address	HA	3ffe:501:ffff:100::<Interface ID>
Mode	ESP Transport	
Upper Layer		Mobility Header (default)
		Binding Update Message

		(Advance Function "Fine-Grain Selectors")
encryption algorithm	3des-cbc (default)	
	key	V6LC-111--12345678901234
Authentication algorithm	hmac-sha1 (default)	
	key	V6LC-111--1234567890

- SA2 (outbound ESP transport mode)

SPI	0x112 (274)	
Source address	HA	3ffe:501:ffff:100::<Interface ID>
Destination address	MN	3ffe:501:ffff:100:200:ff:fe00:1
Mode	ESP Transport	
Upper Layer	Mobility Header (default)	
	Binding Acknowledgement Message (Advance Function "Fine-Grain Selectors")	
encryption algorithm	3des-cbc (default)	
	key	V6LC-112--12345678901234
Authentication algorithm	hmac-sha1 (default)	
	key	V6LC-112--1234567890

- ESP tunnel mode (HoTI/HoT)

- SA3 (inbound ESP tunnel mode)

SPI	0x113 (275)	
Source address	MN	3ffe:501:ffff:100:200:ff:fe00:1
Destination address	HA	3ffe:501:ffff:100::<Interface ID>
Mode	ESP Tunnel	
Upper Layer	Mobility Header (default)	
	Home Test Init Message (Advance Function "Fine-Grain Selectors")	
encryption algorithm	3des-cbc (default)	
	key	V6LC-113--12345678901234
Authentication algorithm	hmac-sha1 (default)	
	key	V6LC-113--1234567890

- SA4 (outbound ESP tunnel mode)

SPI	0x114 (276)	
Source address	HA	3ffe:501:ffff:100::<Interface ID>
Destination address	MN	3ffe:501:ffff:100:200:ff:fe00:1
Mode	ESP Tunnel	
Upper Layer	Mobility Header (default)	
	Home Test Message (Advance Function "Fine-Grain Selectors")	
encryption algorithm	3des-cbc (default)	
	key	V6LC-114--12345678901234
Authentication algorithm	hmac-sha1 (default)	

algorithm	key	V6LC-114--123456
-----------	-----	------------------

➤ ESP transport mode (MPS/MPA)

● SA5 (inbound ESP transport mode)

SPI	0x115 (277)	
Source address	MN 3ffe:501:ffff:100:200:ff:fe00:1	
Destination address	HA 3ffe:501:ffff:100::<Interface ID>	
Mode	ESP Transport	
Upper Layer	ICMPv6 (default)	
	Mobile Prefix Solicitation Message (Advance Function "Fine-Grain Selectors")	
encryption algorithm	3des-cbc (default)	
	key	V6LC-115--12345678901234
Authentication algorithm	hmac-sha1 (default)	
	key	V6LC-115--1234567890

● MN-HA0 SA6, Transport mode, Prefix Discovery

SPI	0x116 (278)	
Source address	HA	3ffe:501:ffff:100::<Interface ID>
Destination address	MN	3ffe:501:ffff:100:200:ff:fe00:1
Mode	ESP Transport	
Upper Layer	ICMPv6 (default)	
	Mobile Prefix Advertisement Message (Advance Function "Fine-Grain Selectors")	
encryption algorithm	3des-cbc (default)	
	key	V6LC-116--12345678901234
Authentication algorithm	hmac-sha1 (default)	
	key	V6LC-116--1234567890

➤ ESP tunnel mode (Payload Packets)

● SA7 (inbound ESP tunnel mode)

SPI	0x117 (279)	
Source address	MN	3ffe:501:ffff:100:200:ff:fe00:1
Destination address	HA	3ffe:501:ffff:100::<Interface ID>
Mode	ESP Tunnel	
Upper Layer	X (No using)	
encryption algorithm	3des-cbc (default)	
	key	V6LC-117--12345678901234
Authentication algorithm	hmac-sha1 (default)	
	key	V6LC-117--1234567890

● SA8 (outbound ESP tunnel mode)

SPI	0x118 (280)	
Source address	HA	3ffe:501:ffff:100::<Interface ID>



Destination address	MN	3ffe:501:ffff:100:200:ff:fe00:1
Mode	ESP Tunnel	
Upper Layer	X (No using)	
encryption algorithm	3des-cbc (default)	
	key	V6LC-118--12345678901234
Authentication algorithm	hmac-sha1 (default)	
	key	V6LC-118--123456

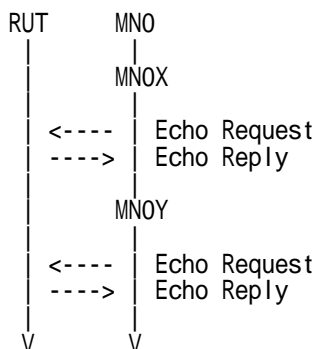
- Real Home Link (If RUT supports Real Home Link.)
 - Configure RA parameter
 - Set Home Agent Flag to ON
 - Attach Home Agent Information Option
 - Set Home Agent Preference to 10
 - Attach Prefix Information Option
 - Set Router Address Flag to ON
 - Set Prefix field to Home Agent Address

4 Common Initialization

4.1 Common Initialization-1

- Real Home Link

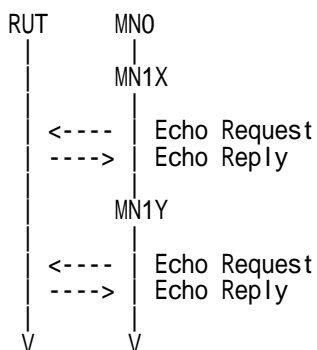
Check Link0 routing table



1. MN0X sends Echo Request (Refer to 5.5.1)
2. MN0X receives Echo Reply (Refer to 5.6.1)
3. MN0Y sends Echo Request (Refer to 5.5.1)
4. MN0Y receives Echo Reply (Refer to 5.6.1)

- Virtual Home Link

Check Link1 routing table



1. MN1X sends Echo Request (Refer to 5.5.1)
2. MN1X receives Echo Reply (Refer to 5.6.1)
3. MN1Y sends Echo Request (Refer to 5.5.1)
4. MN1Y receives Echo Reply (Refer to 5.6.1)

5 Common Packets

5.1 ICMPv6 Router Solicitation

5.1.1 Router Solicitation

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133
	Code	0

5.2 ICMPv6 Router Advertisement

5.2.1 Router Advertisement

IPv6 Header	Source Address	(Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	Code	0
	Cur Hop Hoplimit	64
	M Flag	0
	O Flag	0
	H Flag	1
	Router Lifetime	Any
	Reachable time	0
	Retrans timer	0
	Home Agent Information Option	Type
Home Agent Preference		Any
Home Agent Lifetime		Any
Prefix Information Option	Type	3
	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	0/1
	Valid Lifetime	Any
	Preferred Lifetime	Any
	Prefix	(prefix/global)

5.3 ICMPv6 Neighbor Solicitation

5.3.1 Neighbor Solicitation (Duplicate Address Detection)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(Solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	(global/link-local)

5.3.2 Neighbor Solicitation (Address Resolution)

IPv6 Header	Source Address	(global/link-local)
	Destination Address	(Solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	(global/link-local)
SLL Option	Type	1
	Link Layer Address	(ether)

5.3.3 Neighbor Solicitation (Neighbor Unreachability Detection)

IPv6 Header	Source Address	(global/link-local)
	Destination Address	(global/link-local)
ICMPv6 Header	Type	135
	Target Address	(global/link-local)
SLL Option	Type	1
	Link Layer Address	(ether)

5.4 ICMPv6 Neighbor Advertisement

5.4.1 Neighbor Advertisement (Duplicate Address Detection)

IPv6 Header	Source Address	(global/link-local)
	Destination Address	(All-node multicast address)
ICMPv6 Header	Type	136
	R Flag	Any
	S Flag	Any
	O Flag	Any
	Target Address	(global/link-local)

5.4.2 Neighbor Advertisement (Address Resolution)

IPv6 Header	Source Address	(global/link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	136
	R Flag	Any
	S Flag	Any
	O Flag	Any
	Target Address	(global/link-local)
	TTL Option	Type
	Link Layer Address	(ether)

5.4.3 Neighbor Advertisement (Neighbor Unreachability Detection)

IPv6 Header	Source Address	(global/link-local)
	Destination Address	(global/link-local)
ICMPv6 Header	Type	136
	R Flag	Any
	S Flag	Any
	O Flag	Any
	Target Address	(global/link-local)
	TTL Option	Type
	Link Layer Address	(ether)

5.5 ICMPv6 Echo request

5.5.1 ICMPv6 Echo Request

IPv6 Header	Source Address	(global/link-local)
	Destination Address	(global/link-local)
ICMPv6 Header	Type	128
	Code	0
	Identifier	Any
	Sequence Number	Any
	Payload Data	Any

5.5.2 ICMPv6 Echo Request (ESP)

a) Basic

IPv6 Header	Source Address	MN (global)
	Destination Address	HA (global)
Destination Option Header	Home Address	MN (global)
Encapsulating Security Payload	Security Parameters Index	Any
	Sequence Number	Any
	Initialization Vector	Any
ICMPv6 Header	Type	128
	Code	0
	Identifier	Any
	Sequence Number	Any
	Payload Data	Any

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN (global)
	Destination Address	HA (global)
Destination Option Header	Home Address	MN (global)
ICMPv6 Header	Type	128
	Code	0
	Identifier	Any
	Sequence Number	Any
	Payload Data	Any

5.5.3 ICMPv6 Echo Request (tunneled)

IPv6 Header	Source Address	MN (global)
	Destination Address	HA (global)
IPv6 Header	Source Address	MN (global)
	Destination Address	CN (global)
ICMPv6 Header	Type	128
	Code	0
	Identifier	Any
	Sequence Number	Any
	Payload Data	Any

5.6 ICMPv6 Echo reply

5.6.1 ICMPv6 Echo Reply

IPv6 Header	Source Address	(global/link-local)
	Destination Address	(global/link-local)
ICMPv6 Header	Type	129
	Code	0
	Identifier	Any
	Sequence Number	Any
	Payload Data	Any

5.6.2 ICMPv6 Echo Reply (RH2)

IPv6 Header	Source Address	CN (global)
	Destination Address	MN (global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN (global)
ICMPv6 Header	Type	129
	Code	0
	Identifier	Any
	Sequence Number	Any
	Payload Data	Any

5.6.3 ICMPv6 Echo Reply (RH2,ESP)

a) Basic

IPv6 Header	Source Address	HA (global)
	Destination Address	MN (global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN (global)
Encapsulating Security Payload	Security Parameters Index	Any
	Sequence Number	Any
	Initialization Vector	Any
ICMPv6 Header	Type	129
	Code	0
	Identifier	Any
	Sequence Number	Any
	Payload Data	Any

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	HA (global)
	Destination Address	MN (global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN (global)
ICMPv6 Header	Type	129
	Code	0
	Identifier	Any
	Sequence Number	Any
	Payload Data	Any

5.7 MIPv6 Home Test Init

5.7.1 Home Test Init (ESP)

IPv6 Header	Source Address	MN (global)
	Destination Address	HA (global)
Encapsulating Security Payload	Security Parameters Index	Any
	Sequence Number	Any
	Initialization Vector	Any
IPv6 Header	Source Address	MN (global)
	Destination Address	CN (global)
Mobility Header	Payload Prot	59
	Header Len	1
	MH Type	1
	Reserved	0
	Checksum	Any
	Hot Init Cookie	Any

5.7.2 Home Test Init

IPv6 Header	Source Address	MN (global)
	Destination Address	CN (global)
Mobility Header	Payload Prot	59
	Header Len	1
	MH Type	1
	Reserved	0
	Checksum	Any
	Hot Init Cookie	Any

5.7.3 Home Test Init (tunneled)

IPv6 Header	Source Address	MN (global)
	Destination Address	HA (global)
IPv6 Header	Source Address	MN (global)
	Destination Address	CN (global)
Mobility Header	Payload Prot	59
	Header Len	1
	MH Type	1
	Reserved	0
	Checksum	Any
	Hot Init Cookie	Any

5.8 MIPv6 Home Test

5.8.1 Home Test

IPv6 Header	Source Address	CN (global)
	Destination Address	MN (global)
Mobility Header	Payload Prot	59
	Header Len	2
	MH Type	3
	Reserved	0
	Checksum	Any
	Home Nonce Index	Any
	Hot Init Cookie	Any
	Home Keygen Nonce	Any

5.8.2 Home Test (ESP)

IPv6 Header	Source Address	HA (global)
	Destination Address	MN (global)
	Security Parameters Index	Any
	Sequence Number	Any
Encapsulating Security Payload	Initialization Vector	Any
	Source Address	CN (global)
	Destination Address	MN (global)
	Mobility Header	Payload Prot
Header Len		2
MH Type		3
Reserved		0
Checksum		Any
Home Nonce Index		Any
Hot Init Cookie		Any
Home Keygen Nonce		Any

5.9 MIPv6 Binding Update

5.9.1 Binding Update w/ HaO

IPv6 Header	Source Address	MN (global)
	Destination Address	HA (global)
Destination Option Header	Home Address	MN (global)
Encapsulating Security Payload	Security Parameters Index	Any
	Sequence Number	Any
	Initialization Vector	Any
	Mobility Header	Payload Prot
Header Len		3
MH Type		5
Reserved		0
Checksum		Any
Sequence Number		Any
A Flag		Any
H Flag		1
L Flag		Any
K Flag		Any
Reserved		0
Lifetime		Any
PadN Option		Option Type
	Option Length	4
	Pad	Any
Alternate Care-of Address Option	Type	3
	Option Length	16
	Address	MN (global)

5.9.2 Binding Update w/o HaO

IPv6 Header	Source Address	MN (global)
	Destination Address	HA (global)
Encapsulating Security Payload	Security Parameters Index	Any
	Sequence Number	Any
	Initialization Vector	Any
	Mobility Header	Payload Prot
Header Len		3
MH Type		5
Reserved		0
Checksum		Any
Sequence Number		Any
A Flag		Any
H Flag		1
L Flag		Any
K Flag		Any
Reserved		0
Lifetime		Any
PadN Option		Option Type
	Option Length	4
	Pad	Any
Alternate Care-of Address Option	Type	3
	Option Length	16
	Address	MN (global)

5.9.3 Binding Update w/o ESP

IPv6 Header	Source Address	MN (global)
	Destination Address	RUT (global)
Destination Option Header	Home Address	MN (global)
Mobility Header	Payload Prot	59
	Header Len	3
	MH Type	5
	Reserved	0
	Checksum	Any
	Sequence Number	Any
	A Flag	Any
	H Flag	1
	L Flag	Any
	K Flag	Any
	Reserved	0
	Lifetime	Any
	PadN Option	Option Type
Option Length		4
Pad		Any
Alternate Care-of Address Option	Type	3
	Option Length	16
	Address	MN (global)

5.10 MIPv6 Binding Acknowledgement

5.10.1 Binding Acknowledgement

IPv6 Header	Source Address	HA (global)
	Destination Address	MN (global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN (global)
Encapsulating Security Payload	Security Parameters Index	Any
	Sequence Number	Any
	Initialization Vector	Any
Mobility Header	Payload Prot	59
	Header Len	3
	MH Type	6
	Reserved	0
	Checksum	Any
	Status	Any
	K Flag	Any
	Reserved	0
	Sequence	Any (=BU)
	Lifetime	Any
Binding Refresh Advice Option	Type	2
	Length	2
	Refresh Interval	Any

5.10.2 Binding Acknowledgement w/ PadN Option

IPv6 Header	Source Address	HA (global)
	Destination Address	MN (global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN (global)
Encapsulating Security Payload	Security Parameters Index	Any
	Sequence Number	Any
	Initialization Vector	Any
Mobility Header	Payload Prot	59
	Header Len	3
	MH Type	6
	Reserved	0
	Checksum	Any
	Status	Any
	K Flag	Any
	Reserved	0
	Sequence	Any (=BU)
	Lifetime	Any
PadN Option	Option Type	1
	Option Length	Any
	Pad	Any

5.10.3 Binding Acknowledgement w/o RH2

IPv6 Header	Source Address	HA (global)	
	Destination Address	MN (global)	
Encapsulating Security Payload	Security Parameters Index	Any	
	Sequence Number	Any	
	Initialization Vector	Any	
	Payload Prot	59	
Mobility Header	Header Len	3	
	MH Type	6	
	Reserved	0	
	Checksum	Any	
	Status	Any	
	K Flag	Any	
	Reserved	0	
	Sequence	Any (=BU)	
	Lifetime	Any	
	Binding Refresh Advice Option	Type	2
		Length	2
Refresh Interval		Any	

5.10.4 Binding Acknowledgement w/o RH2 w/ PadN Option

IPv6 Header	Source Address	RUT (global)	
	Destination Address	MN (global)	
Encapsulating Security Payload	Security Parameters Index	Any	
	Sequence Number	Any	
	Initialization Vector	Any	
	Payload Prot	59	
Mobility Header	Header Len	3	
	MH Type	6	
	Reserved	0	
	Checksum	Any	
	Status	Any	
	K Flag	Any	
	Reserved	0	
	Sequence	Any (=BU)	
	Lifetime	Any	
	PadN Option	Option Type	1
		Option Length	Any
Pad		Any	

5.11 MIPv6 Binding Error

5.11.1 Binding Error

IPv6 Header	Source Address	(global)
	Destination Address	(global)
Mobility Header	Payload Prot	59
	Header Len	2
	MH Type	7
	Reserved	0
	Checksum	Any
	Status	1/2
	Reserved	0
	Home Address	(Home Address/Unspecified address)

5.11.2 Binding Error (ESP)

a) Basic

IPv6 Header	Source Address	(global)
	Destination Address	(global)
Encapsulating Security Payload	Security Parameters Index	Any
	Sequence Number	Any
	Initialization Vector	Any
	Payload Prot	59
Mobility Header	Header Len	2
	MH Type	7
	Reserved	0
	Checksum	Any
	Status	1/2
	Reserved	0
	Home Address	(Home Address/Unspecified address)

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	(global)
	Destination Address	(global)
Mobility Header	Payload Prot	59
	Header Len	2
	MH Type	7
	Reserved	0
	Checksum	Any
	Status	1/2
	Reserved	0
	Home Address	(Home Address/Unspecified address)

5.12 HAAD request

5.12.1 HAAD Request

IPv6 Header	Source Address	MN (global)
	Destination Address	(Home-Agents anycast address)
Mobility Header	Type	144
	Code	0
	Checksum	Any
	Identifier	Any
	Reserved	Any

5.13 HAAD reply

5.13.1 HAAD Reply

IPv6 Header	Source Address	HA (global)
	Destination Address	MN (global)
Mobility Header	Type	145
	Code	0
	Checksum	Any
	Identifier	Any (=HAAD Request)
	Reserved	Any
	addresses	HA (global)
		...

5.14 MPS

5.14.1 MPS

IPv6 Header	Source Address	MN (global)
	Destination Address	HA (global)
Destination Option Header	Home Address	MN (global)
Encapsulating Security Payload	Security Parameters Index	Any
	Sequence Number	Any
	Initialization Vector	Any
Mobility Header	Type	146
	Code	0
	Checksum	Any
	Identifier	Any
	Reserved	0

5.15 MPA

5.15.1 MPA

IPv6 Header	Source Address	RUT (global)
	Destination Address	MN (global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN (global)
Encapsulating Security Payload	Security Parameters Index	Any
	Sequence Number	Any
	Initialization Vector	Any
Mobility Header	Type	147
	Code	0
	Checksum	Any
	Identifier	Any
	M Flag	0
	O Flag	0
	Reserved	0
Prefix Information Option	Type	3
	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Prefix	HA (global)

5.16 ICMPv6 Destination Unreachable

5.16.1 Destination Unreachable

IPv6 Header	Source Address	(global)
	Destination Address	(global)
ICMPv6 Header	Type	1
	Code	3
	Checksum	Any
	Unused	0
	Payload Data	Any



5.17 ICMPv6 Time Exceeded

5.17.1 Time Exceeded

IPv6 Header	Source Address	(global)
	Destination Address	(global)
ICMPv6 Header	Type	3
	Code	0
	Checksum	Any
	Unused	0
	Payload Data	Any

6. Test Specification: Home Agent operation

6.1 Initialization

6.1.1 HA_0_0_0 - Initialization and general configuration

[PURPOSE]

HA_0_0_0 - Initialization and general configuration

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

[TEST SETUP]

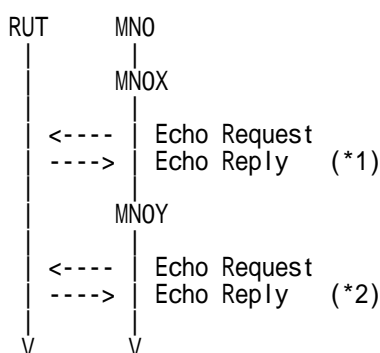
Refer to 3.1 Common Setup-1

[INITIALIZATION]

None

[PROCEDURE]

- Real Home Link
- Check Link0 routing table



1. MN0X sends Echo Request (Refer to 5.5.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
ICMPv6 Header	Type	128

2. MN0X receives Echo Reply (*1) (Refer to 5.6.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)

ICMPv6 Header	Type	129
---------------	------	-----

3. MN0Y sends Echo Request (Refer to 5.5.1)

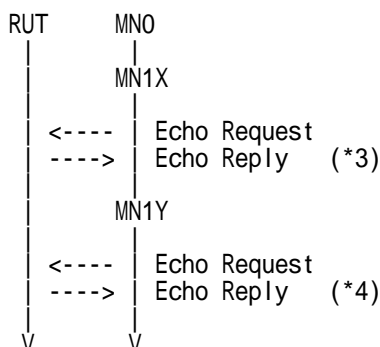
IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
ICMPv6 Header	Type	128

4. MN0Y receives Echo Reply (*2) (Refer to 5.6.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
ICMPv6 Header	Type	129

- Virtual Home Link

Check Link1 routing table



1. MN1X sends Echo Request (Refer to 5.5.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
ICMPv6 Header	Type	128

2. MN1X receives Echo Reply (*3) (Refer to 5.6.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
ICMPv6 Header	Type	129

3. MN1Y sends Echo Request (Refer to 5.5.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
ICMPv6 Header	Type	128

4. MN1Y receives Echo Reply (*4) (Refer to 5.6.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
ICMPv6 Header	Type	129

[JUDGMENT]

- Real Home Link

(*1) PASS: MN0X receives Echo Reply

(*2) PASS: MN0Y receives Echo Reply

- Virtual Home Link

(*3) PASS: MN1X receives Echo Reply

(*4) PASS: MN1Y receives Echo Reply



[REFERENCES]

NONE

6.2 Processing Mobility Headers

6.2.1 Real Home Link

6.2.1.1 HA_1_1_3 - Receiving invalid BU (invalid checksum)

[PURPOSE]

HA_1_1_3 - Receiving invalid BU (invalid checksum)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

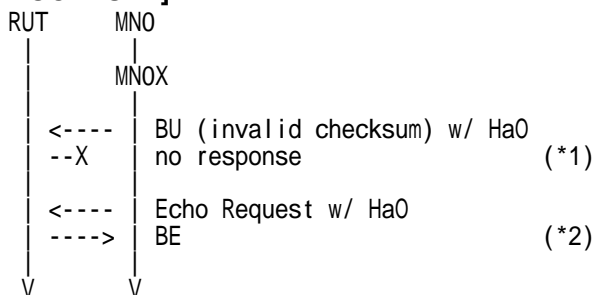
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Checksum	0
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. no response (*1)

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)



a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

(*1) PASS: no response

(*2) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.2

6.2.1.2 HA_1_1_1 - Unrecognized MH Type value

[PURPOSE]

HA_1_1_1 - Unrecognized MH Type value

[CATEGORY]

ROUTER : ADVANCED FUNCTION(REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

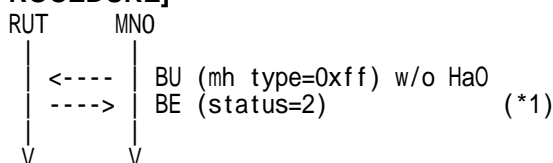
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0 sends BU w/o HaO (Refer to 5.9.2)

IPv6 Header	Source Address	MN0 (Link0_global)
	Destination Address	RUT (Link0_global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Type	0xff
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MN0 (Link0_global)

2. MN0 receives BE (*1) (Refer to 5.11.2)

a) Basic

IPv6 Header	Source Address	RUT (Link0_global)
	Destination Address	MN0 (Link0_global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	7
	Status	2
	Home Address	0::0 (Unspecified address)

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0_global)
	Destination Address	MN0 (Link0_global)
Mobility Header	MH Type	7
	Status	2
	Home Address	0::0 (Unspecified address)

[JUDGMENT]



(*1) PASS: MN0 receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.2, 9.3.3



6.2.1.3 HA_1_1_5 - Unrecognized MH Type value w/ BCE

[PURPOSE]

HA_1_1_5 - Unrecognized MH Type value w/ BCE

[CATEGORY]

ROUTER : ADVANCED FUNCTION(REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

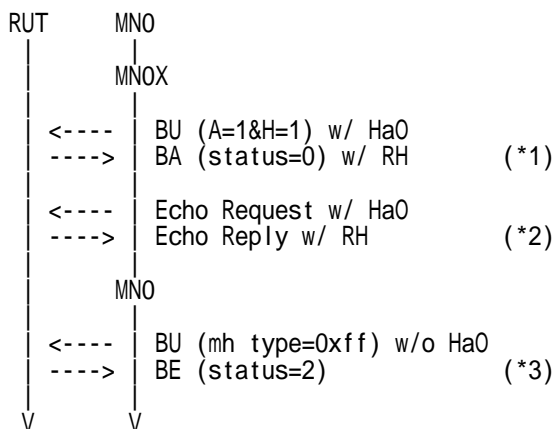
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1 SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
	PadN Option	Length
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)



Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Type	2
	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Encapsulating Security Payload	Security Parameters Index
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Encapsulating Security Payload	Security Parameters Index
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	ICMPv6 Header	Type

5. MN0 sends BU w/o HaO (Refer to 5.9.2)

a) Basic

IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	RUT (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	0xff
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
	PadN Option	Option Length
Alternate CoA Option	Address	MNO (Link0, global)

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	RUT (Link0, global)
Mobility Header	MH Type	0xff
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
	PadN Option	Option Length



Alternate CoA Option	Address	MNO (Link0, global)
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6. MN0 receives BE (*3) (Refer to 5.11.2)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	7
	Status	2
	Home Address	0::0 (Unspecified address)

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNO (Link0, global)
Mobility Header	MH Type	7
	Status	2
	Home Address	0::0 (Unspecified address)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: MN0X receives Echo Reply w/ RH

(*3) PASS: MN0 receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.2, 9.3.3

6.2.2 Virtual Home Link

6.2.2.1 HA_1_1_8 - Receiving invalid BU (invalid checksum)

[PURPOSE]

HA_1_1_8 - Receiving invalid BU (invalid checksum)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

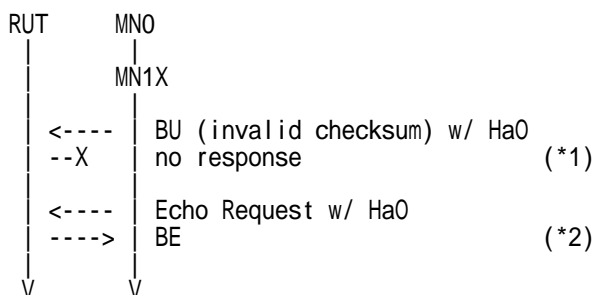
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Checksum	0
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Option Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. no response (*1)

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI



ICMPv6 Header	Type	128
---------------	------	-----

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

(*1) PASS: no response

(*2) PASS: MN1X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.2



6.3 Primary Care-of Address Registration

6.3.1 Valid Registration

6.3.1.1 Real Home Link

6.3.1.1.1 HA_2_1_1 - Receiving valid BU A=1

[PURPOSE]

HA_2_1_1 - Valid Registration (Receiving valid BU A=1)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

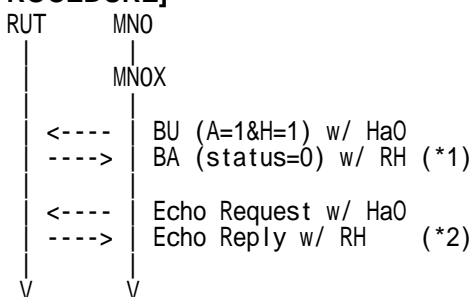
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Option Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: MN0X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1



6.3.1.1.2 HA_2_1_2 - Receiving valid BU A=0

[PURPOSE]

HA_2_1_2 - Valid Registration (Receiving valid BU A=0)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

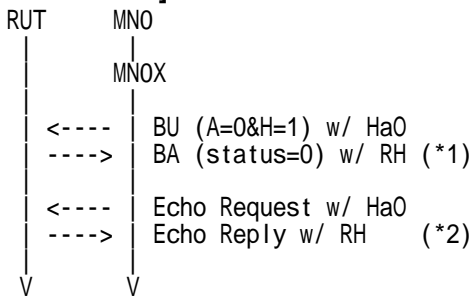
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Option Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)



Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: MN0X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1



6.3.1.1.3 HA_2_1_14 - Receiving suspicious BU non-zero reserved field

[PURPOSE]

HA_2_1_14 - Valid Registration (Receiving suspicious BU non-zero reserved field)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

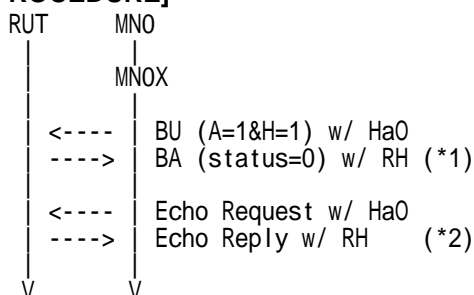
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MHType	5
	Reserved	1
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Reserved	1
	Lifetime	105
PadN Option	Option Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

[JUDGMENT]

(*1) PASS: MNOX receives BA w/ RH

(*2) PASS: MNOX receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 6.1.1, 6.1.7



6.3.1.1.4 HA_2_1_3 - Decrease lifetime

[PURPOSE]

HA_2_1_3 - Valid Registration (Decrease lifetime)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

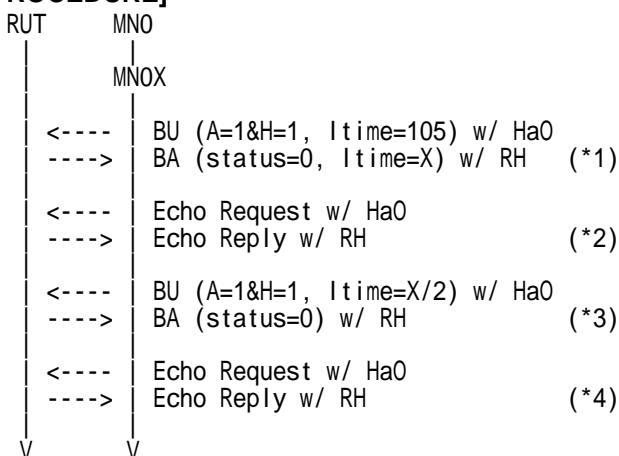
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Option Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105 =X
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
Binding Refresh Advice Option	Lifetime	<=105 =X
	Interval	<=105

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. MNOX sends BU w/ HaO (Refer to 5.9.2)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	X/2
	Option Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

6. MNOX receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
Binding Refresh Advice Option	Lifetime	<=X/2
	Interval	<=X/2



IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
PadN Option	Lifetime	<=x/2
	Length	2

7. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0X receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0X receives BA w/ RH
- (*4) PASS: MN0X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.1

6.3.1.1.5 HA_2_1_4 - Lifetime expired

[PURPOSE]

HA_2_1_4 - Valid Registration (Lifetime expired)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

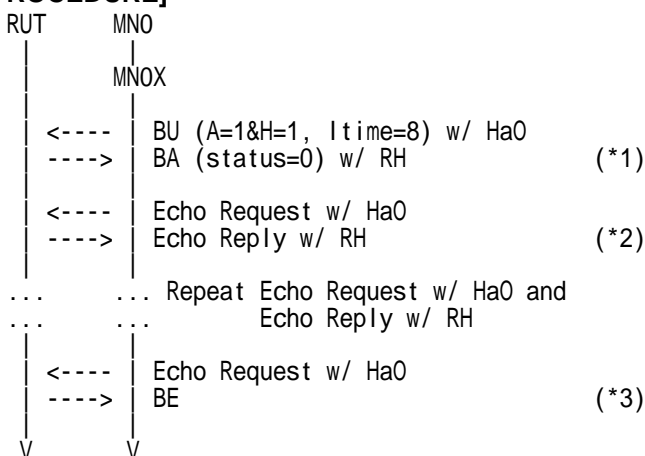
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X_global)
	Destination Address	RUT (Link0_global)
Destination Option Header	Home Address	MNO (Link0_global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	6
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	8
PadN Option	Option Length	0
Alternate CoA Option	Address	MNOX (Link0X_global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0_global)
	Destination Address	MNOX (Link0X_global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0_global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=8
Binding Refresh Advice Option	Interval	<=8

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MNOX (Link0X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MNO (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0 or 1
		K Flag	0
		Sequence	15
Lifetime		<=8	
PadN Option	Length	2	

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. Repeat Step 3 and 4 every second until the lifetime of the binding expires.

6. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

7. MNOX receives BE (*3) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MNO (Link0, global)



[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.1

6.3.1.1.6 HA_2_1_9 - Comparison of binding lifetime and prefix lifetime

[PURPOSE]

HA_2_1_9 - Comparison of binding lifetime and prefix lifetime

[CATEGORY]

ROUTER : ADVANCED FUNCTION(REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

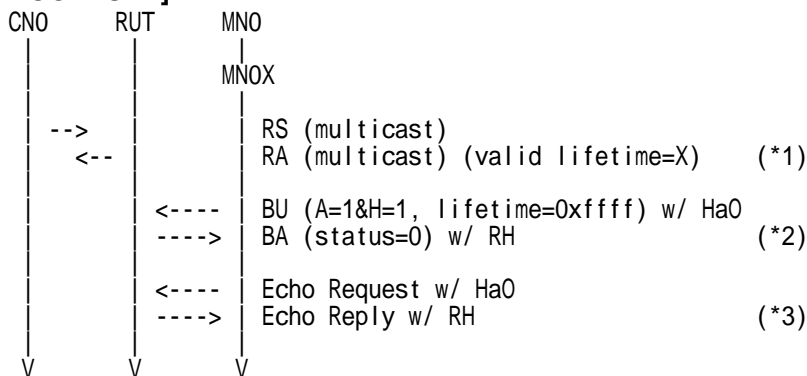
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CN0 sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0,link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Type	8
	Home Agent Preference	10
Prefix Information Option	Type	3
	R Flag	1
	Valid Lifetime	X
	Prefix	RUT (Link0, global)

3. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1

	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0xffff
PadN Option	Option Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

4. MNOX receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=X
Binding Refresh Advice Option	Interval	<=X

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=X
PadN Option	Length	2

5. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

6. MNOX receives Echo Reply w/ RH (*3) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

(*1) PASS: MNOX receives BA w/ RH

(*2) PASS: MNOX receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1



6.3.1.2 Virtual Home Link

6.3.1.2.1 HA_2_1_5 - Receiving valid BU A=1

[PURPOSE]

HA_2_1_5 - Valid Registration (Receiving valid BU A=1)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

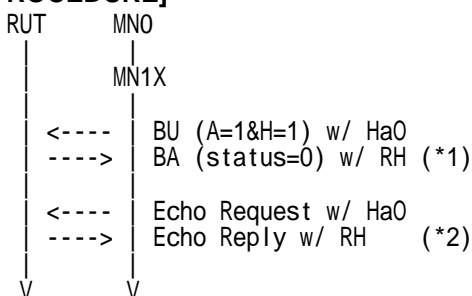
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Option Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105

Binding Refresh Advice Option	Interval	<=105
-------------------------------	----------	-------

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

(*1) PASS: MN1X receives BA w/ RH

(*2) PASS: MN1X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1



6.3.1.2.2 HA_2_1_6 - Receiving valid BU A=0

[PURPOSE]

HA_2_1_6 - Valid Registration (Receiving valid BU A=0)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

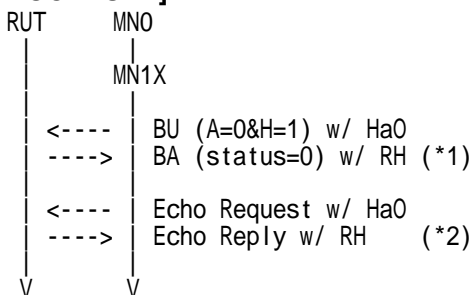
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Option Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)



Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

(*1) PASS: MN1X receives BA w/ RH

(*2) PASS: MN1X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1



6.3.1.2.3 HA_2_1_15 - Receiving suspicious BU non-zero reserved field

[PURPOSE]

HA_2_1_15 - Valid Registration (Receiving suspicious BU non-zero reserved field)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

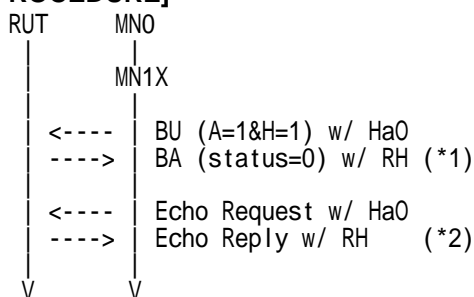
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Reserved	1
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Reserved	1
	Lifetime	105
	PadN Option	Option Length
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
	Interval	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

[JUDGMENT]

(*1) PASS: MN1X receives BA w/ RH

(*2) PASS: MN1X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 6.1.1, 6.1.7



6.3.1.2.4 HA_2_1_7 - Decrease lifetime

[PURPOSE]

HA_2_1_7 - Valid Registration (Decrease lifetime)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

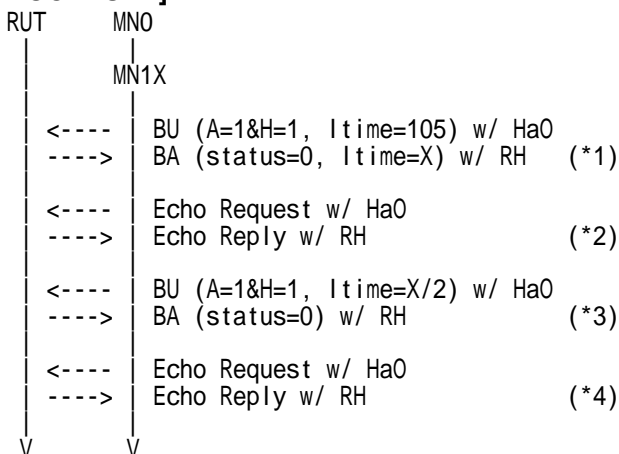
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Option Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105 =X
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
Mobility Header	Lifetime	<=105 =X
	Interval	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	X/2
	Option Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

6. MN1X receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
Mobility Header	Lifetime	<=X/2
	Interval	<=X/2
Binding Refresh Advice Option	Interval	<=X/2

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
	Lifetime	<=x/2
PadN Option	Length	2

7. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1X receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Reply w/ RH
- (*3) PASS: MN1X receives BA w/ RH
- (*4) PASS: MN1X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1

6.3.1.2.5 HA_2_1_8 - Lifetime expired

[PURPOSE]

HA_2_1_8 - Valid Registration (Lifetime expired)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

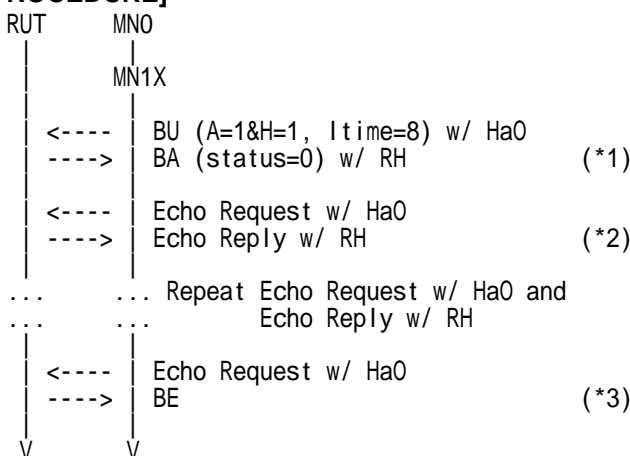
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	6
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	8
PadN Option	Option Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=8
Binding Refresh Advice Option	Interval	<=8

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=8
	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. Repeat Step 3 and 4 every second until the lifetime of the binding expires.

6. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

7. MN1X receives BE (*3) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)



[JUDGMENT]

(*1) PASS: MN1X receives BA w/ RH

(*2) PASS: MN1X receives Echo Reply w/ RH

(*3) PASS: MN1X receives BE

[REFERENCES]

RFC3775 Mobility Support in Ipv6

See Section 10.3.1

6.3.2 Invalid Registration

6.3.2.1 Real Home Link

6.3.2.1.1 HA_2_2_3 - Receiving invalid BU (unauthorization)

[PURPOSE]

HA_2_2_3 - Receiving invalid BU (unauthorization)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

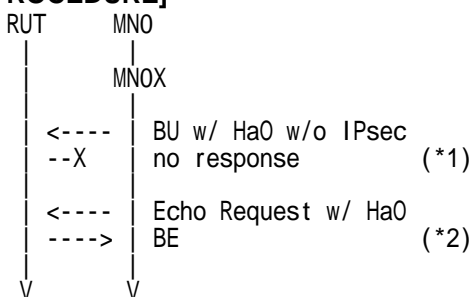
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
PadN Option	Lifetime	105
	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. no response (*1)

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)



Encapsulating Security Payload	Security Parameters Index	SA5 SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MNO (Link0, global)

[JUDGMENT]

(*1) PASS: no response

(*2) PASS: MNOX receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1



6.3.2.1.2 HA_2_2_7 - Receiving invalid BU w/ Nonce Indices option

[PURPOSE]

HA_2_2_7 - Receiving invalid BU w/ Nonce Indices option

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

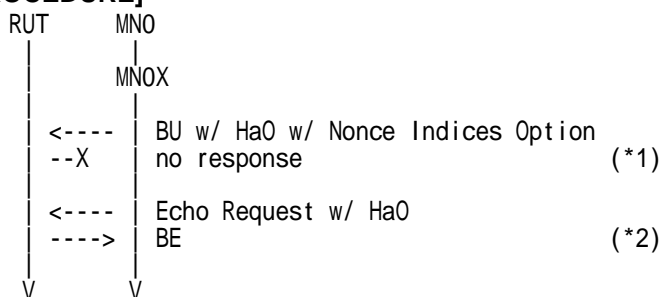
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	SPI	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
Nonce Indices Option	Nonce Index	Any
PadN Option	Length	2
Alternate CoA Option	Address	MN0X (Link0X, global)

2. no response (*1)

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SAS_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
-------------	----------------	-----------------------



	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MNO (Link0, global)

[JUDGMENT]

(*1) PASS: no response

(*2) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.5.1



6.3.2.1.3 HA_2_2_13 - Receiving invalid BU, HaO contains multicast address

[PURPOSE]

HA_2_2_13 - Receiving invalid BU, HaO contains multicast address

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

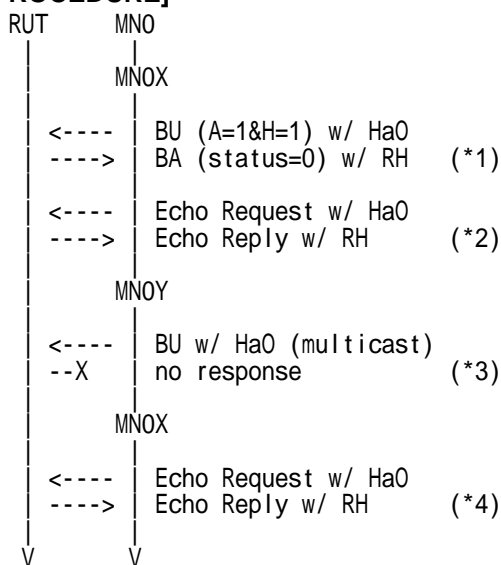
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. MNOY sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, solicited-node multicast address)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
	Option Length	0
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. no response (*3)

7. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)



Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

8. MN0X receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: no response
- (*4) PASS: MN0X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.3.1

6.3.2.2 Virtual Home Link

6.3.2.2.1 HA_2_2_6 - Receiving invalid BU (unauthorization)

[PURPOSE]

HA_2_2_6 - Receiving invalid BU (unauthorization)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

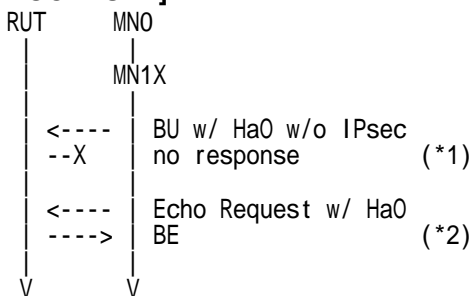
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. no response (*1)

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128



b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

(*1) PASS: no response

(*2) PASS: MN1X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1

6.3.2.2.2 HA_2_2_8 - Receiving invalid BU w/ Nonce Indices option

[PURPOSE]

HA_2_2_8 - Receiving invalid BU w/ Nonce Indices option

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

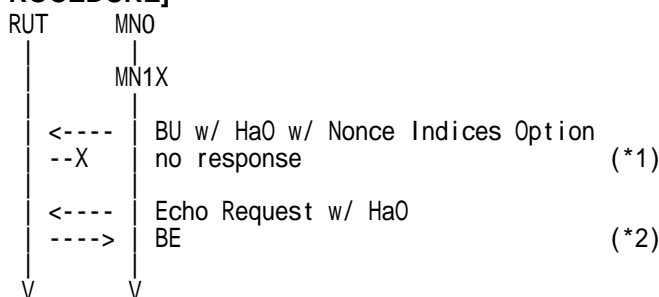
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.3)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
PadN Option	Lifetime	105
	Length	2
Alternate CoA Option	Address	MN1X (Link1X, global)

2. no response (*1)

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
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	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MNO (Link0, global)

[JUDGMENT]

(*1) PASS: no response

(*2) PASS: MN1X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.5.1



6.3.2.2.3 HA_2_2_14 - Receiving invalid BU, HaO contains multicast address

[PURPOSE]

HA_2_2_14 - Receiving invalid BU, HaO contains multicast address

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

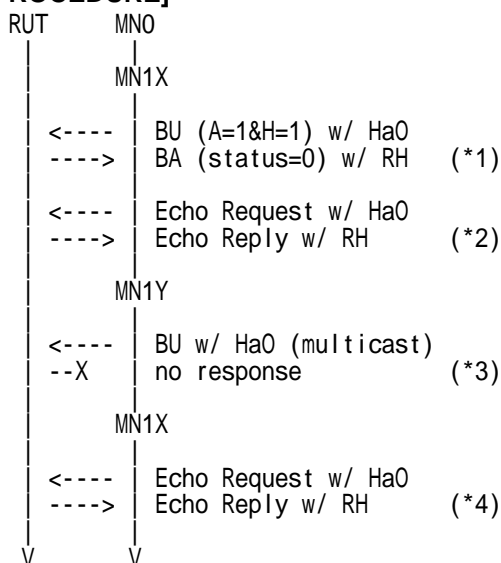
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, solicited-node multicast address)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Option Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. no response (*3)

7. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)



Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1X receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Reply w/ RH
- (*3) PASS: no response
- (*4) PASS: MN1X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.3.1



6.3.3 Proxy DAD Succeeded

6.3.3.1 Real Home Link

6.3.3.1.1 HA_2_3_1 - DAD succeeded (L=0)

[PURPOSE]

HA_2_3_1 - Proxy DAD succeeded (L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

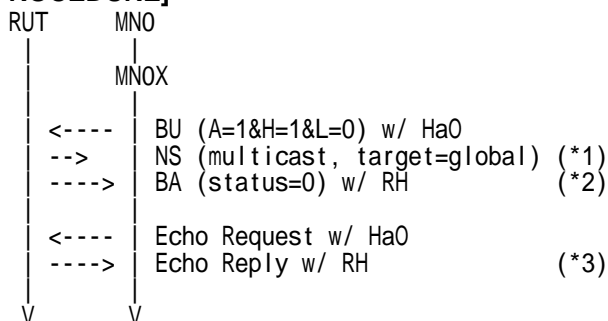
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. RUT sends NS to multicast (*1) (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)

3. MN0X receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

4. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

5. MN0X receives Echo Reply w/ RH (*3) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

[JUDGMENT]

(*1) PASS: RUT sends NS to multicast, target is MN0 global address

(*2) PASS: MN0X receives BA w/ RH

(*3) PASS: MN0X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1

6.3.3.1.2 HA_2_3_2 - DAD succeeded (L=1)

[PURPOSE]

HA_2_3_2 - Proxy DAD succeeded (L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

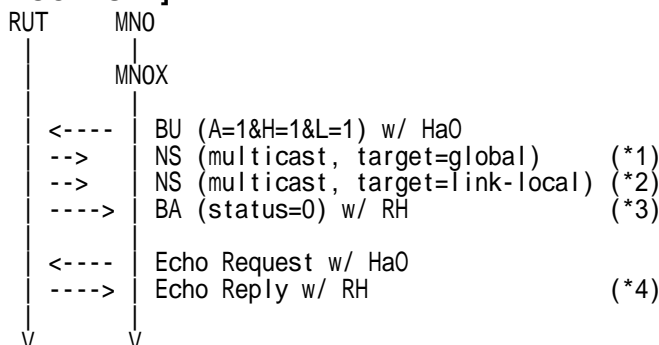
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. RUT sends NS to multicast (*1) (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MN0 (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MN0 (Link0, global)

3. RUT sends NS to multicast (*2) (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MN0 (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MN0 (Link0, link-local)

4. MN0X receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

5. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

6. MN0X receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: RUT sends NS to multicast, target is MN0 global address
- (*2) PASS: RUT sends NS to multicast, target is MN0 link-local address
- (*3) PASS: MN0X receives BA w/ RH
- (*4) PASS: MN0X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.1



6.3.3.1.3 HA_2_3_3 - DAD succeeded (L=0), but receipt of NA w/ link-local target address

[PURPOSE]

HA_2_3_3 - Proxy DAD succeeded (L=0), but receipt of NA w/ link-local target address

[CATEGORY]

ROUTER : ADVANCED FUNCTION(REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

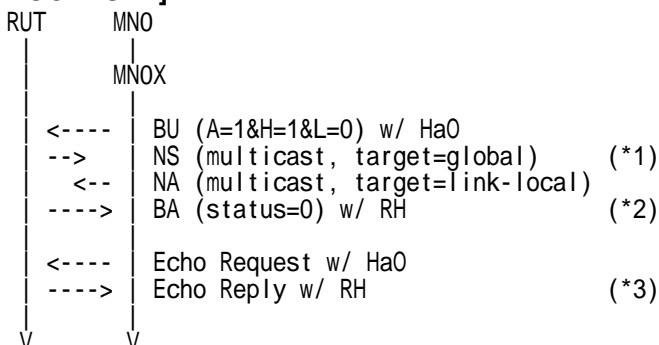
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. RUT sends NS to multicast (*1) (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MN0 (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MN0 (Link0, global)

3. MN0 sends NA to multicast (Refer to 5.4.1)

IPv6 Header	Source Address	MN0 (Link0, link-local)
	Destination Address	(All-node multicast address)
ICMPv6 Header	Type	136
	R Flag	0

S Flag	0
O Flag	1
Target Address	MNO (Link0, link-local)

4. MN0X receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MHI Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MHI Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

5. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

6. MN0X receives Echo Reply w/ RH (*3) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

[JUDGMENT]

(*1) PASS: RUT sends NS to multicast, target is MNO global address

(*2) PASS: MN0X receives BA w/ RH

(*3) PASS: MN0X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1



6.3.4 Proxy DAD Failed

6.3.4.1 Real Home Link

6.3.4.1.1 HA_2_4_1 - Receipt of NA w/ global target address (A=1 & L=0)

[PURPOSE]

HA_2_4_1 - Proxy DAD Failed (A=1 & L=0), Receipt of NA w/ global target address

[CATEGORY]

ROUTER : ADVANCED FUNCTION(REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

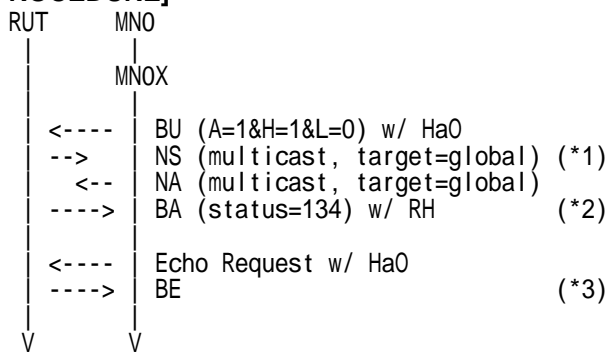
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. RUT sends NS to multicast (*1) (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MN0 (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MN0 (Link0, global)

3. MN0 sends NA to multicast (Refer to 5.4.1)

IPv6 Header	Source Address	MN0 (Link0, link-local)
	Destination Address	(All-node multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	1
	Target Address	MN0 (Link0, global)

4. MN0X receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN0X (Link0X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	134
		K Flag	0
		Sequence	15
Lifetime	Any		
Binding Refresh Advice Option	Interval	Any	

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN0X (Link0X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	134
		K Flag	0
		Sequence	15
Lifetime	Any		
PadN Option	Length	2	

5. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

6. MN0X receives BE (*3) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends NS to multicast, target is MN0 global address

(*2) PASS: MN0X receives BA w/ RH

(*3) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1

6.3.4.1.2 HA_2_4_4 - Receipt of NA w/ global target address (A=0 & L=0)

[PURPOSE]

HA_2_4_4 - Proxy DAD Failed (A=0 & L=0), Receipt of NA w/ global target address

[CATEGORY]

ROUTER : ADVANCED FUNCTION(REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

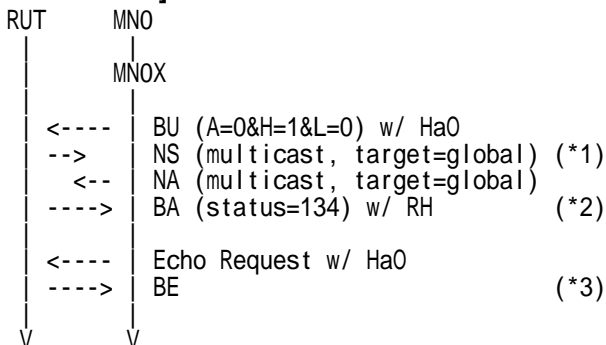
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. RUT sends NS to multicast (*1) (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)

3. MNO sends NA to multicast (Refer to 5.4.1)

IPv6 Header	Source Address	MNO (Link0, link-local)
	Destination Address	(All-node multicast address)
ICMPv6 Header	Type	136
	R Flag	0



S Flag	0
O Flag	1
Target Address	MNO (Link0, global)

4. MN0X receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	134
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	134
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

5. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

6. MN0X receives BE (*3) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MNO (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends NS to multicast, target is MNO global address

(*2) PASS: MN0X receives BA w/ RH

(*3) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1



6.3.4.1.3 HA_2_4_2 - Receipt of NA w/ global target address (A=1 & L=1)

[PURPOSE]

HA_2_4_2 - Proxy DAD Failed (A=1 & L=1), Receipt of NA w/ global target address

[CATEGORY]

ROUTER : ADVANCED FUNCTION(REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

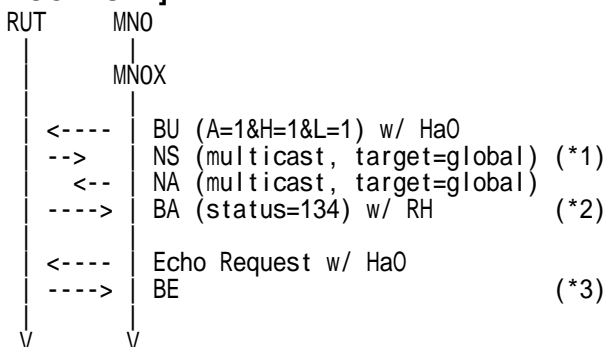
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. RUT sends NS to multicast (*1) (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)

3. MNO sends NA to multicast (Refer to 5.4.1)

IPv6 Header	Source Address	MNO (Link0, link-local)
	Destination Address	(All-node multicast address)
ICMPv6 Header	Type	136
	R Flag	0



S Flag	0
O Flag	1
Target Address	MNO (Link0, global)

4. MN0X receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	134
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	134
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

5. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

6. MN0X receives BE (*3) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MNO (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends NS to multicast, target is MNO global address

(*2) PASS: MN0X receives BA w/ RH

(*3) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1



6.3.4.1.4 HA_2_4_5 - Receipt of NA w/ global target address (A=0 & L=1)

[PURPOSE]

HA_2_4_5 - Proxy DAD Failed (A=0 & L=1), Receipt of NA w/ global target address

[CATEGORY]

ROUTER : ADVANCED FUNCTION(REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

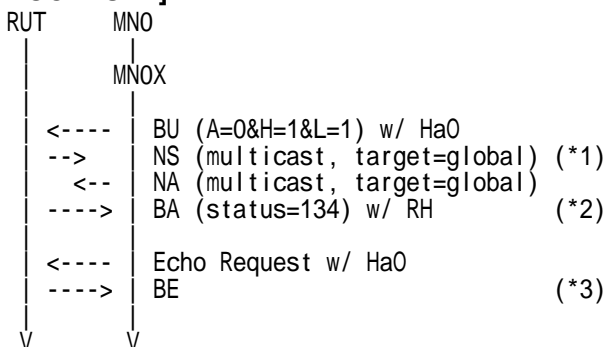
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0,global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	0
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. RUT sends NS to multicast (*1) (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)

3. MNO sends NA to multicast (Refer to 5.4.1)

IPv6 Header	Source Address	MNO (Link0, link-local)
	Destination Address	(All-node multicast address)
ICMPv6 Header	Type	136
	R Flag	0

S Flag	0
O Flag	1
Target Address	MNO (Link0, global)

4. MN0X receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	134
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	134
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

5. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

6. MN0X receives BE (*3) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MNO (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends NS to multicast, target is MNO global address

(*2) PASS: MN0X receives BA w/ RH

(*3) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1



6.3.4.1.5 HA_2_4_3 - Receipt of NA w/ link-local target address (A=1 & L=1)

[PURPOSE]

HA_2_4_3 - Proxy DAD Failed (A=1 & L=1), Receipt of NA w/ link-local target address

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

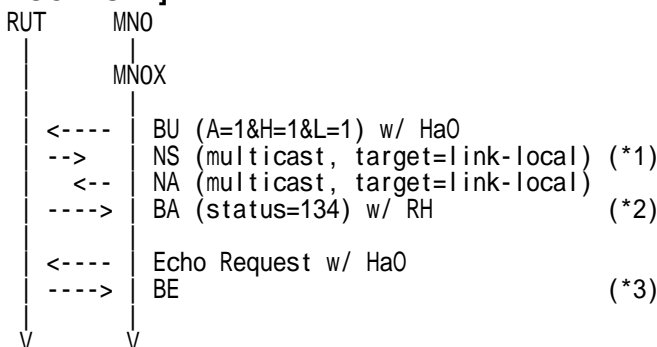
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. RUT sends NS to multicast (*1) (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, link-local)

3. MNO sends NA to multicast (Refer to 5.4.1)

IPv6 Header	Source Address	MNO (Link0, link-local)
	Destination Address	(All-node multicast address)
ICMPv6 Header	Type	136
	R Flag	0



S Flag	0
O Flag	1
Target Address	MNO (Link0, link-local)

4. MN0X receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	134
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	134
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

5. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

6. MN0X receives BE (*3) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MNO (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends NS to multicast, target is MNO global address

(*2) PASS: MN0X receives BA w/ RH

(*3) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1



6.3.4.1.6 HA_2_4_6 - Recept of NA w/ link-local target address (A=0 & L=1)

[PURPOSE]

HA_2_4_6 - Proxy DAD Failed (A=0 & L=1), Recept of NA w/ link-local target address

[CATEGORY]

ROUTER : ADVANCED FUNCTION(REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

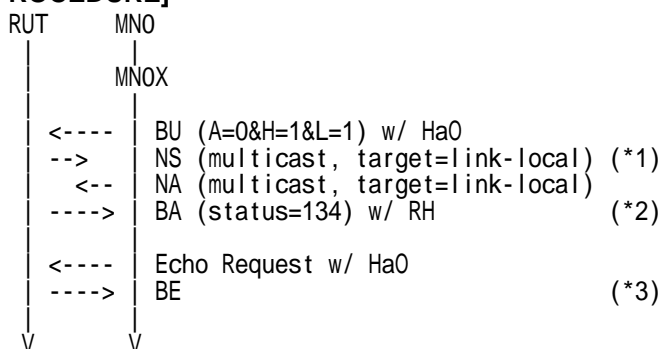
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	0
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. RUT sends NS to multicast (*1) (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, link-local)

3. MN0 sends NA to multicast (Refer to 5.4.1)

IPv6 Header	Source Address	MNO (Link0, link-local)
	Destination Address	All-nodes multicast address
ICMPv6 Header	Type	136
	R	0

S	0
O	1
Target Address	MNO (Link0, link-local)

4. MN0X receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	134
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	134
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

5. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

6. MN0X receives BE (*3) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MNO (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends NS to multicast, target is MNO global address

(*2) PASS: MN0X receives BA w/ RH

(*3) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.1



6.3.5 Valid Sequence Number

6.3.5.1 Real Home Link

6.3.5.1.1 HA_2_5_1 - 1st=15, 2nd=16 (A=1)

[PURPOSE]

HA_2_5_1 - Valid Sequence Number (A=1) 1st=15, 2nd=16

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

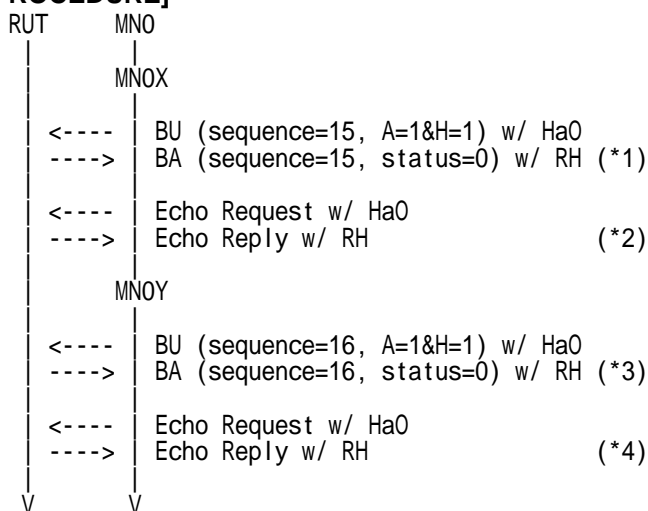
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0



Alternate CoA Option	Address	MNOX (LinkOX, global)
----------------------	---------	-----------------------

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (LinkOX, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (LinkOX, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (LinkOX, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (LinkOX, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (LinkOX, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (LinkOX, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. MNOY sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. MNOY receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
-------------	----------------	---------------------

Type 2 Routing Header	Destination Address	MNOY (Link0Y, global)
	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
Type 2 Routing Header	Destination Address	MNOY (Link0Y, global)
	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
	Lifetime	<=105
PadN Option	Length	2

7. MN0Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

8. MN0Y receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0Y receives BA w/ RH
- (*4) PASS: MN0Y receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.5.1



6.3.5.1.2 HA_2_5_5 - 1st=15, 2nd=16 (A=0)

[PURPOSE]

HA_2_5_5 - Valid Sequence Number (A=0) 1st=15, 2nd=16

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

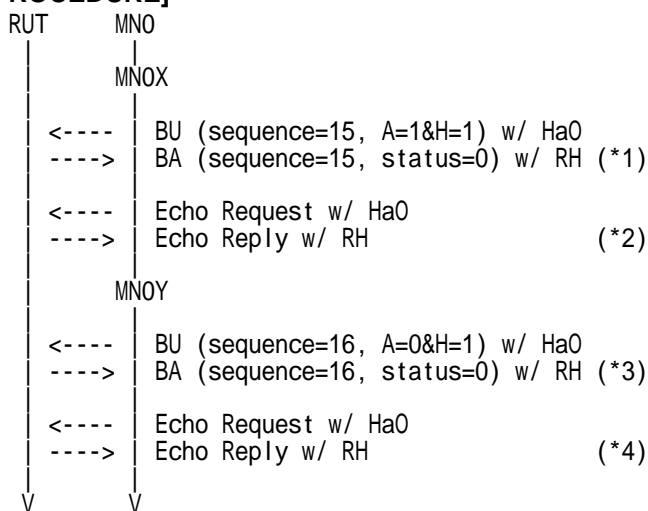
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. MNOY sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. MNOY receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1



	K Flag	0
	Sequence	16
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
Type 2 Routing Header	Destination Address	MNOY (Link0Y, global)
	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
	Lifetime	<=105
PadN Option	Length	2

7. MN0Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0Y receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Type	129

[JUDGMENT]

- (* 1) PASS: MN0X receives BA w/ RH
- (* 2) PASS: MN0X receives Echo Reply w/ RH
- (* 3) PASS: MN0Y receives BA w/ RH
- (* 4) PASS: MN0Y receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.5.1.3 HA_2_5_2 - 1st=15, 2nd=32782 (A=1)

[PURPOSE]

HA_2_5_2 - Valid Sequence Number (A=1) 1st=15, 2nd=32782

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

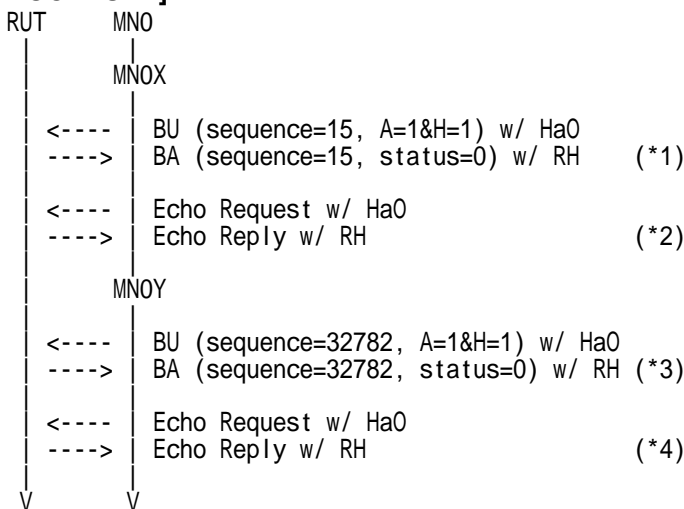
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN0Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32782
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. MN0Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0



	Sequence	32782
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32782
	Lifetime	<=105
PadN Option	Length	2

7. MN0Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0Y receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

- (* 1) PASS: MN0X receives BA w/ RH
- (* 2) PASS: MN0X receives Echo Reply w/ RH
- (* 3) PASS: MN0Y receives BA w/ RH
- (* 4) PASS: MN0Y receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.5.1.4 HA_2_7_1 - 1st=32783, 2nd=32784 (A=1)

[PURPOSE]

HA_2_7_1 - Valid Sequence Number (A=1) 1st=32783, 2nd=32784

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

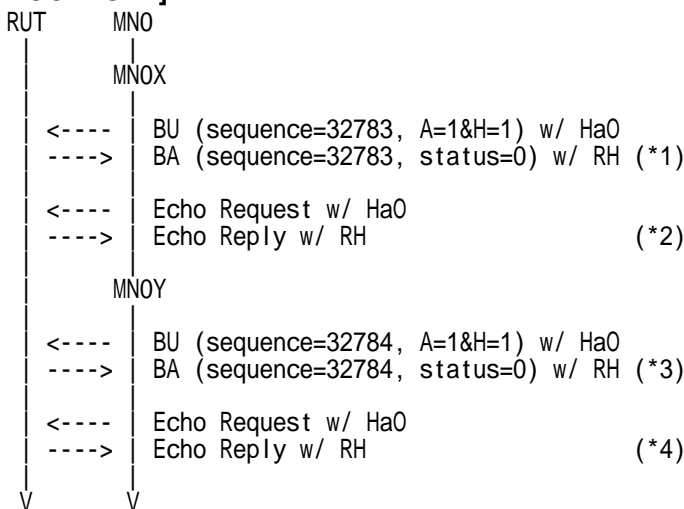
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	MH Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Mobility Header	MH Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN0Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32784
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. MN0Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0



	Sequence	32784
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32784
	Lifetime	<=105
PadN Option	Length	2

7. MN0Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0Y receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0Y receives BA w/ RH
- (*4) PASS: MN0Y receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.5.1



6.3.5.1.5 HA_2_7_2 - 1st=32783, 2nd=14 (A=1)

[PURPOSE]

HA_2_7_2 - Valid Sequence Number (A=1) 1st=32783, 2nd=14

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

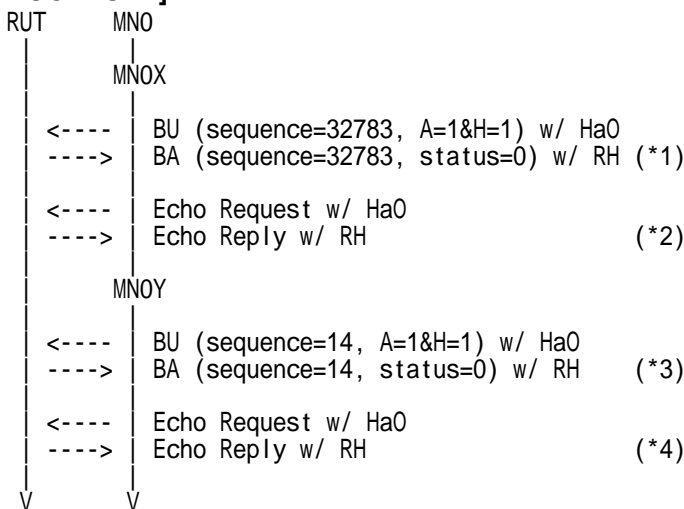
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN0Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	14
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. MN0Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0



	Sequence	14
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	14
	Lifetime	<=105
PadN Option	Length	2

7. MN0Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0Y receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

- (* 1) PASS: MN0X receives BA w/ RH
- (* 2) PASS: MN0X receives Echo Reply w/ RH
- (* 3) PASS: MN0Y receives BA w/ RH
- (* 4) PASS: MN0Y receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.5.1



6.3.5.2 Virtual Home Link

6.3.5.2.1 HA_2_5_3 - 1st=15, 2nd=16 (A=1)

[PURPOSE]

HA_2_5_3 - Valid Sequence Number (A=1) 1st=15, 2nd=16

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

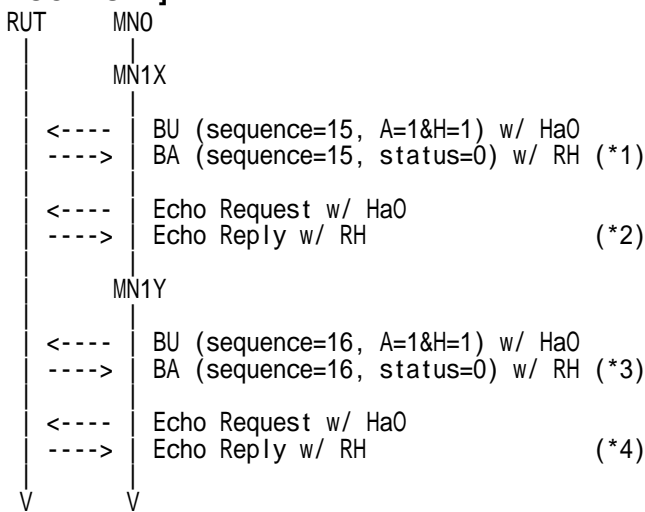
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2



	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
	Lifetime	<=105
PadN Option	Length	2

7. MN1Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1Y receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Reply w/ RH
- (*3) PASS: MN1Y receives BA w/ RH
- (*4) PASS: MN1Y receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.5.2.2 HA_2_5_7 - 1st=15, 2nd=16 (A=0)

[PURPOSE]

HA_2_5_7 - Valid Sequence Number (A=0) 1st=15, 2nd=16

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

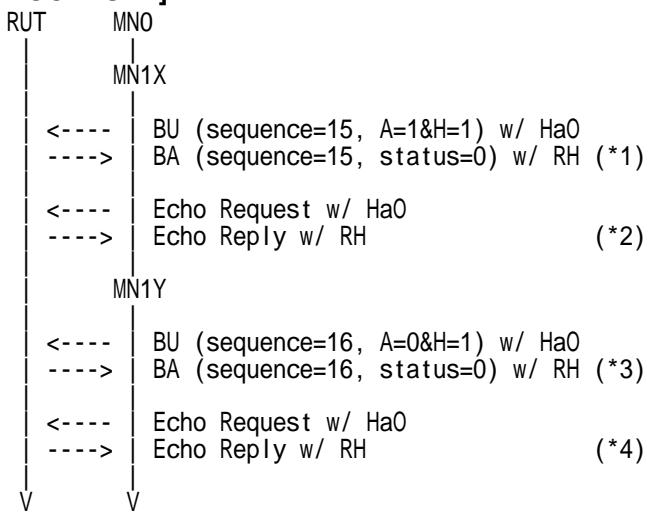
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0



	Sequence	16
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
	Lifetime	<=105
PadN Option	Length	2

7. MN1Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1Y receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Reply w/ RH
- (*3) PASS: MN1Y receives BA w/ RH
- (*4) PASS: MN1Y receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.5.1



6.3.5.2.3 HA_2_5_4 - 1st=15, 2nd=32782 (A=1)

[PURPOSE]

HA_2_5_4 - Valid Sequence Number (A=1) 1st=15, 2nd=32782

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

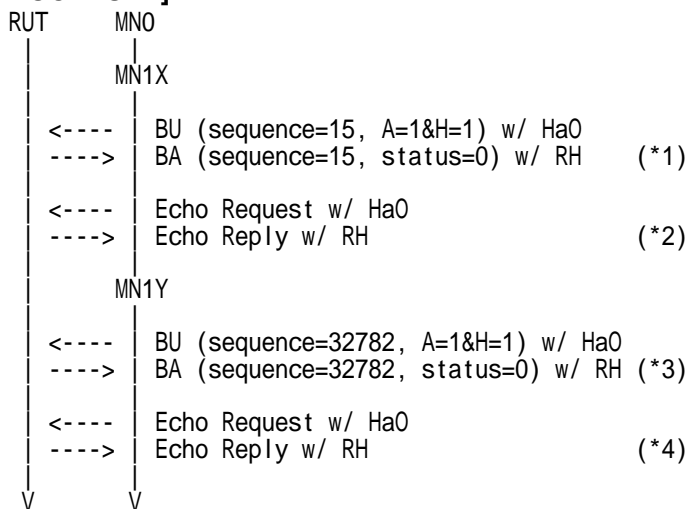
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32782
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0



	Sequence	32782
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32782
	Lifetime	<=105
PadN Option	Length	2

7. MN1Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1Y receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

- (* 1) PASS: MN1X receives BA w/ RH
- (* 2) PASS: MN1X receives Echo Reply w/ RH
- (* 3) PASS: MN1Y receives BA w/ RH
- (* 4) PASS: MN1Y receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.5.2.4 HA_2_7_3 - 1st=32783, 2nd=32784 (A=1)

[PURPOSE]

HA_2_7_3 - Valid Sequence Number (A=1) 1st=32783, 2nd=32784

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

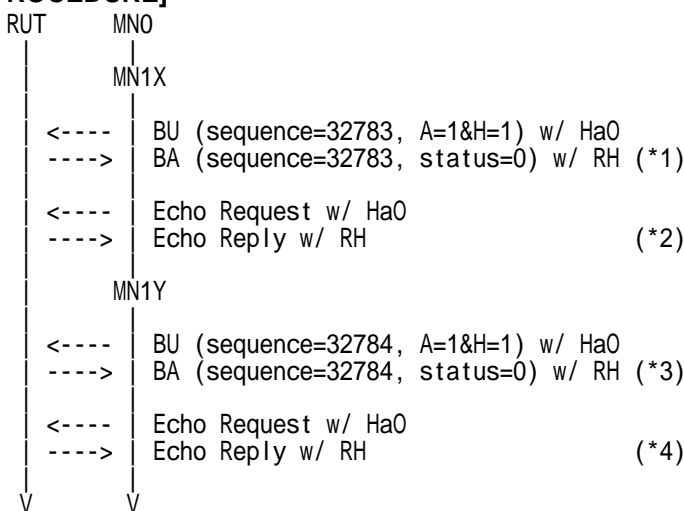
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32784
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0



	Sequence	32784
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32784
	Lifetime	<=105
PadN Option	Length	2

7. MN1Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1Y receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

- (* 1) PASS: MN1X receives BA w/ RH
- (* 2) PASS: MN1X receives Echo Reply w/ RH
- (* 3) PASS: MN1Y receives BA w/ RH
- (* 4) PASS: MN1Y receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.5.2.5 HA_2_7_4 - 1st=32783, 2nd=14 (A=1)

[PURPOSE]

HA_2_7_4 - Valid Sequence Number (A=1) 1st=32783, 2nd=14

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

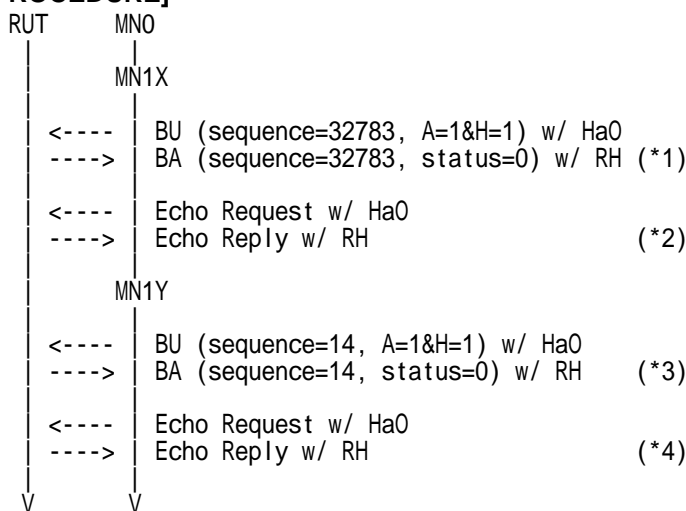
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	14
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0



	Sequence	14
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	14
	Lifetime	<=105
PadN Option	Length	2

7. MN1Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1Y receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

- (* 1) PASS: MN1X receives BA w/ RH
- (* 2) PASS: MN1X receives Echo Reply w/ RH
- (* 3) PASS: MN1Y receives BA w/ RH
- (* 4) PASS: MN1Y receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.5.1

6.3.6 Invalid Sequence Number

6.3.6.1 Real Home Link

6.3.6.1.1 HA_2_6_1 - 1st=15, 2nd=14 (A=1)

[PURPOSE]

HA_2_6_1 - Invalid Sequence Number (A=1) 1st=15, 2nd=14

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

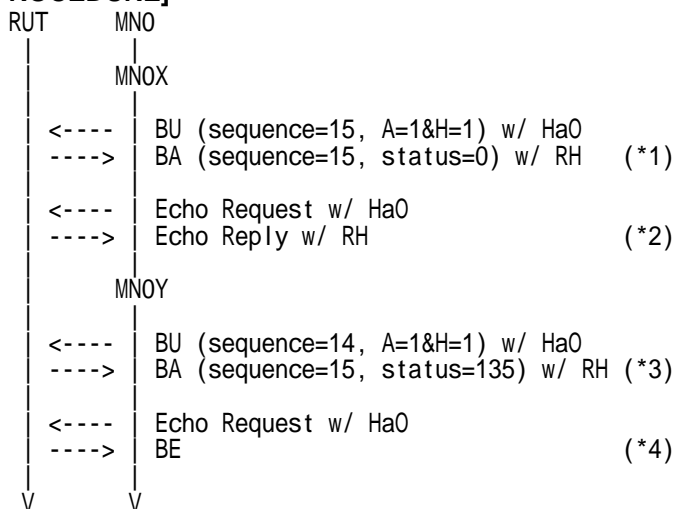
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0

Alternate CoA Option	Address	MNOX (LinkOX, global)
----------------------	---------	-----------------------

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (LinkOX, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (LinkOX, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (LinkOX, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (LinkOX, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (LinkOX, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (LinkOX, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. MNOY sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	14
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. MNOY receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
-------------	----------------	---------------------



Type 2 Routing Header	Destination Address	MNOY (Link0Y, global)
	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
Type 2 Routing Header	Destination Address	MNOY (Link0Y, global)
	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

7. MN0Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

8. MN0Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MNO (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0Y receives BA w/ RH
- (*4) PASS: MN0Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.5.1



6.3.6.1.2 HA_2_6_4 - 1st=15, 2nd=14 (A=0)

[PURPOSE]

HA_2_6_4 - Invalid Sequence Number (A=0) 1st=15, 2nd=14

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

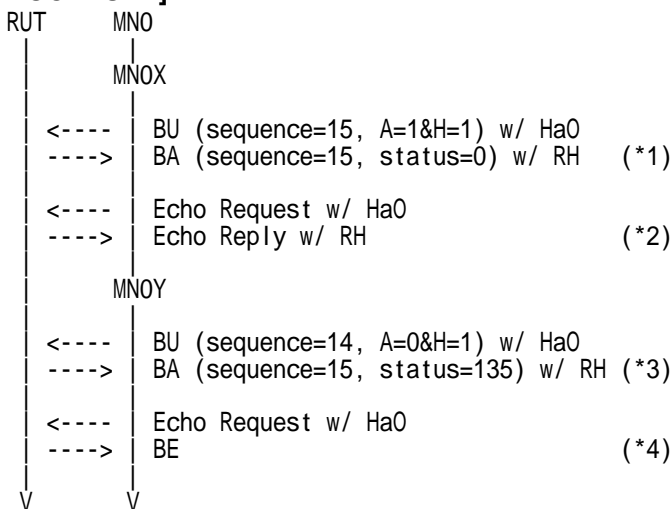
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. MNOY sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	14
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. MNOY receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0



	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

7. MN0Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0Y receives BA w/ RH
- (*4) PASS: MN0Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1

6.3.6.1.3 HA_2_6_2 - 1st=15, 2nd=15 (A=1)

[PURPOSE]

HA_2_6_2 - Invalid Sequence Number (A=1) 1st=15, 2nd=15

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

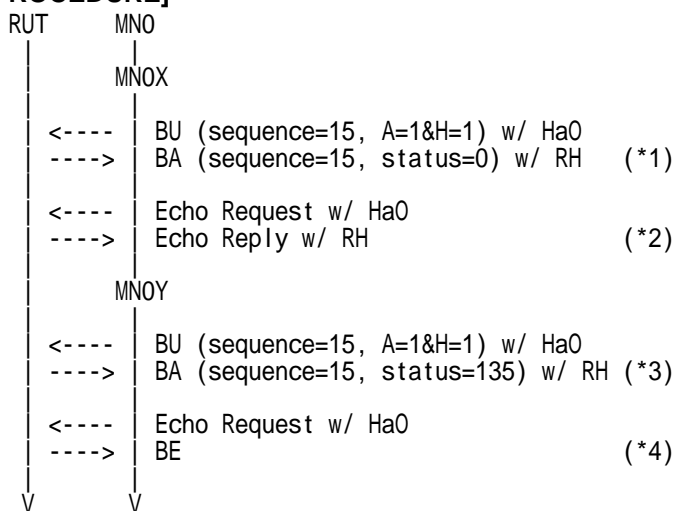
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. MNOY sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. MNOY receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0



	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

7. MN0Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0Y receives BA w/ RH
- (*4) PASS: MN0Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.6.1.4 HA_2_6_3 - 1st=15, 2nd=32783 (A=1)

[PURPOSE]

HA_2_6_3 - Invalid Sequence Number (A=1) 1st=15, 2nd=32783

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

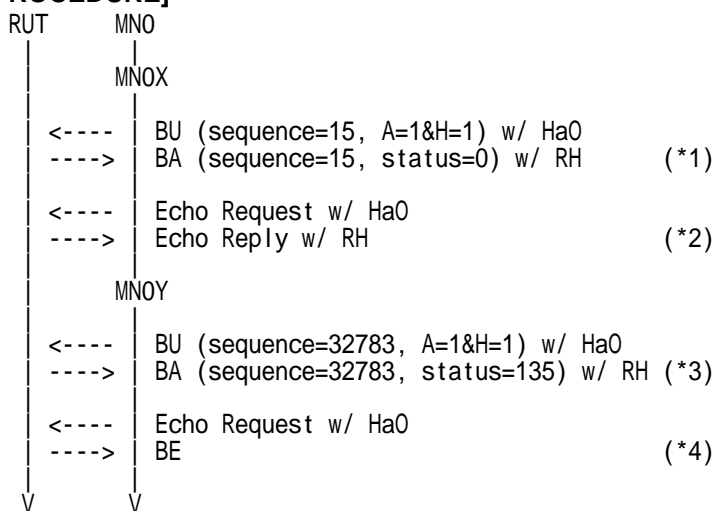
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. MNOY sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. MNOY receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0



	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

7. MN0Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0Y receives BA w/ RH
- (*4) PASS: MN0Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.6.1.5 HA_2_8_1 - 1st=32783, 2nd=32782 (A=1)

[PURPOSE]

HA_2_8_1 - Invalid Sequence Number (A=1) 1st=32783, 2nd=32782

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

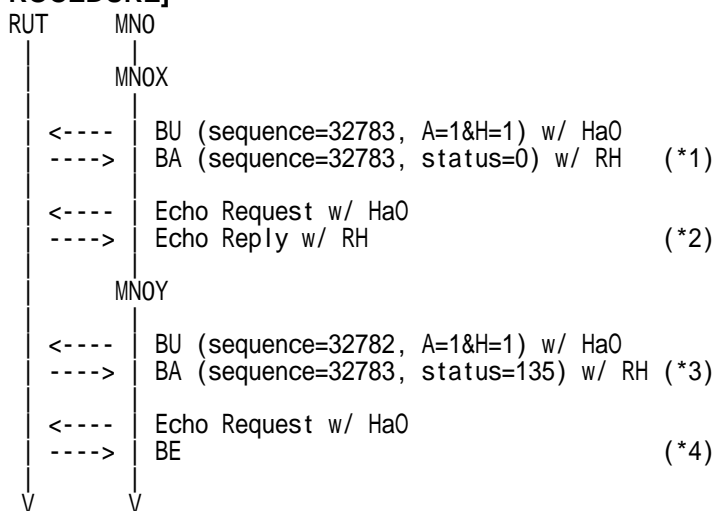
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN0Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32782
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. MN0Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0



	Sequence	32783
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	32783
	Lifetime	Any
PadN Option	Length	2

7. MN0Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0Y receives BA w/ RH
- (*4) PASS: MN0Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.6.1.6 HA_2_8_2 - 1st=32783, 2nd=32783 (A=1)

[PURPOSE]

HA_2_8_2 - Invalid Sequence Number (A=1) 1st=32783, 2nd=32783

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

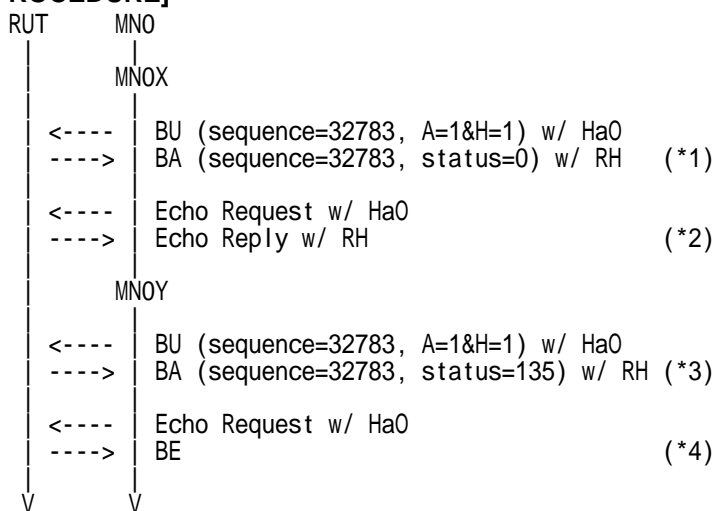
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. MNOY sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. MNOY receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0



	Sequence	32783
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	32783
	Lifetime	Any
PadN Option	Length	2

7. MN0Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0Y receives BA w/ RH
- (*4) PASS: MN0Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.6.1.7 HA_2_8_3 - 1st=32783, 2nd=15 (A=1)

[PURPOSE]

HA_2_8_3 - Invalid Sequence Number (A=1) 1st=32783, 2nd=15

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

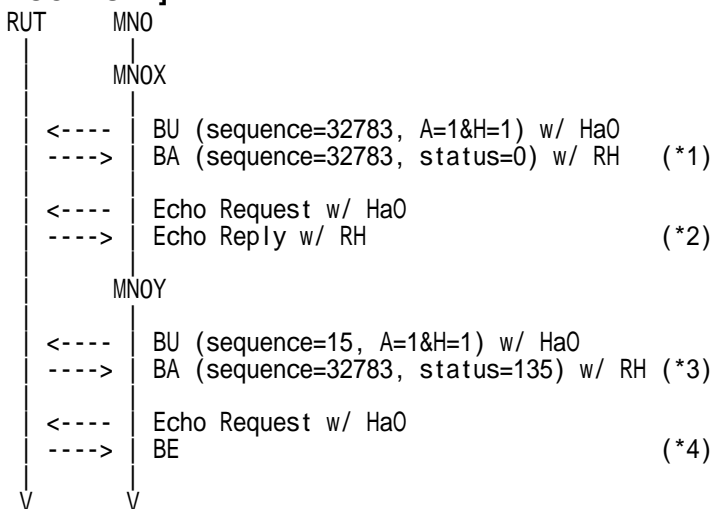
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN0Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. MN0Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0



	Sequence	32783
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	32783
	Lifetime	Any
PadN Option	Length	2

7. MN0Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0Y receives BA w/ RH
- (*4) PASS: MN0Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.6.2 Virtual Home Link

6.3.6.2.1 HA_2_6_7 - 1st=15, 2nd=14 (A=1)

[PURPOSE]

HA_2_6_7 - Invalid Sequence Number (A=1) 1st=15, 2nd=14

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

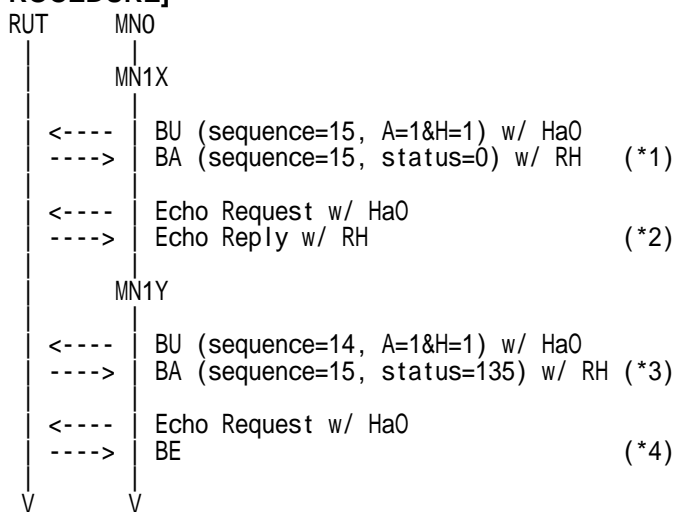
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	14
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2

	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

7. MN1Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Reply w/ RH
- (*3) PASS: MN1Y receives BA w/ RH
- (*4) PASS: MN1Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.5.1



6.3.6.2.2 HA_2_6_10 - 1st=15, 2nd=14 (A=0)

[PURPOSE]

HA_2_6_10 - Invalid Sequence Number (A=0) 1st=15, 2nd=14

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

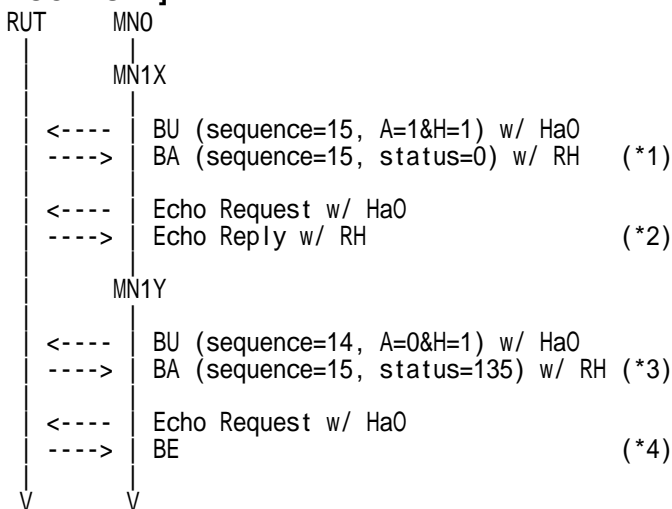
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	14
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0



	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

7. MN1Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Reply w/ RH
- (*3) PASS: MN1Y receives BA w/ RH
- (*4) PASS: MN1Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.6.2.3 HA_2_6_8 - 1st=15, 2nd=15 (A=1)

[PURPOSE]

HA_2_6_8 - Invalid Sequence Number (A=1) 1st=15, 2nd=15

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

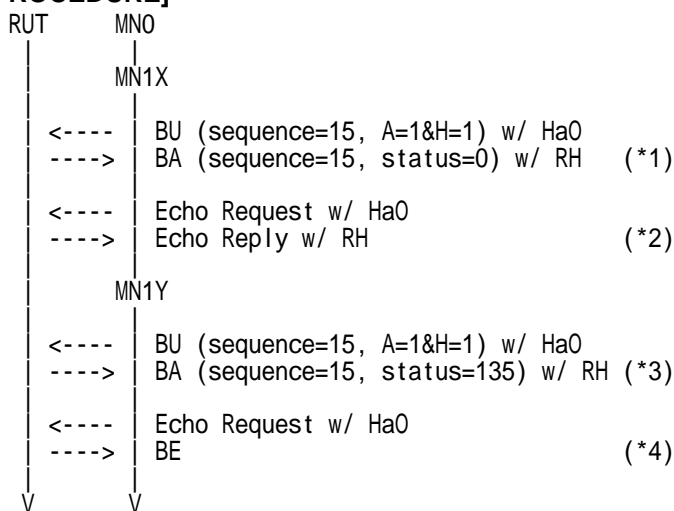
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0



	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

7. MN1Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Reply w/ RH
- (*3) PASS: MN1Y receives BA w/ RH
- (*4) PASS: MN1Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.6.2.4 HA_2_6_9 - 1st=15, 2nd=32783 (A=1)

[PURPOSE]

HA_2_6_9 - Invalid Sequence Number (A=1) 1st=15, 2nd=32783

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

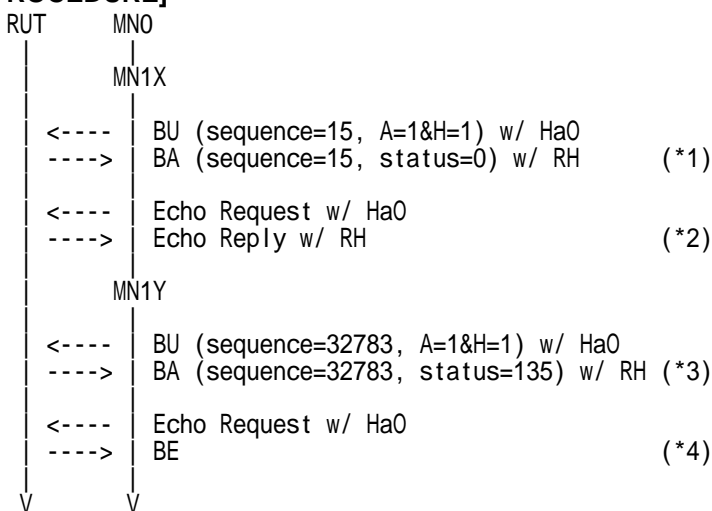
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0



	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

7. MN1Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Reply w/ RH
- (*3) PASS: MN1Y receives BA w/ RH
- (*4) PASS: MN1Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.6.2.5 HA_2_8_7 - 1st=32783, 2nd=32782 (A=1)

[PURPOSE]

HA_2_8_7 - Invalid Sequence Number (A=1) 1st=32783, 2nd=32782

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

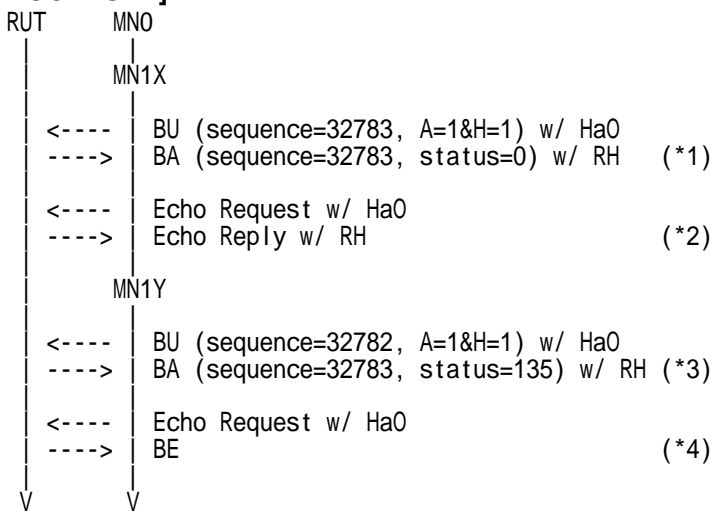
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0



	Sequence	32783
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	32783
	Lifetime	Any
PadN Option	Length	2

7. MN1Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Reply w/ RH
- (*3) PASS: MN1Y receives BA w/ RH
- (*4) PASS: MN1Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.6.2.6 HA_2_8_8 - 1st=32783, 2nd=32783 (A=1)

[PURPOSE]

HA_2_8_8 - Invalid Sequence Number (A=1) 1st=32783, 2nd=32783

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

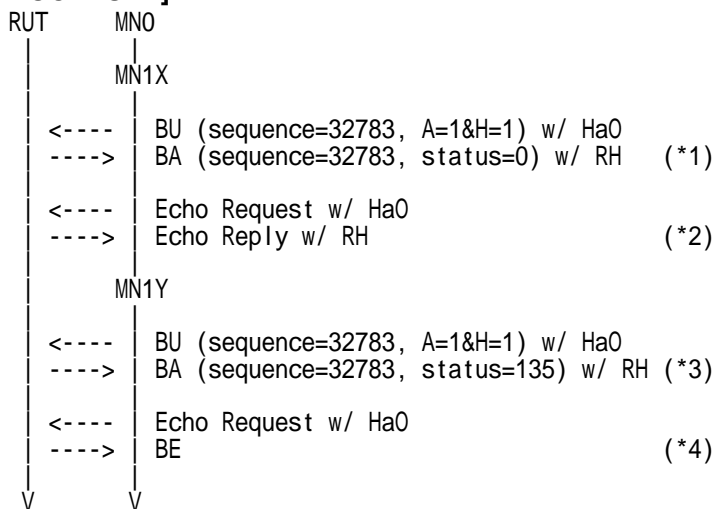
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0



	Sequence	32783
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	32783
	Lifetime	Any
PadN Option	Length	2

7. MN1Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Reply w/ RH
- (*3) PASS: MN1Y receives BA w/ RH
- (*4) PASS: MN1Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 9.5.1



6.3.6.2.7 HA_2_8_9 - 1st=32783, 2nd=15 (A=1)

[PURPOSE]

HA_2_8_9 - Invalid Sequence Number (A=1) 1st=32783, 2nd=15

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

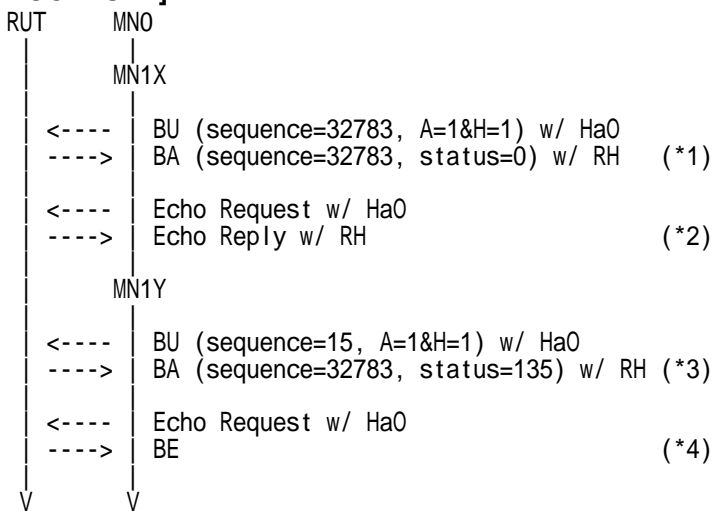
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	32783
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2

	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	32783
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0



	Sequence	32783
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	32783
	Lifetime	Any
PadN Option	Length	2

7. MN1Y sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1Y receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Reply w/ RH
- (*3) PASS: MN1Y receives BA w/ RH
- (*4) PASS: MN1Y receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.5.1

6.4 Primary Care-of Address De-Registration

6.4.1 Valid De-Registration

6.4.1.1 Real Home Link

6.4.1.1.1 HA_3_1_1 - CoA!=HoA (A=1 & Lifetime=0) w/ HaO

[PURPOSE]

HA_3_1_1 - Valid De-Registration, CoA!=HoA (A=1 & Lifetime=0) w/ HaO

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

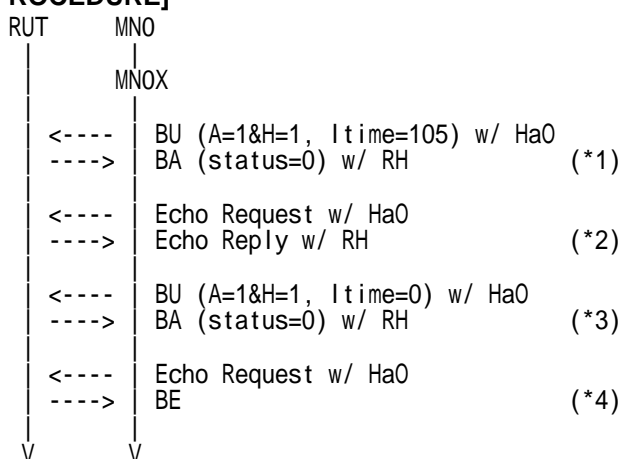
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1



	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)



6. MN0X receives BA w/ RH (*3) (Refer to 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN0X (Link0X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0
		K Flag	0
		Sequence	16
Lifetime		0	
PadN Option	Lifetime	0	
	Length	2	

7. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0X receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0X receives BA w/ RH
- (*4) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.2

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
Mobility Header	Lifetime	<=105
	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
	Length	0
PadN Option	Length	0
Alternate CoA Option	Address	MN0 (Link0, global)

6. MN0X receives BA w/ RH (*3) (Refer to 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0 (Link0, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0
	K Flag	0
	Sequence	16
Mobility Header	Lifetime	0
	Length	2



7. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SAS_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0X receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0X receives BA w/ RH
- (*4) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2



6.4.1.1.3 HA_3_1_2 - CoA=HoA (A=1 & Lifetime=0) w/ HaO

[PURPOSE]

HA_3_1_2 - Valid De-Registration, CoA=HoA (A=1 & Lifetime=0) w/ HaO

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

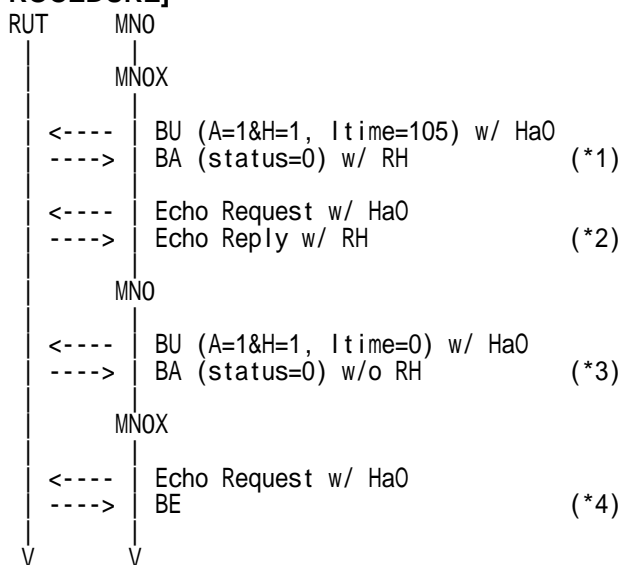
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. MNO sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MNO (Link0, global)

6. MNO receives BA w/o RH (*3) (Refer to 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0
	K Flag	0
	Sequence	16



PadN Option	Lifetime	0
	Length	2

7. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5 SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0X receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0 receives BA w/o RH
- (*4) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.2



6.4.1.1.4 HA_3_1_7 - CoA=HoA (A=0 & Lifetime=0) w/ HaO

[PURPOSE]

HA_3_1_7 - Valid De-Registration, CoA=HoA (A=0 & Lifetime=0) w/ HaO

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

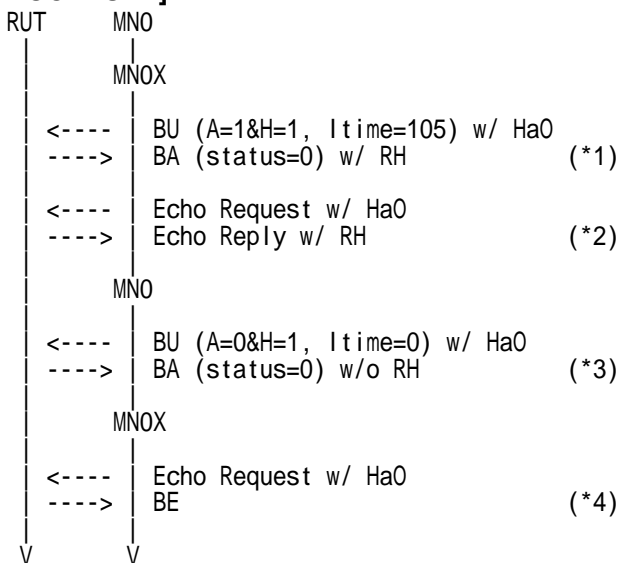
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
Binding Refresh Advice Option	Lifetime	<=105
	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=105
	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. MNO sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
	Alternate CoA Option	Address

6. MNO receives BA w/o RH (*3) (Refer to 5.10.4)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0
	K Flag	0
	Sequence	16



PadN Option	Lifetime	0
	Length	2

7. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5 SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0X receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0 receives BA w/o RH
- (*4) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.2



6.4.1.1.5 HA_3_1_4 - CoA=HoA (A=1 & Lifetime=0) w/o HaO

[PURPOSE]

HA_3_1_4 - Valid De-Registration, CoA=HoA (A=1 & Lifetime=0) w/o HaO

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

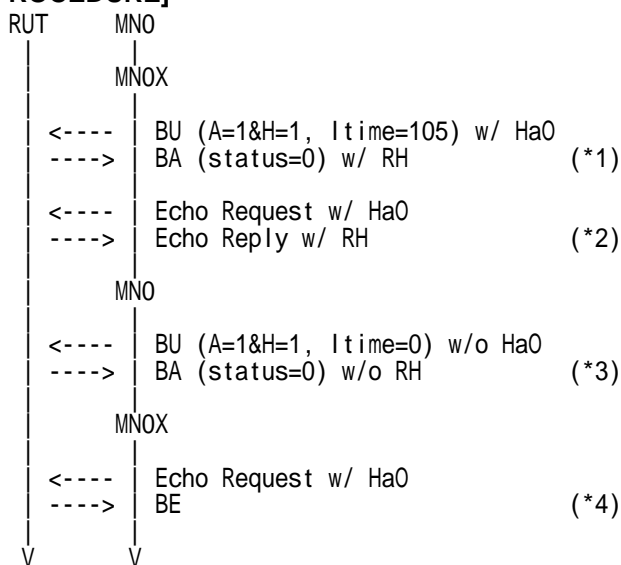
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
Binding Refresh Advice Option	Lifetime	<=105
	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=105
	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. MNO sends BU w/o HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	RUT (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
	Length	0
PadN Option	Length	0
Alternate CoA Option	Address	MNO (Link0, global)

6. MNO receives BA w/o RH (*3) (Refer to 5.10.4)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0
	K Flag	0
	Sequence	16
	Lifetime	0



PadN Option	Length	2
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7. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0X receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0 receives BA w/o RH
- (*4) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.2



6.4.1.1.6 HA_3_1_9 - CoA=HoA (A=0 & Lifetime=0) w/o HaO

[PURPOSE]

HA_3_1_9 - Valid De-Registration, CoA=HoA (A=0 & Lifetime=0) w/o HaO

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

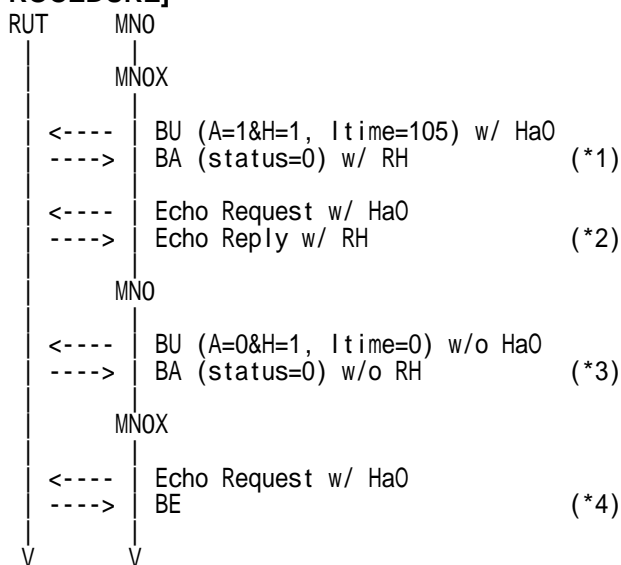
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. MNO sends BU w/o HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	RUT (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
	PadN Option	Length
Alternate CoA Option	Address	MNO (Link0, global)

6. MNO receives BA w/o RH (*3) (Refer to 5.10.4)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0
	K Flag	0
	Sequence	16
	Lifetime	0



PadN Option	Length	2
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7. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0X receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0 receives BA w/o RH
- (*4) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.2



6.4.1.2 Virtual Home Link

6.4.1.2.1 HA_3_1_11 - CoA!=HoA (A=1 & Lifetime=0) w/ HaO

[PURPOSE]

HA_3_1_11 - Valid De-Registration, CoA!=HoA (A=1 & Lifetime=0) w/ HaO

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

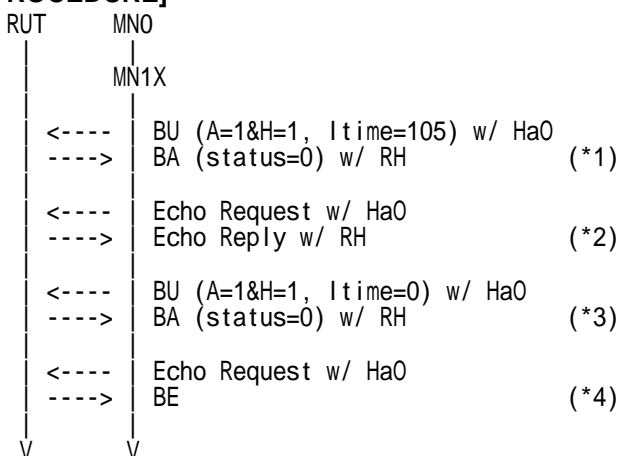
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0,global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)

Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

6. MN1X receives BA w/ RH (*3) (Refer to 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0



	K Flag	0
	Sequence	16
	Lifetime	0
PadN Option	Length	2

7. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1X receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Reply w/ RH
- (*3) PASS: MN1X receives BA w/ RH
- (*4) PASS: MN1X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.2



6.4.1.2.2 HA_3_1_12 - CoA!=HoA (A=0 & Lifetime=0) w/ HaO

[PURPOSE]

HA_3_1_12 - Valid De-Registration, CoA!=HoA (A=0 & Lifetime=0) w/ HaO

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

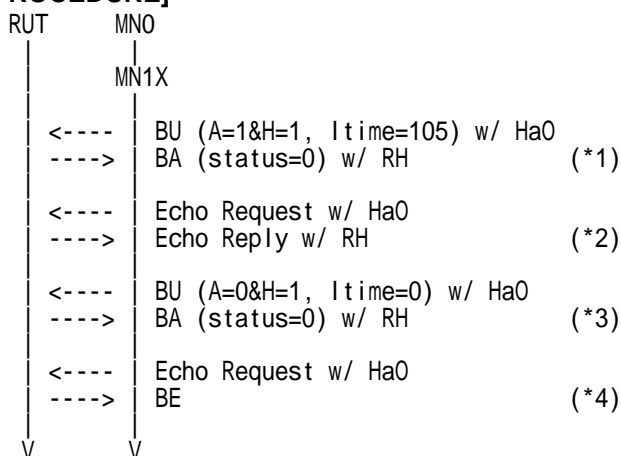
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=105
	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

6. MN1X receives BA w/ RH (*3) (Refer to 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0
	K Flag	0
	Sequence	16
PadN Option	Lifetime	0
	Length	2



7. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SAS_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

8. MN1X receives BE (*4) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link0, global)
Mobility Header	MH Type	7
	status	1
	Address	MNO (Link0, global)

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Reply w/ RH
- (*3) PASS: MN1X receives BA w/ RH
- (*4) PASS: MN1X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2



6.4.2 Invalid De-Registration (Not home agent for this mobile node)

6.4.2.1 Real Home Link

6.4.2.1.1 HA_3_2_1 - CoA!=HoA (A=1 & Lifetime=0) w/ HaO

[PURPOSE]

HA_3_2_1 - Invalid De-Registration (Not home agent for this mobile node), CoA!=HoA (A=1 & Lifetime=0) w/ HaO

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

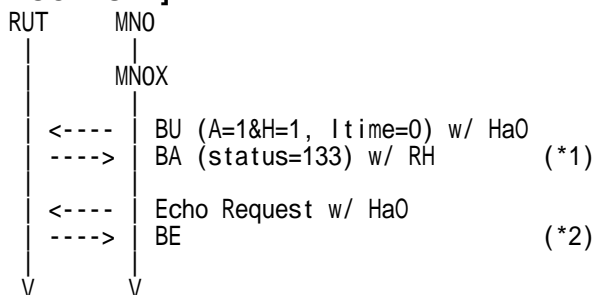
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1



	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	133
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	133
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MNO (Link0, global)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2

6.4.2.1.2 HA_3_2_6 - CoA!=HoA (A=0 & Lifetime=0) w/ HaO

[PURPOSE]

HA_3_2_6 - Invalid De-Registration (Not home agent for this mobile node), CoA!=HoA (A=0 & Lifetime=0) w/ HaO

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

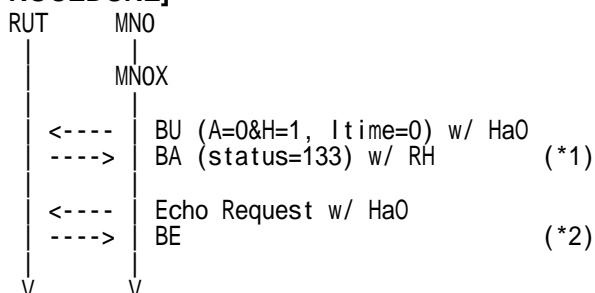
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	133
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any



IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	133
	K Flag	0
	Sequence	15
PadN Option	Lifetime	Any
	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2



6.4.2.1.3 HA_3_2_2 - CoA=HoA (A=1 & Lifetime=0) w/ HaO

[PURPOSE]

HA_3_2_2 - Invalid De-Registration (Not home agent for this mobile node), CoA=HoA (A=1 & Lifetime=0) w/ HaO

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

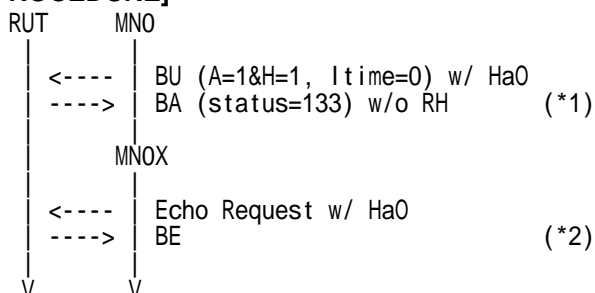
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0 sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MN0 (Link0, global)

2. MN0 receives BA w/o RH (*1) (Refer to 5.10.3, 5.10.4)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	133
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI



Mobility Header	MH Type	6
	Status	133
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5 SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

(*1) PASS: MN0 receives BA w/o RH

(*2) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2



6.4.2.1.4 HA_3_2_7 - CoA=HoA (A=0 & Lifetime=0) w/ HaO

[PURPOSE]

HA_3_2_7 - Invalid De-Registration (Not home agent for this mobile node), CoA=HoA (A=0 & Lifetime=0) w/ HaO

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

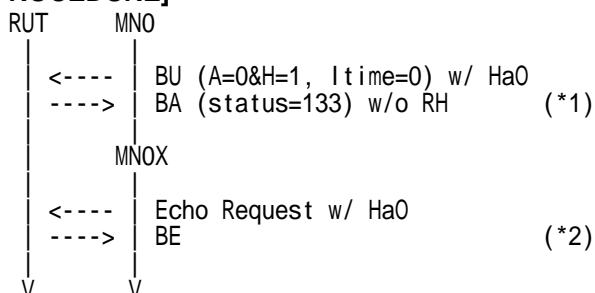
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0 sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0 (Link0_global)
	Destination Address	RUT (Link0_global)
Destination Option Header	Home Address	MN0 (Link0_global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MN0 (Link0_global)

2. MN0 receives BA w/o RH (*1) (Refer to 5.10.3, 5.10.4)

IPv6 Header	Source Address	RUT (Link0_global)
	Destination Address	MN0 (Link0_global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	133
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0_global)
	Destination Address	MN0 (Link0_global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI



Mobility Header	MH Type	6
	Status	133
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5 SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

(*1) PASS: MN0 receives BA w/o RH

(*2) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2



6.4.2.1.5 HA_3_2_4 - CoA=HoA (A=1 & Lifetime=0) w/o HaO

[PURPOSE]

HA_3_2_4 - Invalid De-Registration (Not home agent for this mobile node), CoA=HoA (A=1 & Lifetime=0) w/o HaO

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

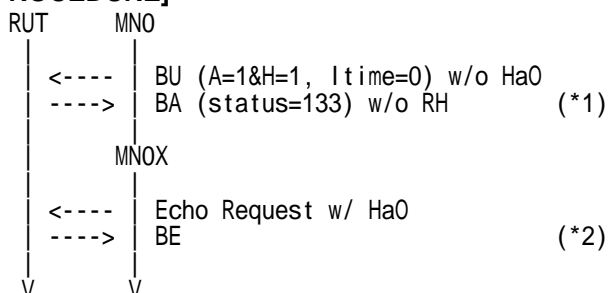
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0 sends BU w/o HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNO (Link0_global)
	Destination Address	RUT (Link0_global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MNO (Link0_global)

2. MN0 receives BA w/o RH (*1) (Refer to 5.10.3, 5.10.4)

IPv6 Header	Source Address	RUT (Link0_global)
	Destination Address	MNO (Link0_global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	133
	K Flag	0
	Sequence	15
	Lifetime	Any
		Lifetime
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0_global)
	Destination Address	MNO (Link0_global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6



	Status	133
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5 SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

(*1) PASS: MN0 receives BA w/o RH

(*2) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2



6.4.2.1.6 HA_3_2_9 - CoA=HoA (A=0 & Lifetime=0) w/o HaO

[PURPOSE]

HA_3_2_9 - Invalid De-Registration (Not home agent for this mobile node), CoA=HoA (A=0 & Lifetime=0) w/o HaO

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

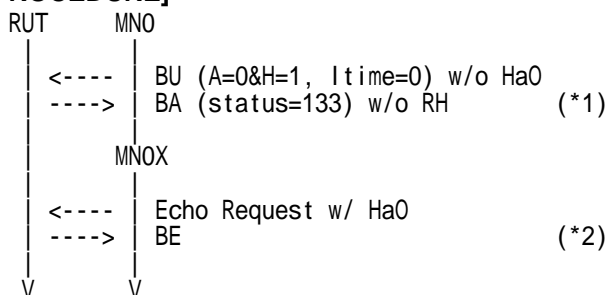
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0 sends BU w/o HaO (Refer to 5.9.2)

IPv6 Header	Source Address	MN0 (Link0_global)
	Destination Address	RUT (Link0_global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MN0 (Link0_global)

2. MN0 receives BA w/o RH (*1) (Refer to 5.10.3, 5.10.4)

IPv6 Header	Source Address	RUT (Link0_global)
	Destination Address	MN0 (Link0_global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	133
	K Flag	0
	Sequence	15
	Lifetime	Any
		Interval

IPv6 Header	Source Address	RUT (Link0_global)
	Destination Address	MN0 (Link0_global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6



	Status	133
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5 SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

(*1) PASS: MN0 receives BA w/o RH

(*2) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2



6.4.2.2 Virtual Home Link

6.4.2.2.1 HA_3_2_11 - CoA!=HoA (A=1 & Lifetime=0) w/ HaO

[PURPOSE]

HA_3_2_11 - Invalid De-Registration (Not home agent for this mobile node), CoA!=HoA (A=1 & Lifetime=0) w/ HaO

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

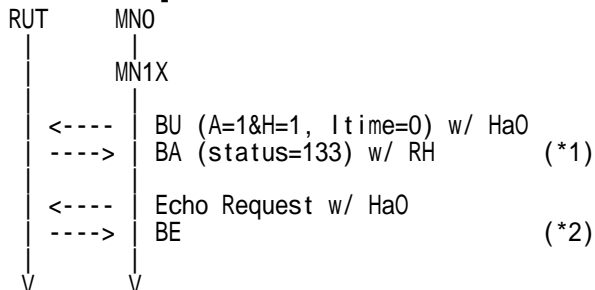
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	133



	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	133
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

(*1) PASS: MN1X receives BA w/ RH

(*2) PASS: MN1X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2



6.4.2.2.2 HA_3_2_12 - CoA!=HoA (A=0 & Lifetime=0) w/ HaO

[PURPOSE]

HA_3_2_12 - Invalid De-Registration (Not home agent for this mobile node), CoA!=HoA (A=0 & Lifetime=0) w/ HaO

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

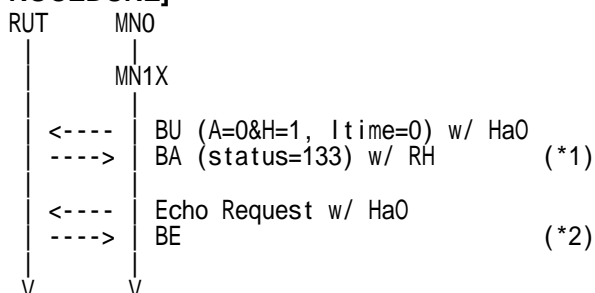
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	133
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any



IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	133
		K Flag	0
		Sequence	15
Lifetime		Any	
PadN Option	Lifetime	Any	
	Length	2	

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

(*1) PASS: MN1X receives BA w/ RH

(*2) PASS: MN1X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2



6.4.3 Invalid De-Registration (Sequence number out of window)

6.4.3.1 Real Home Link

6.4.3.1.1 HA_3_3_1 - CoA=HoA (A=1 & Lifetime=0) w/ HaO

[PURPOSE]

HA_3_3_1 - Invalid De-Registration, Sequence number out of window, CoA=HoA (A=1 & Lifetime=0) w/ HaO

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

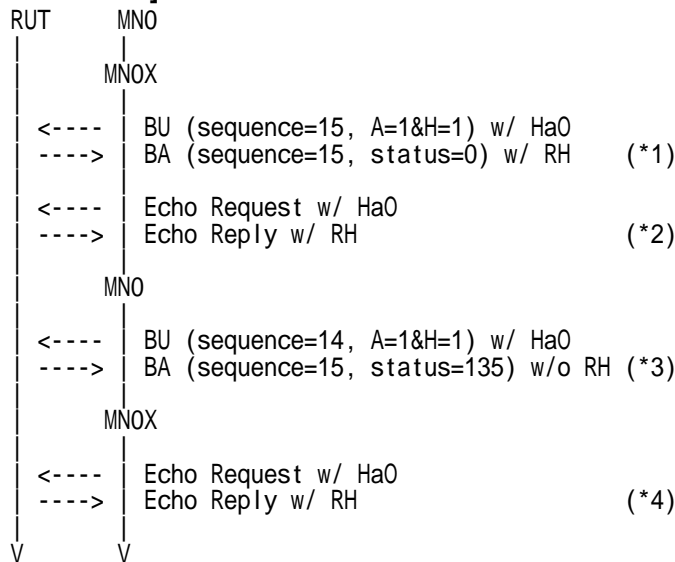
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15

	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. MNO sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	14
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MNO (Link0, global)

6. MN0 receives BA w/o RH (*3) (Refer to 5.10.3, 5.10.4)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

7. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0X receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Destination Option Header	Home Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Destination Option Header	Home Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0 receives BA w/o RH
- (*4) PASS: MN0X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.2



6.4.3.1.2 HA_3_3_2 - CoA=HoA (A=0 & Lifetime=0) w/ HaO

[PURPOSE]

HA_3_3_2 - Invalid De-Registration, Sequence number out of window, CoA=HoA (A=0 & Lifetime=0) w/ HaO

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

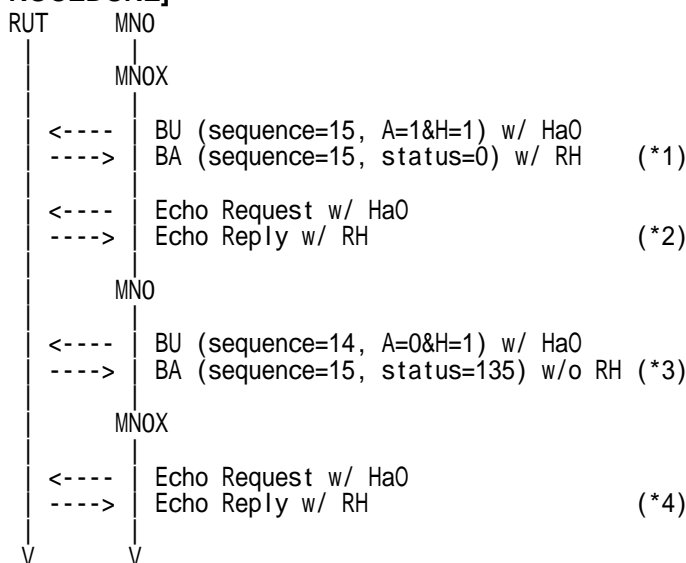
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN0 sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	14
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
	PadN Option	Length
Alternate CoA Option	Address	MN0 (Link0, global)

6. MN0 receives BA w/o RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6



	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

7. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0X receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Type	129

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0 receives BA w/o RH
- (*4) PASS: MN0X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.2



6.4.3.1.3 HA_3_3_3 - CoA=HoA (A=1 & Lifetime=0) w/o HaO

[PURPOSE]

HA_3_3_3 - Invalid De-Registration, Sequence number out of window, CoA=HoA (A=1 & Lifetime=0) w/o HaO

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

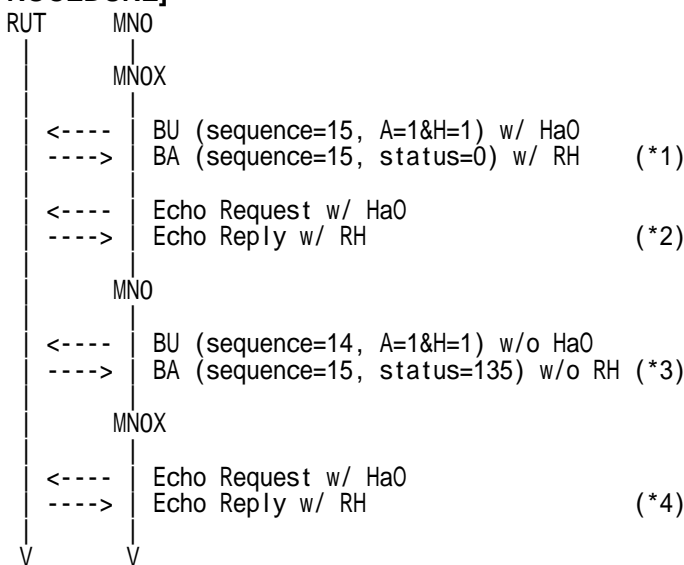
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN0 sends BU w/o HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	RUT (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	14
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MN0 (Link0, global)

6. MN0 receives BA w/o RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135



	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

7. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0X receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0 receives BA w/o RH
- (*4) PASS: MN0X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2



6.4.3.1.4 HA_3_3_4 - CoA=HoA (A=0 & Lifetime=0) w/o HaO

[PURPOSE]

HA_3_3_4 - Invalid De-Registration, Sequence number out of window, CoA=HoA (A=0 & Lifetime=0) w/o HaO

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

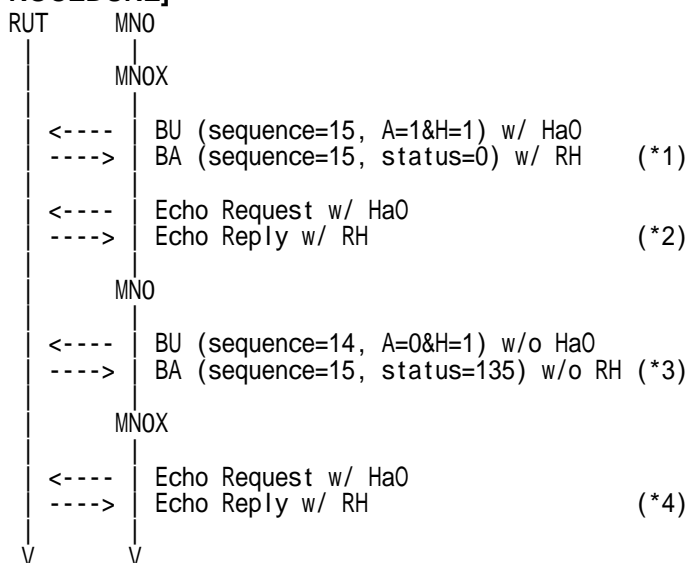
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN0 sends BU w/o HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	RUT (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	14
	A Flag	0
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MN0 (Link0, global)

6. MN0 receives BA w/o RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135



	K Flag	0
	Sequence	15
	Lifetime	Any
Binding Refresh Advice Option	Interval	Any

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	135
	K Flag	0
	Sequence	15
	Lifetime	Any
PadN Option	Length	2

7. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN0X receives Echo Reply w/ RH (*4) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: MN0 receives BA w/o RH
- (*4) PASS: MN0X receives Echo Reply w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2

6.5 Intercepting Packets for a Mobile Node

6.5.1 Sending Multicast NA

6.5.1.1 Real Home Link

6.5.1.1.1 HA_4_1_1 - Sending multicast NA, L=0

[PURPOSE]

HA_4_1_1 - Sending multicast NA , (L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.1 Common Topology-1

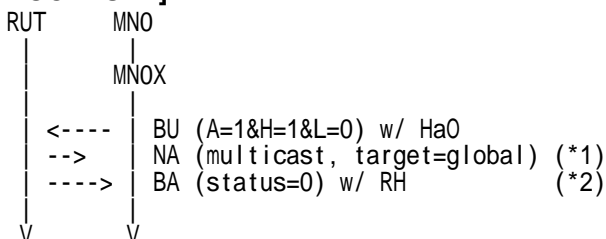
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. RUT sends NA to multicast (*1) (Refer to 5.4.2)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-node multicast address)
ICMPv6 Header	Type	136



	R Flag	0
	S Flag	0
	O Flag	1
	Target Address	MNO (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	(All-node multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	1
	Target Address	MNO (Link0, global)
TTL Option	Address	RUT (ether)

3. MN0X receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	2

[JUDGMENT]

(*1) PASS: RUT sends NA to multicast

(*2) PASS: MN0X receives BA w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

RFC2461 Neighbor Discovery for IPv6

See Section 7.2.6

TTL Option	Address	RUT (ether)
------------	---------	-------------

3. RUT sends NA to multicast (*2) (Refer to 5.4.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	(All-node multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	1
	Target Address	MNO (Link0, link-local)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	(All-node multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	1
	Target Address	MNO (Link0, link-local)
TTL Option	Address	RUT (ether)

4. MN0X receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MHI Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MHI Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

[JUDGMENT]

- (*1) PASS: RUT sends NA (target=global) to multicast
- (*2) PASS: RUT sends NA (target=link-local) to multicast
- (*3) PASS: MN0X receives BA w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

RFC2461 Neighbor Discovery for IPv6

See Section 7.2.6

Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Type	129

5. CNO sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CNO (Link0, global)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)
SLL Option	Address	CNO (ether)

6. CNO receives NA (*3) (Refer to 5.4.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CNO (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)
	TTL Option	Address

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CNO (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0



	Target Address	MNO (Link0_global)
TTL Option	Address	RUT (ether)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: CN0 receives NA

[REFERENCES]

RFC 3775 Mobility Support in IPv6

See Section 10.4.1

RFC2461 Neighbor Discovery for IPv6

See Section 7.2.4, 7.2.8

	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	SA2	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	SA6	
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	SA6	
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.3)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MNO (Link0, global)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)
SLL Option	Address	CN0(ether)

6. CN0 receives NA (*3) (Refer to 5.4.3)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0



	Target Address	MNO (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CNO (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: CN0 receives NA

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

RFC2461 Neighbor Discovery for IPv6

See Section 7.2.4, 7.2.8



6.5.2.1.3 HA_4_2_13 - Receiving unicast NS w/o SLL (target=global), L=0

[PURPOSE]

HA_4_2_13 - Proxy ND (Receiving unicast NS w/o SLL (target=global), L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

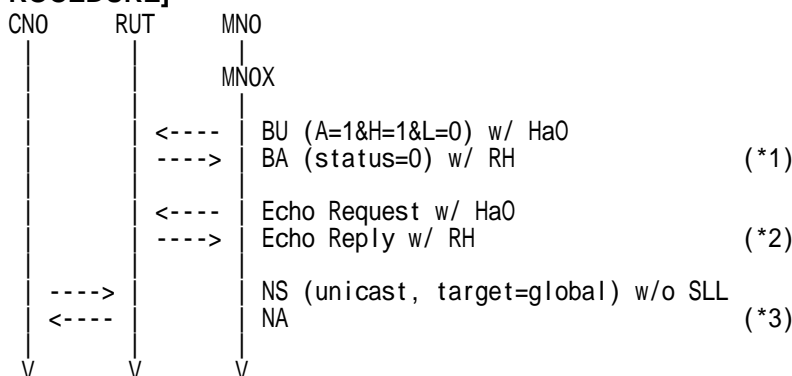
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15

	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	SA6	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=105
	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	SA6_SPI	
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	SA6_SPI	
ICMPv6 Header	Type	129

5. CNO sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	CNO (Link0, global)
	Destination Address	MNO (Link0, global)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)

6. CNO receives NA (*3) (Refer to 5.4.3)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CNO (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CNO (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CNO (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)



TTL Option	Address	RUT (ether)
------------	---------	-------------

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: CN0 receives NA

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.4.1

RFC2461 Neighbor Discovery for IPv6
See Section 7.2.4, 7.2.8

6.5.2.1.4 HA_4_2_3 - Receiving DAD NS (target=global), L=0

[PURPOSE]

HA_4_2_3 - Proxy ND (Receiving DAD NS (target=global), L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

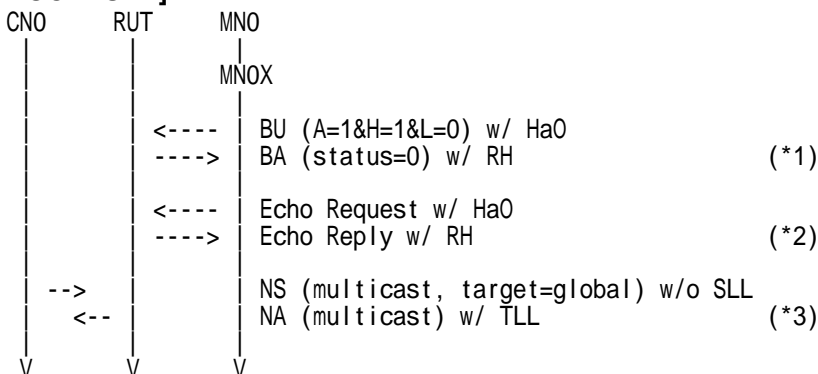
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15

	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)

6. RUT sends NA to multicast (*3) (Refer to 5.4.3)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	0
	Target Address	MNO (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	0
	Target Address	MNO (Link0, global)
TTL Option	Address	RUT (ether)

[JUDGMENT]

(* 1) PASS: MNOX receives BA w/ RH



- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: RUT sends NA to all-nodes multicast address

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

RFC2461 Neighbor Discovery for IPv6

See Section 7.2.4, 7.2.8



6.5.2.1.5 HA_4_2_4 - Receiving multicast NS w/ SLL (target=global), L=1

[PURPOSE]

HA_4_2_4 - Proxy ND (Receiving multicast NS w/ SLL (target=global), L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

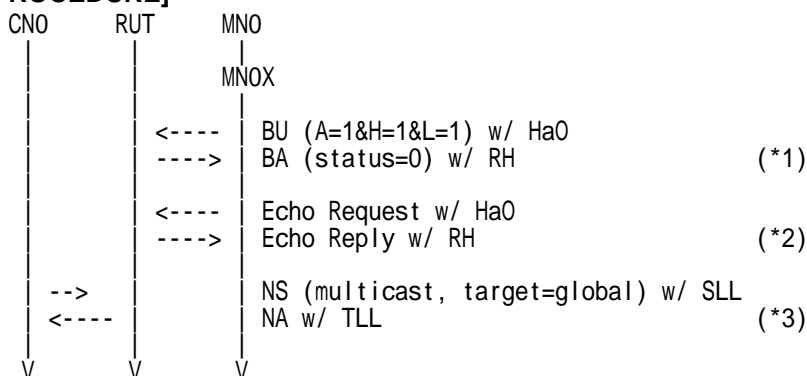
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ Ha0 (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15

	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. CNO sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CNO (Link0, global)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)
SLL Option	Address	CNO (ether)

6. CNO receives NA (*3) (Refer to 5.4.3)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CNO (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CNO (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)
TTL Option	Address	RUT (ether)

[JUDGMENT]

(* 1) PASS: MNOX receives BA w/ RH



(*2) PASS: MN0X receives Echo Reply w/ RH

(*3) PASS: CN0 receives NA

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

RFC2461 Neighbor Discovery for IPv6

See Section 7.2.4, 7.2.8

	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. CNO sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CNO (Link0, global)
	Destination Address	MNO (Link0, global)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)
SLL Option	Address	CNO (ether)

6. CNO receives NA (*3) (Refer to 5.4.2, 5.4.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CNO (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CNO (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CNO (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0



	Target Address	MNO (Link0, global)
TLL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CNO (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: CN0 receives NA

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

RFC2461 Neighbor Discovery for IPv6

See Section 7.2.4, 7.2.8



6.5.2.1.7 HA_4_2_14 - Receiving unicast NS w/o SLL (target=global), L=1

[PURPOSE]

HA_4_2_14 - Proxy ND (Receiving unicast NS w/o SLL (target=global), L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

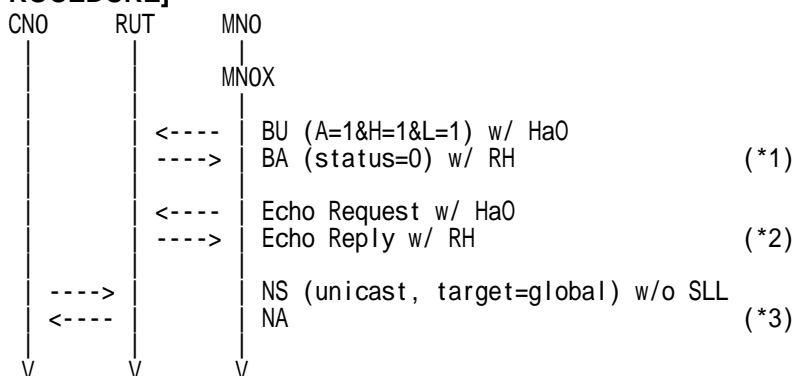
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15

	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	SA2	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	SA6	
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	SA6	
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MNO (Link0, global)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)

6. CN0 receives NA (*3) (Refer to 5.4.2, 5.4.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)
	TTL Option	Address

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MNO (Link0, global)



TLL Option	Address	RUT (ether)
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IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: CN0 receives NA

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.4.1

RFC2461 Neighbor Discovery for IPv6
See Section 7.2.4, 7.2.8



6.5.2.1.8 HA_4_2_6 - Receiving DAD NS (target=global), L=1

[PURPOSE]

HA_4_2_6 - Proxy ND (Receiving DAD NS (target=global), L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

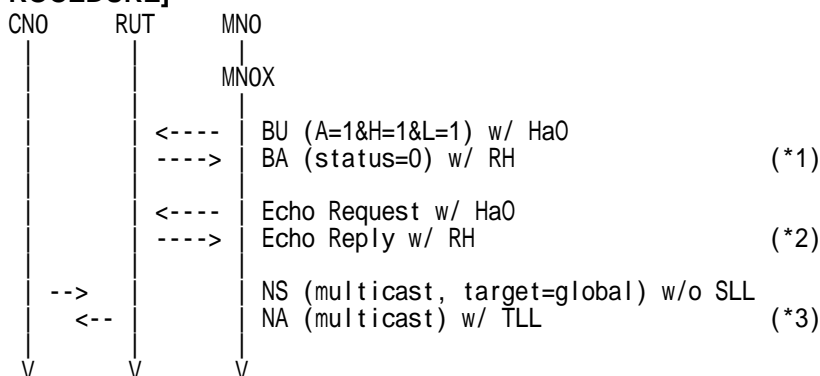
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15

	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	IPv6 Header	IPv6 Header
Type 2 Routing Header	Destination Address	MNOX (Link0X, global)
	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)

6. RUT sends NA to multicast (*3) (Refer to 5.4.2)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	0
	Target Address	MNO (Link0, global)
	TTL Option	Address

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	0
	Target Address	MNO (Link0, global)
	TTL Option	Address

[JUDGMENT]

(* 1) PASS: MNOX receives BA w/ RH



- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: RUT sends NA to all-nodes multicast address

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

RFC2461 Neighbor Discovery for IPv6

See Section 7.2.4, 7.2.8



6.5.2.1.9 HA_4_2_9 - Receiving DAD NS (target=link-local), L=1

[PURPOSE]

HA_4_2_9 - Proxy ND (Receiving DAD NS (target=link-local), L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

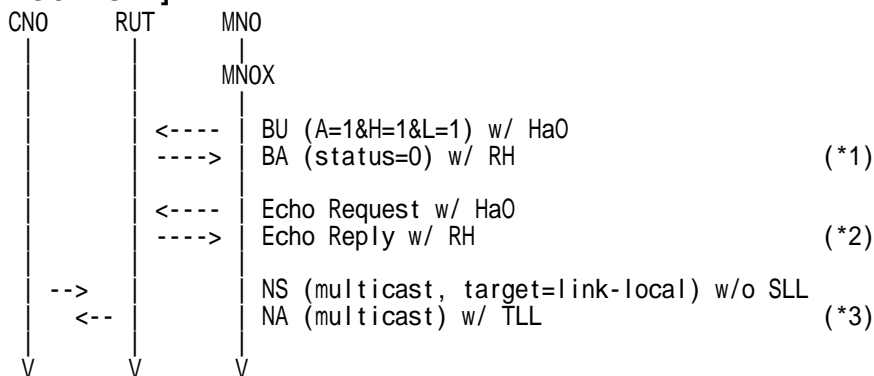
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15

	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. CNO sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, link-local)

6. RUT sends NA to multicast (*3) (Refer to 5.4.2)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	0
	Target Address	MNO (Link0, link-local)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	0
	Target Address	MNO (Link0, link-local)
TTL Option	Address	RUT (ether)

[JUDGMENT]

(* 1) PASS: MNOX receives BA w/ RH



- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: RUT sends NA to all-nodes multicast address

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

RFC2461 Neighbor Discovery for IPv6

See Section 7.2.4, 7.2.8



6.5.3 Stop Proxy ND after De-Registration

6.5.3.1 Real Home Link

6.5.3.1.1 HA_4_4_1 - Receiving multicast NS w/ SLL (target=global), L=0

[PURPOSE]

HA_4_4_1 - Stop proxy ND after de-registration (Receiving multicast NS w/ SLL (target=global), L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

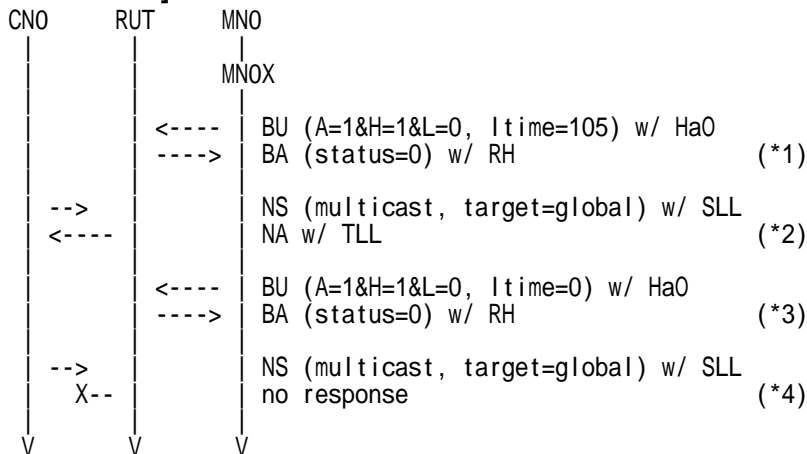
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1 SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
Binding Refresh Advice Option	Lifetime	<=105
	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=105
	Length	2

3. CN0 sends NS (Refer to 5.3.3)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MN0 (Link0, solicited-node multicast address)
ICMPv6 Header	type	135
	target	MN0 (Link0, global)
SLL	Address	CN0 (ether)

4. CN0 receives NA (*2) (Refer to 5.4.3)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)
	Address	RUT (ether)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)
	Address	RUT (ether)
TTL Option	Address	RUT (ether)

5. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
	Length	0
	Address	MN0X (Link0X, global)
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

6. MN0X receives BA w/ RH (*3) (Refer to 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0
	K Flag	0
	Sequence	16
PadN Option	Lifetime	0
	Length	2



7. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MN0 (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MN0 (Link0, global)
SLL Option	Address	CN0(ether)

8. no response (*4)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: CN0 receives NA

(*3) PASS: MN0X receives BA w/ RH

(*4) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2

	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	type	135
	target	MN0 (Link0, global)
SLL	Address	CN0 (ether)

4. CN0 receives NA (*2) (Refer to 5.4.2, 5.4.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)
TLL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)

5. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
	Length	0
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

6. MN0X receives BA w/ RH (*3) (Refer to 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI



Mobility Header	MH Type	6
	Status	0
	K Flag	0
	Sequence	16
	Lifetime	0
PadN Option	Length	2

7. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	136
	Target Address	MN0 (Link0, global)
SLL Option	Address	CN0 (ether)

8. no response (*4)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: CN0 receives NA

(*3) PASS: MN0X receives BA w/ RH

(*4) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2



6.5.3.1.3 HA_4_4_13 - Receiving unicast NS w/o SLL (target=global), L=0

[PURPOSE]

HA_4_4_13 - Stop proxy ND after de-registration (Receiving unicast NS w/o SLL (target=global), L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

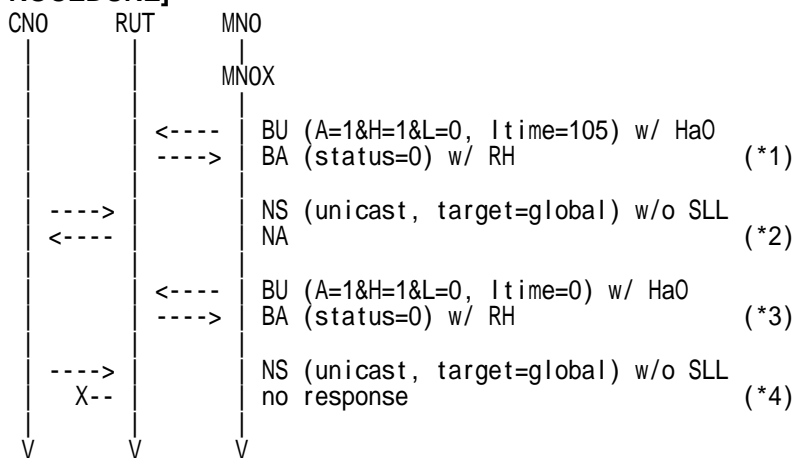
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2

	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	135
	target	MN0 (Link0, global)

4. CN0 receives NA (*2) (Refer to 5.4.2, 5.4.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)

5. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

6. MN0X receives BA w/ RH (*3) (Refer to 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6



	Status	0
	K Flag	0
	Sequence	16
	Lifetime	0
PadN Option	Length	2

7. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	136
	Target Address	MN0 (Link0, global)

8. no response (*4)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: CN0 receives NA

(*3) PASS: MN0X receives BA w/ RH

(*4) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MNOX (Link0X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MNO (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0 or 1
		K Flag	0
		Sequence	15
Lifetime		<=105	
PadN Option	Length	2	

3. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)

4. RUT sends NA to multicast (*2) (Refer to 5.4.2)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	0
	Target Address	MNO (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	0
	Target Address	MNO (Link0, global)
TTL Option	Address	RUT (ether)

5. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)	
	Destination Address	RUT (Link0, global)	
Destination Option Header	Home Address	MNO (Link0, global)	
Encapsulating Security Payload	Security Parameters Index	SA1_SPI	
Mobility Header	MH Type	5	
	Sequence Number	16	
	A Flag	1	
	H Flag	1	
	L Flag	0	
	K Flag	0	
	Lifetime	0	
	Length	0	
	PadN Option	Length	0
	Alternate CoA Option	Address	MNOX (Link0X, global)

6. MNOX receives BA w/ RH (*3) (Refer to 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MNOX (Link0X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MNO (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0
		K Flag	0
		Sequence	16
Lifetime		0	
PadN Option	Length	2	

7. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)

8. no response (*4)



[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: RUT sends NA to all-nodes multicast address
- (*3) PASS: MN0X receives BA w/ RH
- (*4) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.2

6.5.3.1.5 HA_4_4_4 - Receiving multicast NS w/ SLL (target=global), L=1

[PURPOSE]

HA_4_4_4 - Stop proxy ND after de-registration (Receiving multicast NS w/ SLL (target=global), L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

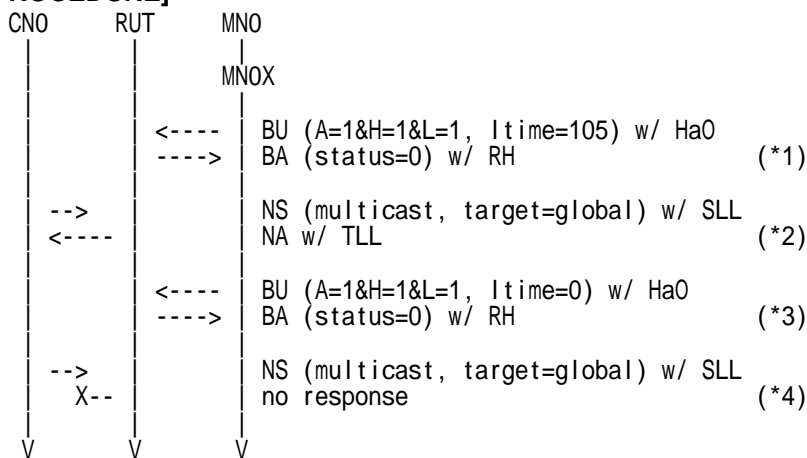
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2

	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MN0 (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Address	MN0 (Link0, global)
SLL Option	Address	CN0 (ether)

4. CN0 receives NA (*2) (Refer to 5.4.3)

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	CN0 (Link0, global)	
ICMPv6 Header	Type	136	
	R Flag	0	
	S Flag	1	
	O Flag	0	
	Target Address	MN0 (Link0, global)	
	TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, link-local)	
	Destination Address	CN0 (Link0, global)	
ICMPv6 Header	Type	136	
	R Flag	0	
	S Flag	1	
	O Flag	0	
	Target Address	MN0 (Link0, global)	
	TTL Option	Address	RUT (ether)

5. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)	
	Destination Address	RUT (Link0, global)	
Destination Option Header	Home Address	MN0 (Link0, global)	
Encapsulating Security Payload	Security Parameters Index	SA1_SPI	
Mobility Header	MH Type	5	
	Sequence Number	16	
	A Flag	1	
	H Flag	1	
	L Flag	1	
	K Flag	0	
	Lifetime	0	
	PadN Option	Length	0
	Alternate CoA Option	Address	MN0X (Link0X, global)

6. MN0X receives BA w/ RH (*3) (Refer to 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0
	K Flag	0
	Sequence	16
	Lifetime	0
PadN Option	Length	2

7. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MN0 (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MN0 (Link0, global)
SLL Option	Address	CN0 (ether)



8. no response (*4)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: CN0 receives NA

(*3) PASS: MN0X receives BA w/ RH

(*4) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2



6.5.3.1.6 HA_4_4_5 - Receiving unicast NS w/ SLL (target=global), L=1

[PURPOSE]

HA_4_4_5 - Stop proxy ND after de-registration (Receiving unicast NS w/ SLL (target=global), L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

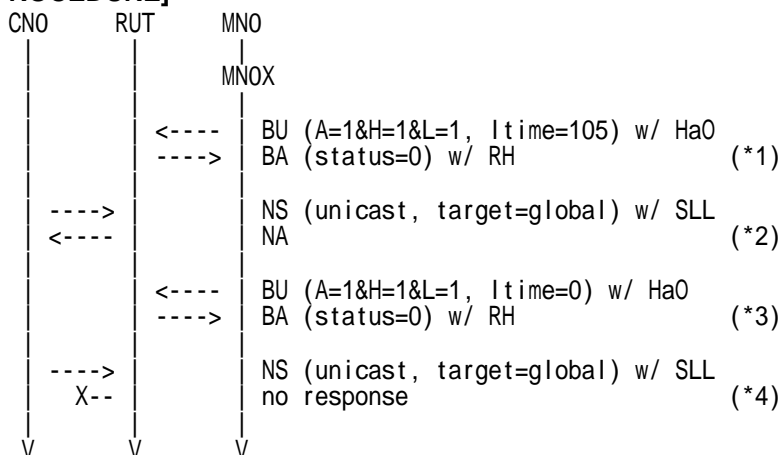
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2

	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. CN0 sends NS (Refer to 5.3.3)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	128
	Target Address	MN0 (Link0, global)
SLL Option	Address	CN0 (ether)

4. CN0 receives NA (*2) (Refer to 5.4.3)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)
TLL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)

5. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	0
	Length	0
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

6. MN0X receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI



Mobility Header	MH Type	6
	Status	0
	K Flag	0
	Sequence	16
	Lifetime	0
PadN Option	Length	2

7. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	128
	Target Address	MN0 (Link0, global)
SLL Option	Address	CN0 (ether)

8. no response (*4)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: CN0 receives NA

(*3) PASS: MN0X receives BA w/ RH

(*4) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2



6.5.3.1.7 HA_4_4_14 - Receiving unicast NS w/o SLL (target=global), L=1

[PURPOSE]

HA_4_4_14 - Stop proxy ND after de-registration (Receiving unicast NS w/o SLL (target=global), L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

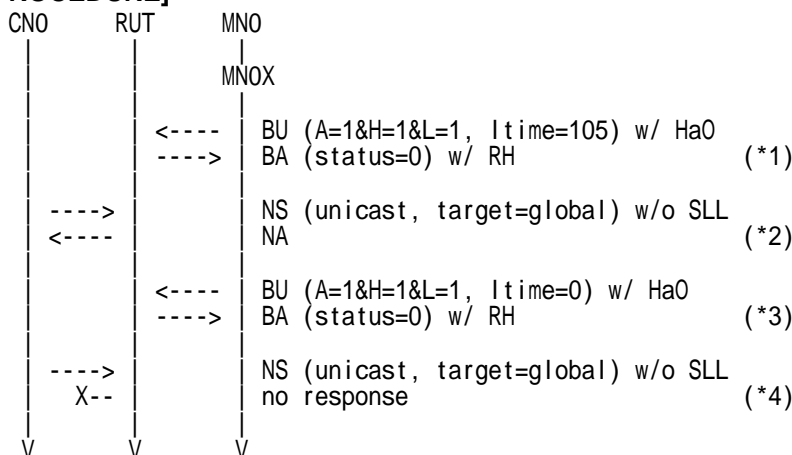
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2

	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	135
	Target	MN0 (Link0, global)

4. CN0 receives NA (*2) (Refer to 5.4.2, 5.4.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)
TLL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CN0 (Link0, global)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	1
	O Flag	0
	Target Address	MN0 (Link0, global)

5. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	0
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

6. MN0X receives BA w/ RH (*3) (Refer to 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6



	Status	0
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

7. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	135
	Target	MN0 (Link0, global)

8. no response (*4)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: CN0 receives NA

(*3) PASS: MN0X receives BA w/ RH

(*4) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.3.2

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0 or 1
		K Flag	0
		Sequence	15
Lifetime		<=105	
PadN Option	Length	2	

3. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	unspecified address
	Destination Address	MN0 (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	target	MN0 (Link0, global)

4. RUT sends NA to multicast (*2) (Refer to 5.4.2)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	0
	Target Address	MN0 (Link0, global)
TTL Option	Address	RUT (ether)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	0
	Target Address	MN0 (Link0, global)
TTL Option	Address	RUT (ether)

5. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)	
	Destination Address	RUT (Link0, global)	
Destination Option Header	Home Address	MN0 (Link0, global)	
Encapsulating Security Payload	Security Parameters Index	SA1_SPI	
Mobility Header	MH Type	5	
	Sequence Number	16	
	A Flag	1	
	H Flag	1	
	L Flag	1	
	K Flag	0	
	Lifetime	0	
	Length	0	
	PadN Option	Length	0
	Alternate CoA Option	Address	MN0X (Link0X, global)

6. MN0X receives BA w/ RH (*3) (Refer to 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN0X (Link0X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0
		K Flag	0
		Sequence	16
Lifetime		0	
PadN Option	Length	2	

7. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MN0 (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MN0 (Link0, global)

8. no response (*4)



[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: RUT sends NA to all-nodes multicast address
- (*3) PASS: MN0X receives BA w/ RH
- (*4) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.2

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
Binding Refresh Advice Option	Lifetime	<=105
	Interval	2

3. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, global)

4. RUT sends NA to multicast (*2) (Refer to 5.4.3)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	0
	Target Address	MNO (Link0, link-local)
	TTL Option	Address

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	136
	R Flag	0
	S Flag	0
	O Flag	0
	Target Address	MNO (Link0, link-local)
	TTL Option	Address

5. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)	
	Destination Address	RUT (Link0, global)	
Destination Option Header	Home Address	MNO (Link0, global)	
Encapsulating Security Payload	Security Parameters Index	SA1_SPI	
Mobility Header	MH Type	5	
	Sequence Number	16	
	A Flag	1	
	H Flag	1	
	L Flag	1	
	K Flag	0	
	Lifetime	0	
	PadN Option	Length	0
	Alternate CoA Option	Address	MNOX (Link0X, global)

6. MNOX receives BA w/ RH (*3) (Refer to 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0
	K Flag	0
	Sequence	16
Binding Refresh Advice Option	Lifetime	0
	Interval	2

7. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (link-local, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MNO (Link0, link-local)

8. no response (*4)



[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: RUT sends NA to all-nodes multicast address
- (*3) PASS: MN0X receives BA w/ RH
- (*4) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.3.2



6.5.4 Receiving invalid NS (the target address has a different address scope.)

6.5.4.1 Real Home Link

6.5.4.1.1 HA_4_2_12 - Receiving DAD NS (target=link-local), L=0

[PURPOSE]

HA_4_2_12 - Receiving invalid NS - the target address has a different address scope (Receiving DAD NS (target=link-local), L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

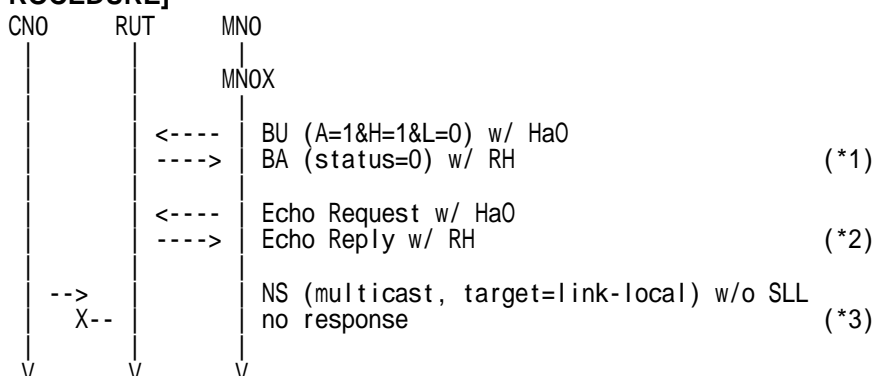
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MN0 (Link0, link-local, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	MN0 (Link0, link-local)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: MN0X receives Echo Reply w/ RH

(*3) PASS: no response



[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1



6.5.5 Receiving invalid NS (invalid target)

6.5.5.1 Real Home Link

6.5.5.1.1 HA_4_3_1 - Receiving multicast NS w/ SLL (target=global, invalid), L=0

[PURPOSE]

HA_4_3_1 - Receiving invalid NS - invalid target (Receiving multicast NS w/ SLL (target=global, invalid), L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

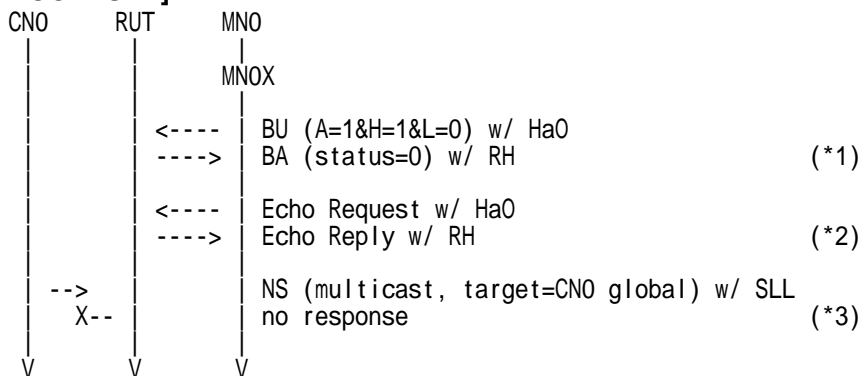
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ Ha0 (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MNO (Link0, link-local, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	CN0 (Link0, global)
SLL Option	Address	CN0 (ether)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: MN0X receives Echo Reply w/ RH

(*3) PASS: no response



[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

6.5.5.1.2 HA_4_3_2 - Receiving unicast NS w/ SLL (target=global, invalid), L=0

[PURPOSE]

HA_4_3_2 - Receiving invalid NS - invalid target (Receiving unicast NS w/ SLL (target=global, invalid), L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

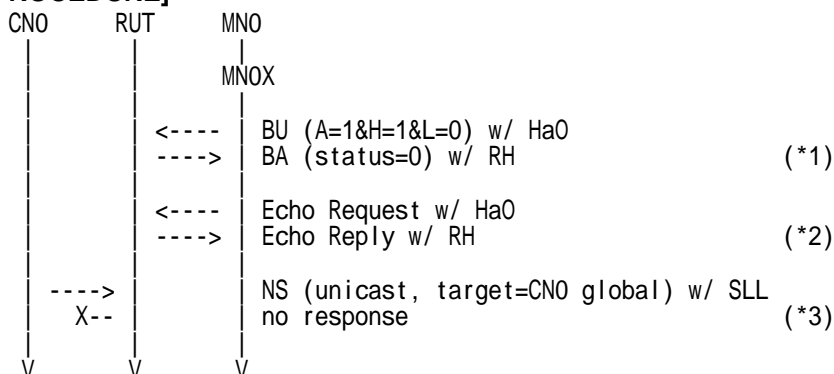
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1



	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
Type 2 Routing Header	Destination Address	MNOX (Link0X, global)
	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Type	129

5. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MNO (Link0, global)
ICMPv6 Header	Type	135
SLL Option	Target Address	CN0 (Link0, global)
	Address	CN0 (ether)

6. no response (*3)

[JUDGMENT]

- (*1) PASS: MNOX receives BA w/ RH
- (*2) PASS: MNOX receives Echo Reply w/ RH
- (*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.4.1

6.5.5.1.3 HA_4_3_13 - Receiving unicast NS w/o SLL (target=global, invalid), L=0

[PURPOSE]

HA_4_3_13 - Receiving invalid NS - invalid target (Receiving unicast NS w/o SLL (target=global, invalid), L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

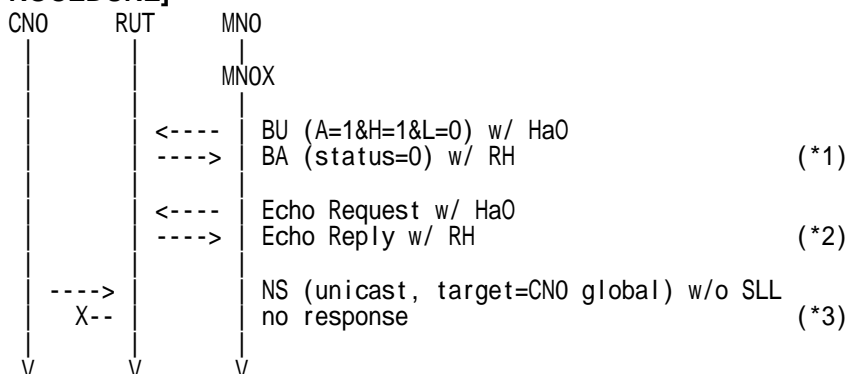
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1

	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MNO (Link0, global)
ICMPv6 Header	Type	135
	Target Address	CN0 (Link0, global)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: MN0X receives Echo Reply w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1



6.5.5.1.4 HA_4_3_3 - Receiving DAD NS (target=global, invalid), L=0

[PURPOSE]

HA_4_3_3 - Receiving invalid NS - invalid target (Receiving DAD NS (target=global, invalid), L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

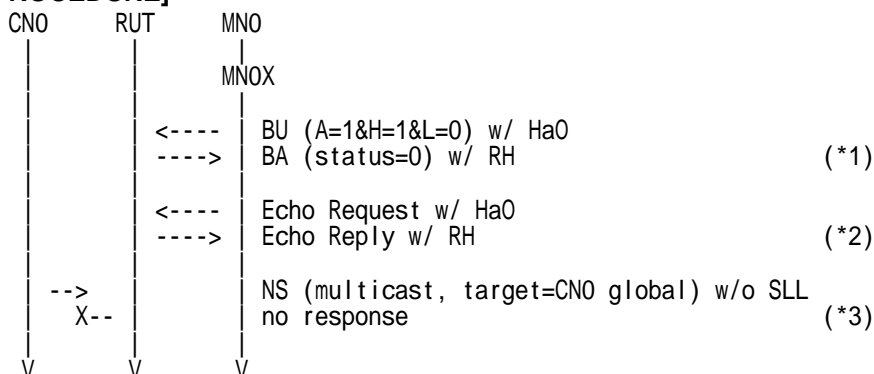
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1

	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	CN0 (Link0, global)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MNOX receives BA w/ RH

(*2) PASS: MNOX receives Echo Reply w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

6.5.5.1.5 HA_4_3_10 - Receiving multicast NS w/ SLL (target=link-local, invalid), L=0

[PURPOSE]

HA_4_3_10 - Receiving invalid NS - invalid target (Receiving multicast NS w/ SLL (target=link-local, invalid), L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

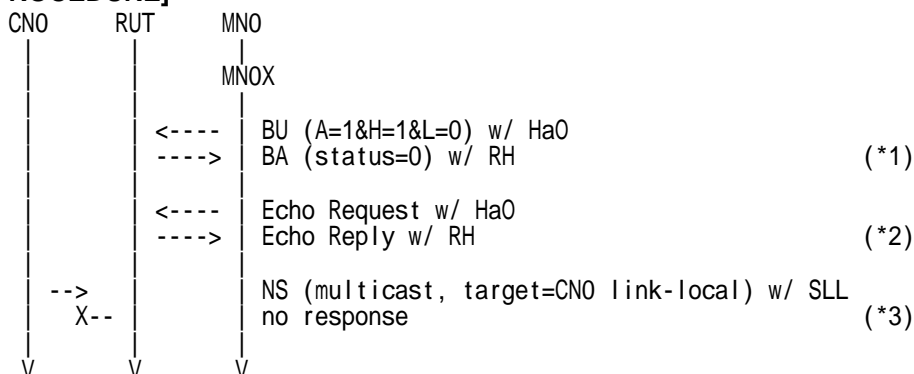
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1

	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, link-local)
	Destination Address	MNO (Link0, link-local, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	CN0 (Link0, link-local)
SLL Option	Address	CN0 (ether)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MNOX receives BA w/ RH

(*2) PASS: MNOX receives Echo Reply w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

6.5.5.1.6 HA_4_3_11 - Receiving unicast NS w/ SLL (target=link-local, invalid), L=0

[PURPOSE]

HA_4_3_11 - Receiving invalid NS - invalid target (Receiving unicast NS w/ SLL (target=linklocal, invalid), L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

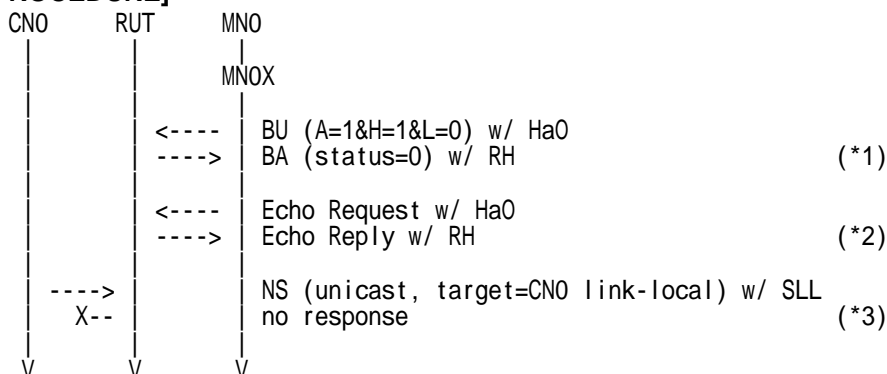
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1



	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, link-local)
	Destination Address	MNO (Link0, link-local)
ICMPv6 Header	Type	135
	Target Address	CN0 (Link0, link-local)
SLL Option	Address	CN0 (ether)

6. no response (*3)

[JUDGMENT]

- (*1) PASS: MNOX receives BA w/ RH
- (*2) PASS: MNOX receives Echo Reply w/ RH
- (*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.4.1

6.5.5.1.7 HA_4_3_16 - Receiving unicast NS w/o SLL (target=link-local, invalid), L=0

[PURPOSE]

HA_4_3_16 - Receiving invalid NS - invalid target (Receiving unicast NS w/o SLL (target=linklocal, invalid), L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

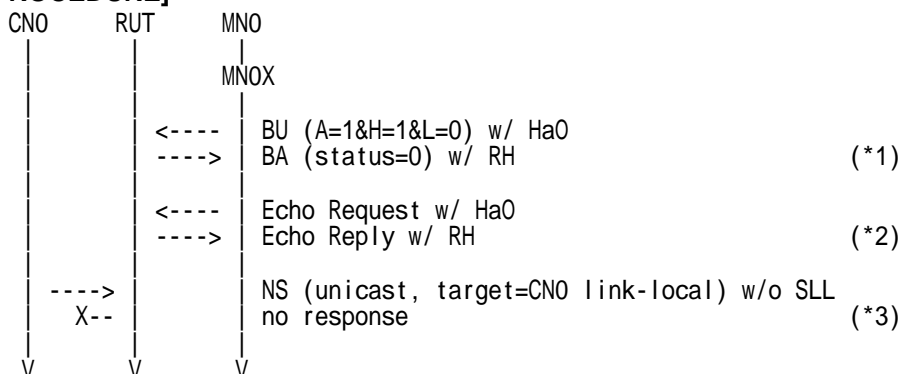
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1

	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. CNO sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	CNO (Link0, link-local)
	Destination Address	MNO (Link0, link-local)
ICMPv6 Header	Type	135
	Target Address	CNO (Link0, link-local)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MNOX receives BA w/ RH

(*2) PASS: MNOX receives Echo Reply w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1



6.5.5.1.8 HA_4_3_12 - Receiving DAD NS (target=link-local, invalid), L=0

[PURPOSE]

HA_4_3_12 - Receiving invalid NS - invalid target (Receiving DAD NS (target=link-local, invalid), L=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

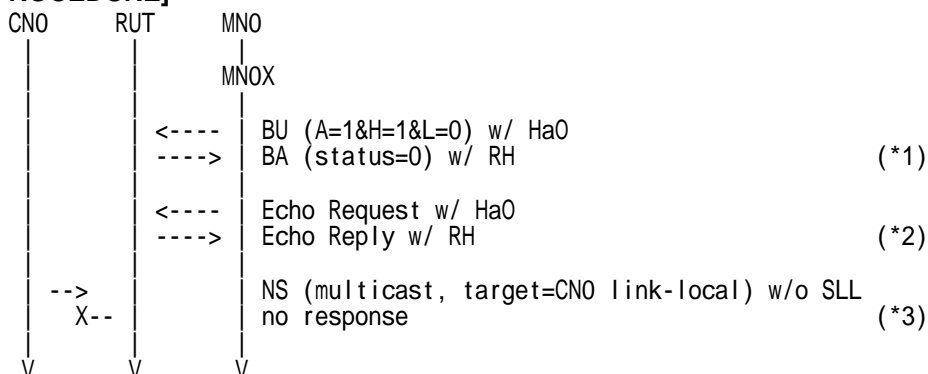
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1

	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, link-local, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	CN0 (Link0, link-local)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: MN0X receives Echo Reply w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

6.5.5.1.9 HA_4_3_4 - Receiving multicast NS w/ SLL (target=global, invalid), L=1

[PURPOSE]

HA_4_3_4 - Receiving invalid NS - invalid target (Receiving multicast NS w/ SLL (target=global, invalid), L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

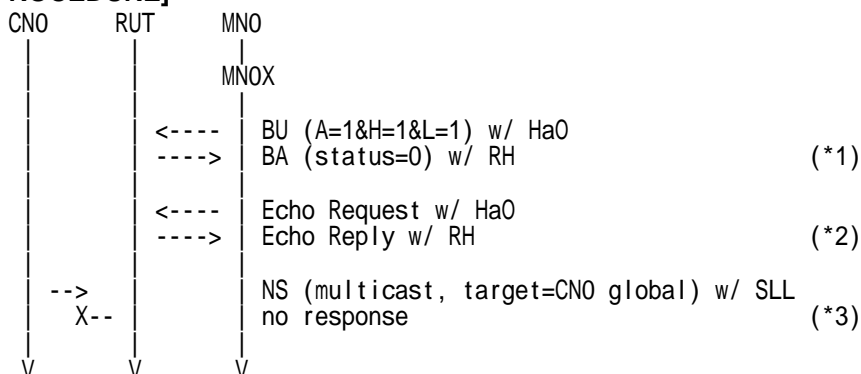
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1

	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MNO (Link0, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	CN (Link0, global)
SLL Option	Address	CN0 (ether)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MNOX receives BA w/ RH

(*2) PASS: MNOX receives Echo Reply w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

6.5.5.1.10 HA_4_3_5 - Receiving unicast NS w/ SLL (target=global, invalid), L=1

[PURPOSE]

HA_4_3_5 - Receiving invalid NS - invalid target (Receiving unicast NS w/ SLL (target=global, invalid), L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

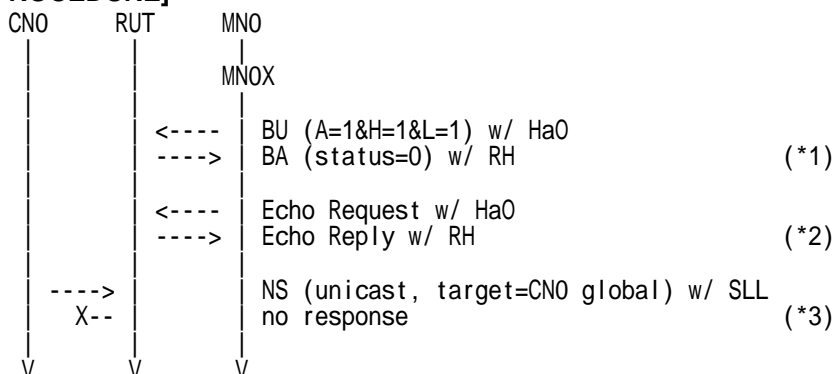
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1

	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
Type 2 Routing Header	Destination Address	MNOX (Link0X, global)
	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Type	129

5. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, global)
	Destination Address	MNO (Link0, global)
ICMPv6 Header	Type	135
SLL Option	Target Address	CN0 (Link0, global)
	Address	CN0 (ether)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MNOX receives BA w/ RH

(*2) PASS: MNOX receives Echo Reply w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

6.5.5.1.11 HA_4_3_14 - Receiving unicast NS w/o SLL (target=global, invalid), L=1

[PURPOSE]

HA_4_3_14 - Receiving invalid NS - invalid target (Receiving unicast NS w/o SLL (target=global, invalid), L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

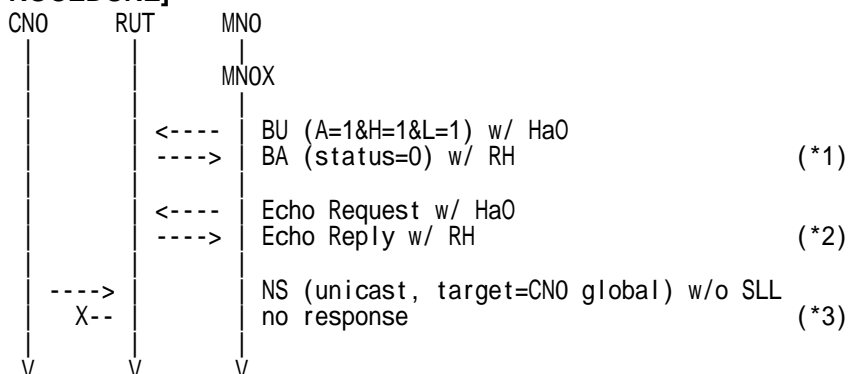
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1

	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. CNO sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	CNO (Link0, global)
	Destination Address	MNO (Link0, global)
ICMPv6 Header	Type	135
	Target Address	CNO (Link0, global)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MNOX receives BA w/ RH

(*2) PASS: MNOX receives Echo Reply w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1



6.5.5.1.12 HA_4_3_6 - Receiving DAD NS (target=global, invalid), L=1

[PURPOSE]

HA_4_3_6 - Receiving invalid NS - invalid target (Receiving DAD NS (target=global, invalid), L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

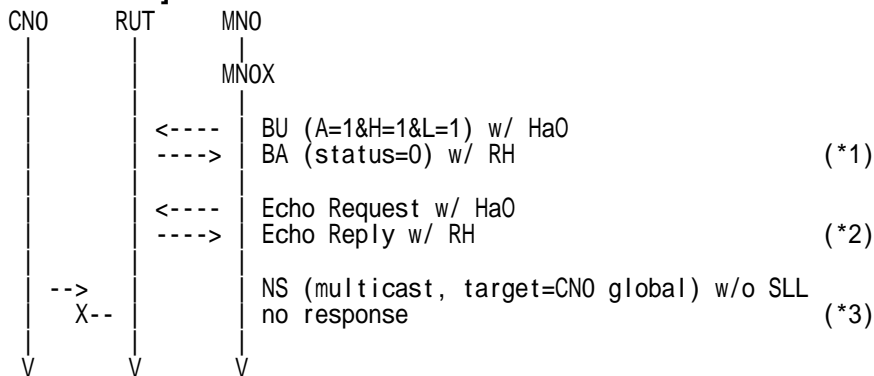
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1

	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
Type 2 Routing Header	Destination Address	MNOX (Link0X, global)
	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Type	129

5. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MN0 (Link0, global, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	CN0 (Link0, global)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: MN0X receives Echo Reply w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1



	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, link-local)
	Destination Address	MNO (Link0, link-local, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	CN0 (Link0, link-local)
SLL Option	Address	CN0 (ether)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MNOX receives BA w/ RH

(*2) PASS: MNOX receives Echo Reply w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1



6.5.5.1.14 HA_4_3_8 - Receiving unicast NS w/ SLL (target=link-local, invalid), L=1

[PURPOSE]

HA_4_3_8 - Receiving invalid NS - invalid target (Receiving unicast NS w/ SLL (target=linklocal, invalid), L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

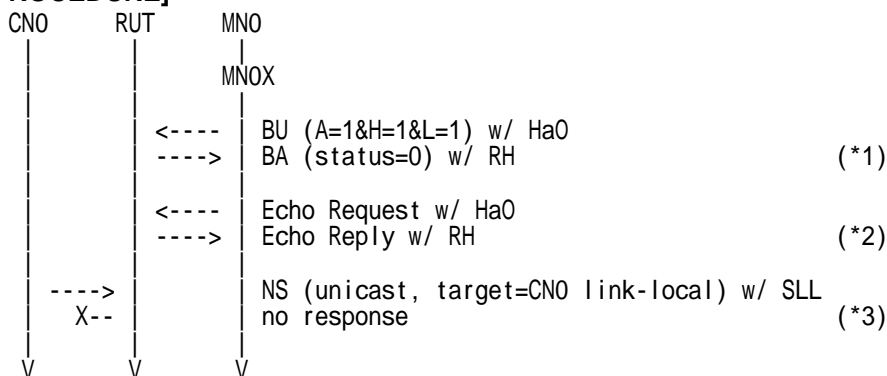
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1



	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.2)

IPv6 Header	Source Address	CN0 (Link0, link-local)
	Destination Address	MNO (Link0, link-local, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	CN0 (Link0, link-local)
SLL Option	Address	CN0 (ether)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MNOX receives BA w/ RH

(*2) PASS: MNOX receives Echo Reply w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

6.5.5.1.15 HA_4_3_15 - Receiving unicast NS w/o SLL (target=link-local, invalid), L=1

[PURPOSE]

HA_4_3_15 - Receiving invalid NS - invalid target (Receiving unicast NS w/o SLL (target=linklocal, invalid), L=1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

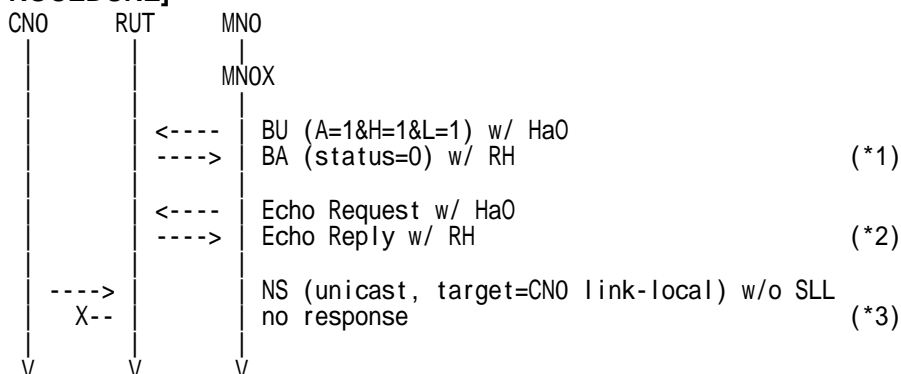
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1



	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. CNO sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	CNO (Link0, link-local)
	Destination Address	MNO (Link0, link-local)
ICMPv6 Header	Type	135
	Target Address	CNO (Link0, link-local)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MNOX receives BA w/ RH

(*2) PASS: MNOX receives Echo Reply w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1



	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function "Fine-Grain Selectors"

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. CN0 sends NS (Refer to 5.3.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	MNO (Link0, link-local, solicited-node multicast address)
ICMPv6 Header	Type	135
	Target Address	CN0 (Link0, link-local)

6. no response (*3)

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: MN0X receives Echo Reply w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.1

6.6 Processing Intercepted Packets

6.6.1 Tunneling Intercepted Packets

6.6.1.1 Real Home Link

6.6.1.1.1 HA_5_1_1 - Echo Request from CN to MN (global)

[PURPOSE]

HA_5_1_1 - Tunneling Intercepted Packets, Echo Request from CN to MN (global)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

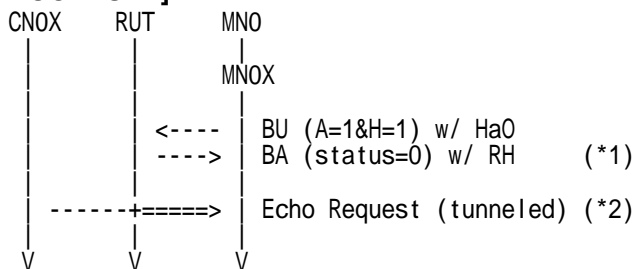
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0,global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1 SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)



Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. CN0X sends Echo Request (Refer to 5.5.1)

IPv6 Header	Source Address	CN0X (Link0X, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Request (tunneled) (*2) (Refer to 5.5.3)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
IPv6 Header	Source Address	CN0X (Link0X, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: MN0X receives Echo Request (tunneled)

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.2

6.6.1.1.2 HA_5_1_4 - Update tunnel end point

[PURPOSE]

HA_5_1_4 - Tunneling Intercepted Packets, Update tunnel end point

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

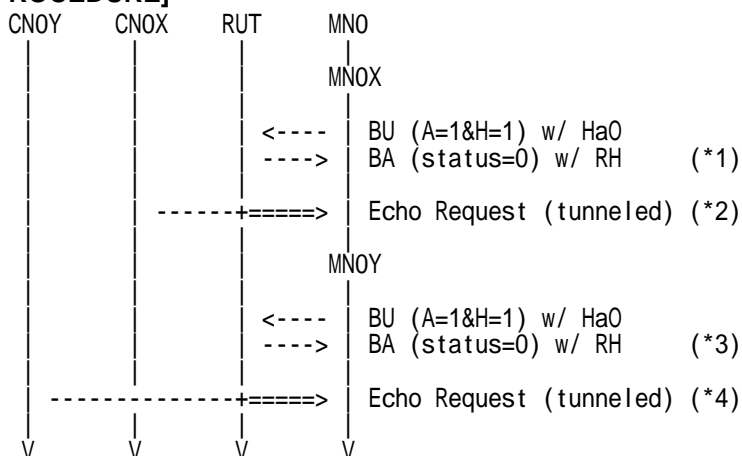
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MNOX (Link0X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MNO (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0 or 1
		K Flag	0
		Sequence	15
Lifetime		<=105	
PadN Option	Length	2	

3. CN0X sends Echo Request (Refer to 5.5.1)

IPv6 Header	Source Address	CN0X (Link0X, global)
	Destination Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MN0X receives Echo Request (tunneled) (*2) (Refer to 5.5.3)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
IPv6 Header	Source Address	CN0X (Link0X, global)
	Destination Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. MN0Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
	PadN Option	Length
Alternate CoA Option	Address	MN0Y (Link0Y, global)

6. MN0Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)		
	Destination Address	MN0Y (Link0Y, global)		
Type 2 Routing Header	Length	2		
	Type	2		
	Segment left	1		
	Home Address	MNO (Link0, global)		
	Security Parameters Index	SA2_SPI		
Encapsulating Security Payload	Security Parameters Index	SA2_SPI		
	Mobility Header	MH Type	6	
		Status	0 or 1	
		K Flag	0	
		Sequence	16	
		Lifetime	<=105	
		Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)		
	Destination Address	MN0Y (Link0Y, global)		
Type 2 Routing Header	Length	2		
	Type	2		
	Segment left	1		
	Home Address	MNO (Link0, global)		
	Security Parameters Index	SA2_SPI		
Encapsulating Security Payload	Security Parameters Index	SA2_SPI		
	Mobility Header	MH Type	6	
		Status	0 or 1	
		K Flag	0	
		Sequence	16	
		Lifetime	<=105	
		PadN Option	Length	2

7. CN0Y sends Echo Request (Refer to 5.5.1)

IPv6 Header	Source Address	CN0Y (Link0Y, global)
	Destination Address	MNO (Link0, global)
ICMPv6 Header	Type	128

8. MN0Y receives Echo Request (tunneled) (*4) (Refer to 5.5.3)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
IPv6 Header	Source Address	CN0Y (Link0Y, global)



	Destination Address	MNO (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Request (tunneled)
- (*3) PASS: MN0Y receives BA w/ RH
- (*4) PASS: MN0Y receives Echo Request (tunneled)

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.4.2

6.6.1.2 Virtual Home Link

6.6.1.2.1 HA_5_1_5 - Echo Request from CN to MN (global)

[PURPOSE]

HA_5_1_5 - Tunneling Intercepted Packets, Echo Request from CN to MN (global)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

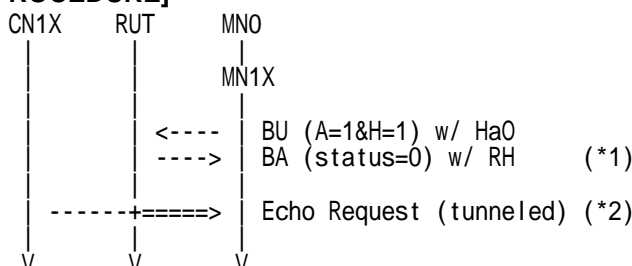
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
	MH Type	5
Mobility Header	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
	PadN Option	Length
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
Mobility Header	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
	Binding Refresh Advice Option	Interval



IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. CN1X sends Echo Request (Refer to 5.5.1)

IPv6 Header	Source Address	CN1X (Link1X, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Request (tunneled) (*2) (Refer to 5.5.3)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
IPv6 Header	Source Address	CN1X (Link1X, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

(*1) PASS: MN1X receives BA w/ RH

(*2) PASS: MN1X receives Echo Request (tunneled)

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.2

6.6.1.2.2 HA_5_1_6 - Update tunnel end point

[PURPOSE]

HA_5_1_6 - Tunneling Intercepted Packets, Update tunnel end point

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

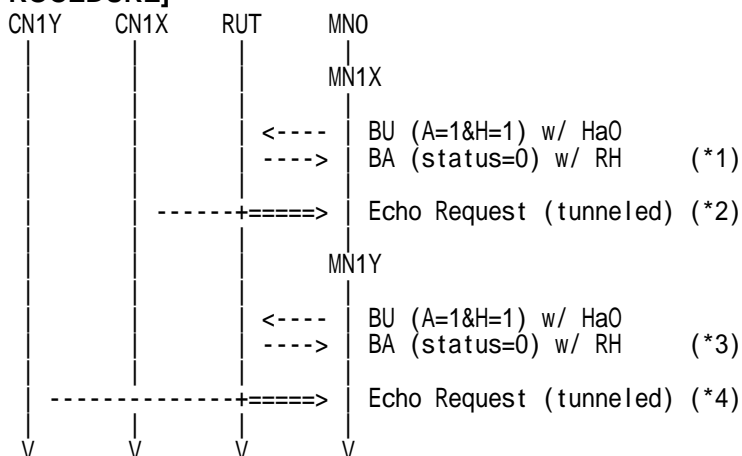
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0 or 1
		K Flag	0
		Sequence	15
Lifetime		<=105	
PadN Option	Length	2	

3. CN1X sends Echo Request (Refer to 5.5.1)

IPv6 Header	Source Address	CN1X (Link1X, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Request (tunneled) (*2) (Refer to 5.5.3)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
IPv6 Header	Source Address	CN1X (Link1X, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	129

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
	PadN Option	Length
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)		
	Destination Address	MN1Y (Link1Y, global)		
Type 2 Routing Header	Length	2		
	Type	2		
	Segment left	1		
	Home Address	MN0 (Link0, global)		
	Security Parameters Index	SA2_SPI		
Encapsulating Security Payload	Security Parameters Index	SA2_SPI		
	Mobility Header	MH Type	6	
		Status	0 or 1	
		K Flag	0	
		Sequence	16	
		Lifetime	<=105	
		Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)		
	Destination Address	MN1Y (Link1Y, global)		
Type 2 Routing Header	Length	2		
	Type	2		
	Segment left	1		
	Home Address	MN0 (Link0, global)		
	Security Parameters Index	SA2_SPI		
Encapsulating Security Payload	Security Parameters Index	SA2_SPI		
	Mobility Header	MH Type	6	
		Status	0 or 1	
		K Flag	0	
		Sequence	16	
		Lifetime	<=105	
		PadN Option	Length	2

7. CN1Y sends Echo Request (Refer to 5.5.1)

IPv6 Header	Source Address	CN1Y (LinkY, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

8. MN1Y receives Echo Request (tunneled) (*4) (Refer to 5.5.3)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
IPv6 Header	Source Address	CN1Y (LinkY, global)



	Destination Address	MNO (Link0, global)
ICMPv6 Header	Type	129

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives Echo Request (tunneled)
- (*3) PASS: MN1Y receives BA w/ RH
- (*4) PASS: MN1Y receives Echo Request (tunneled)

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.4.2



6.6.2 Tunneling Intercepted Packets - error handling

6.6.2.1 Real Home Link

6.6.2.1.1 HA_5_1_2 - Echo Request from CN to MN (link-local)

[PURPOSE]

HA_5_1_2 - Tunneling Intercepted Packets - error handling (Echo Request from CN to MN (link-local))

[CATEGORY]

ROUTER : ADVANCED FUNCTION (REAL HOME LINK)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

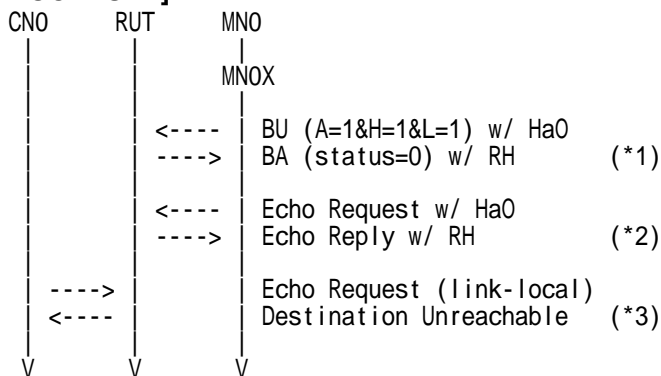
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MNOX sends BU w/ Ha0 (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1 SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	1
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

2. MNOX receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	129

5. CNO sends Echo Request (Refer to 5.5.1)

IPv6 Header	Hoplimit	64
	Source Address	CNO (Link0, link-local)
	Destination Address	MNO (Link0, link-local)
ICMPv6 Header	Type	128

6. CNO receives Destination Unreachable (*3) (Refer to 5.16.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CNO (Link0, link-local)
ICMPv6 Header	Type	1
	Code	3
	Payload Data	64
	IPv6 Header	
	Hoplimit	
	Echo Request	

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	CNO (Link0, link-local)
ICMPv6 Header	Type	1
	Code	3
	Payload Data	IPv6 Header



	Hoplimit Echo Request	63
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[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives Echo Reply w/ RH
- (*3) PASS: CN0 receives Destination Unreachable

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.4.2

6.6.2.1.2 HA_5_1_3 - Relay ICMP error while using bi-directional tunnel

[PURPOSE]

HA_5_1_3 - Relay ICMP error while using bi-directional tunnel

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

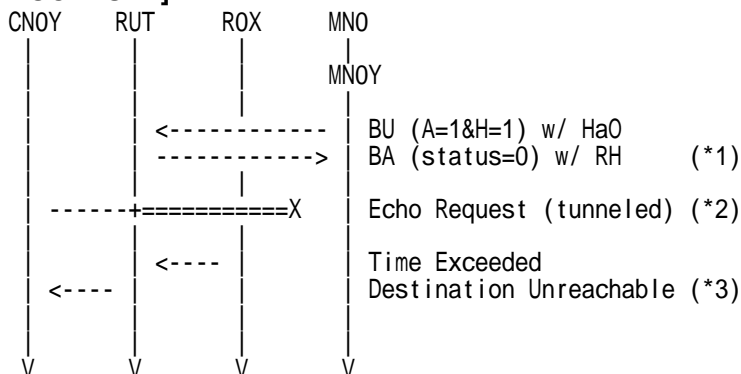
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0Y (Link0Y, global)

2. MN0Y receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15



	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. CN0Y sends Echo Request (Refer to 5.5.1)

IPv6 Header	Source Address	CN0Y (Link0Y, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. RUT sends Echo Request to MN0Y (tunneled) (*2) (Refer to 5.5.3)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
IPv6 Header	Source Address	CN0Y (Link0Y, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

5. R0X sends Time Exceeded (Refer to 5.17.1)

IPv6 Header	Source Address	R0X (LinkX, global)
	Destination Address	RUT (Link0, global)
ICMPv6 Header	Type	3
	Code	0
	Payload Data	
	IPv6 Header IPv6 Header Echo Request	

6. CN0Y receives Destination Unreachable (*3) (Refer to 5.16.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN0Y (Link0Y, global)
ICMPv6 Header	Type	1
	Code	3
	Payload Data	
	IPv6 Header IPv6 Header Echo Request	

[JUDGMENT]

(*1) PASS: MN0Y receives BA w/ RH

(*2) PASS: RUT sends Echo Request to MN0Y(tunneled)

(*3) PASS: CN0Y receives Destination Unreachable

[REFERENCES]

RFC 3775 - Mobility Support in IPv6

See Section 9.3.4

RFC 2473 - Generic Packet Tunneling in IPv6

See Section 8.2

6.6.2.2 Virtual Home Link

6.6.2.2.1 HA_5_1_7 - Relay ICMP error while using bi-directional tunnel

[PURPOSE]

HA_5_1_7 - Relay ICMP error while using bi-directional tunnel

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

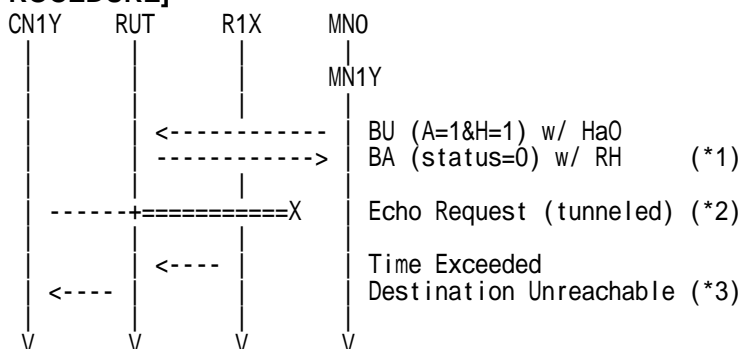
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1Y (Link1Y, global)

2. MN1Y receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6

	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. CN1Y sends Echo Request (Refer to 5.5.1)

IPv6 Header	Source Address	CN1Y (Link1Y, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. RUT sends Echo Request to MN1Y (tunneled) (*2) (Refer to 5.5.3)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
IPv6 Header	Source Address	CN1Y (Link1Y, global)
	Destination Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

5. R1X sends Time Exceeded (Refer to 5.17.1)

IPv6 Header	Source Address	R1X (Link1X, global)
	Destination Address	RUT (Link0, global)
ICMPv6 Header	Type	3
	Code	0
	Payload Data	
	IPv6 Header	
	Echo Request	

6. CN1Y receives Destination Unreachable (*3) (Refer to 5.16.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	CN1Y (Link1Y, global)
ICMPv6 Header	Type	1
	Code	3
	Payload Data	
	IPv6 Header	
	Echo Request	

IPv6 Header	Source Address	RUT (Link1, global)
	Destination Address	CN1Y (Link1Y, global)
ICMPv6 Header	Type	1
	Code	3
	Payload Data	
	IPv6 Header	
	Echo Request	

[JUDGMENT]

(*1) PASS: MN1Y receives BA w/ RH

(*2) PASS: RUT sends Echo Request to MN1Y (tunneled)

(*3) PASS: CN1Y receives Destination Unreachable

[REFERENCES]

RFC 3775 - Mobility Support in IPv6

See Section 9.3.4

RFC 2473 - Generic Packet Tunneling in IPv6

See Section 8.2

6.7 Handling Reverse Tunneled Packets

6.7.1 Valid Reverse Tunneling

6.7.1.1 Real Home Link

6.7.1.1.1 HA_6_1_1 - Reverse tunneling

[PURPOSE]

HA_6_1_1 - Reverse tunneling

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

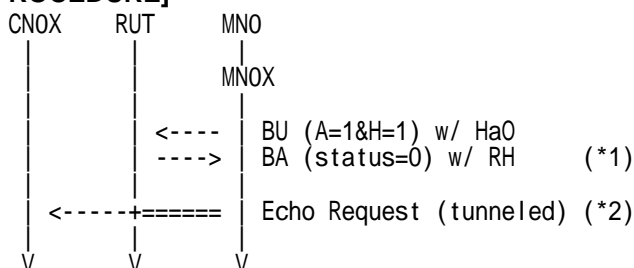
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0,global)
Destination Option Header	Home Address	MN0 (Link0,global)
Encapsulating Security Payload	Security Parameters Index	SA1 SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)



Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends Echo Request (tunneled) (Refer to 5.5.3)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN0X (Link0X, global)
ICMPv6 Header	Type	128

4. CN0X receives Echo Request (*2) (Refer to 5.5.1)

IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN0X (Link0X, global)
ICMPv6 Header	Type	128

[JUDGMENT]

(* 1) PASS: MN0X receives BA w/ RH

(* 2) PASS: CN0X receives Echo Request

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.5

6.7.1.1.2 HA_6_1_2 - Update tunnel end point

[PURPOSE]

HA_6_1_2 - Reverse tunneling, Update tunnel end point

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

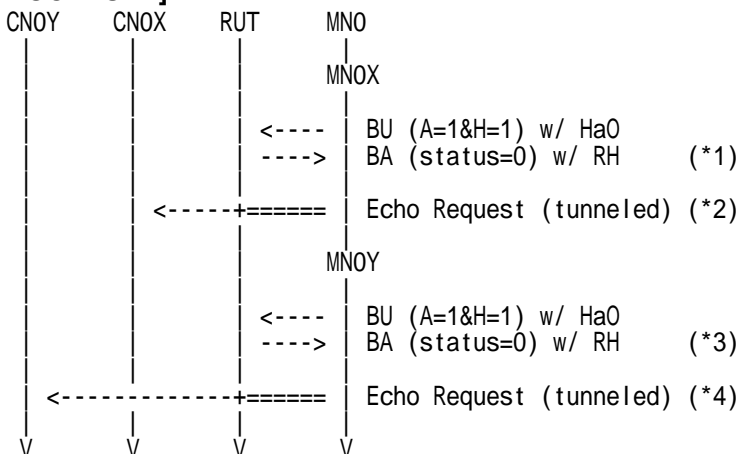
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI



Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request (tunneled) (Refer to 5.5.3)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	CNOX (Link0X, global)
ICMPv6 Header	Type	128

4. CNOX receives Echo Request (*2) (Refer to 5.5.1)

IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	CNOX (Link0X, global)
ICMPv6 Header	Type	128

5. MN0Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
	PadN Option	Length
Alternate CoA Option	Address	MN0Y (Link0Y, global)

6. MN0Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN0Y (Link0Y, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MNO (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
Mobility Header	MH Type	6	
	Status	0 or 1	
	K Flag	0	
	Sequence	16	
	Lifetime	<=105	
	Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN0Y (Link0Y, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MNO (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
Mobility Header	MH Type	6	
	Status	0 or 1	
	K Flag	0	
	Sequence	16	
	Lifetime	<=105	
	PadN Option	Length	2

7. MN0Y sends Echo Request (tunneled) (Refer to 5.5.3)

IPv6 Header	Source Address	MN0Y (Link0Y, global)
	Destination Address	RUT (Link0, global)
IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	CNOY (Link0Y, global)
ICMPv6 Header	Type	128

8. CNOY receives Echo Request (*4) (Refer to 5.5.1)

IPv6 Header	Source Address	MNO (Link0, global)
-------------	----------------	---------------------



	Destination Address	CN0Y (Link0Y, global)
ICMPv6 Header	Type	128

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: CN0X receives Echo Request
- (*3) PASS: MN0Y receives BA w/ RH
- (*4) PASS: CN0Y receives Echo Request

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.4.5

6.7.1.2 Virtual Home Link

6.7.1.2.1 HA_6_1_3 - Reverse tunneling

[PURPOSE]

HA_6_1_3 - Reverse tunneling

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

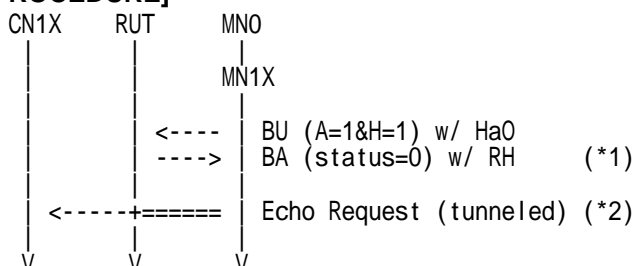
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105



IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN1X sends Echo Request (tunneled) (Refer to 5.5.3)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN1X (Link1X, global)
ICMPv6 Header	Type	128

4. CN1X receives Echo Request (*2) (Refer to 5.5.1)

IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN1X (Link1X, global)
ICMPv6 Header	Type	128

[JUDGMENT]

(*1) PASS: MN1X receives BA w/ RH

(*2) PASS: CN1X receives Echo Request

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.5

6.7.1.2.2 HA_6_1_4 - Update tunnel end point

[PURPOSE]

HA_6_1_4 - Reverse Tunneling, Update tunnel end point

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

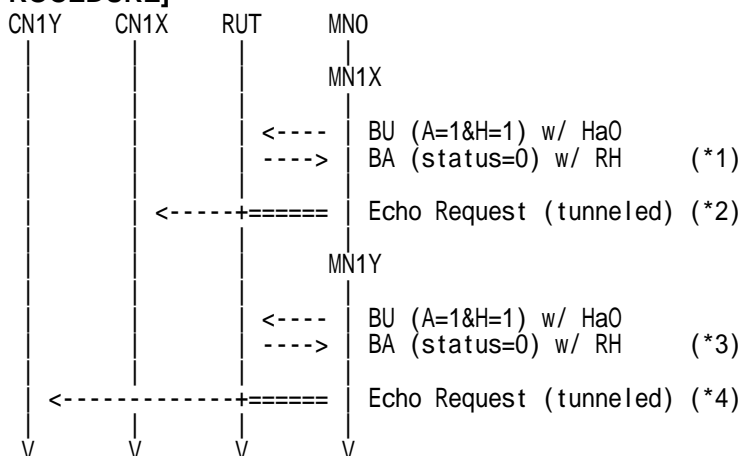
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0 or 1
		K Flag	0
		Sequence	15
Lifetime		<=105	
PadN Option	Length	2	

3. MN1X sends Echo Request (tunneled) (Refer to 5.5.3)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN1X (global)
ICMPv6 Header	Type	128

4. CN1X receives Echo Request (*2) (Refer to 5.5.1)

IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN1X (Link1X, global)
ICMPv6 Header	Type	128

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
	PadN Option	Length
Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1Y (Link1Y, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0 or 1
		K Flag	0
		Sequence	16
		Lifetime	<=105
		Binding Refresh Advice Option	Interval

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1Y (Link1Y, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0 or 1
		K Flag	0
		Sequence	16
		Lifetime	<=105
		PadN Option	Length

7. MN1Y sends Echo Request (tunneled) (Refer to 5.5.3)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN1Y (Link1Y, global)
ICMPv6 Header	Type	128

8. CN1Y receives Echo Request (*4) (Refer to 5.5.1)

IPv6 Header	Source Address	MN0 (Link0, global)
-------------	----------------	---------------------



	Destination Address	CN1Y (Link1Y, global)
ICMPv6 Header	Type	128

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: CN1X receives Echo Request
- (*3) PASS: MN1Y receives BA w/ RH
- (*4) PASS: CN1Y receives Echo Request

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.4.5

6.7.2 Invalid Reverse Tunneling

6.7.2.1 Real Home Link

6.7.2.1.1 HA_6_2_1 – Invalid outer source address

[PURPOSE]

HA_6_2_1 - Invalid Reverse Tunneling (Invalid outer source address)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

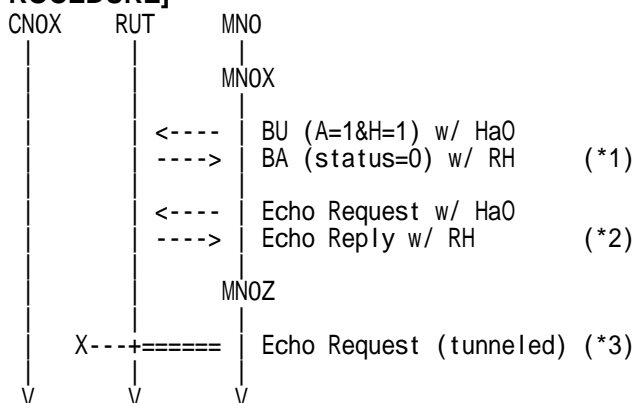
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
PadN Option	Length	105
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
-------------	----------------	---------------------

Type 2 Routing Header	Destination Address	MNOX (Link0X, global)
	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
Type 2 Routing Header	Destination Address	MNOX (Link0X, global)
	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
ICMPv6 Header	Type	128

4. MNOX receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. MNOZ sends Echo Request (tunneled) (Refer to 5.5.3)

IPv6 Header	Source Address	MNOZ (Link0Z, global)
	Destination Address	RUT (Link0, global)
IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	CNOX (Link0X, global)
ICMPv6 Header	Type	128

6. no response (*3)

[JUDGMENT]

(*1) PASS: MNOX receives BA w/ RH

(*2) PASS: MNOX receives Echo Request w/ RH

(*3) PASS: no response

[REFERENCES]



RFC3775 Mobility Support in IPv6
See Section 10.4.5

6.7.2.2 Virtual Home Link

6.7.2.2.1 HA_6_2_2 – Invalid outer source address

[PURPOSE]

HA_6_2_2 - Invalid Reverse Tunneling (Invalid outer source address)

[CATEGORY]

ROUTER : BASIC FUNCTION

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

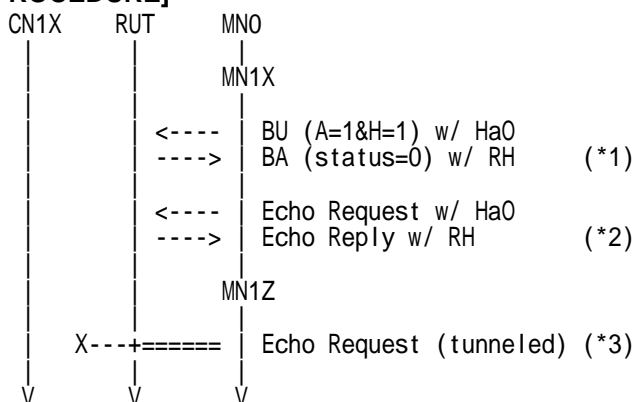
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1

Encapsulating Security Payload	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
	Status	0 or 1	
	K Flag	0	
PadN Option	Sequence	15	
	Lifetime	<=105	
	Length	2	

3. MN1X sends Echo Request w/ HaO (Refer to 5.5.2)

a) Basic

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
ICMPv6 Header	Type	128

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
ICMPv6 Header	Type	128

4. MN1X receives Echo Reply w/ RH (*2) (Refer to 5.6.3)

a) Basic

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

b) Advanced function “Fine-Grain Selectors”

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segments Left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
ICMPv6 Header	Type	129

5. MN1Z sends Echo Request (tunneled) (Refer to 5.5.3)

IPv6 Header	Source Address	MN1Z (Link1Z, global)
	Destination Address	RUT (Link0, global)
IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN1X (Link1X, global)
ICMPv6 Header	Type	128

6. no response (*3)

[JUDGMENT]

(*1) PASS: MN1X receives BA w/ RH

(*2) PASS: MN1X receives Echo Request w/ RH

(*3) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6



See Section 10.4.5

6.8 Protecting Return Routability Packets

6.8.1 Receiving Valid RR Messages

6.8.1.1 Real Home Link

6.8.1.1.1 HA_6_3_1 - Protecting return routability packets (HoTI)

[PURPOSE]

HA_6_3_1 - Protecting return routability packets (HoTI)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(IPSEC FOR HOTI/HOT)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

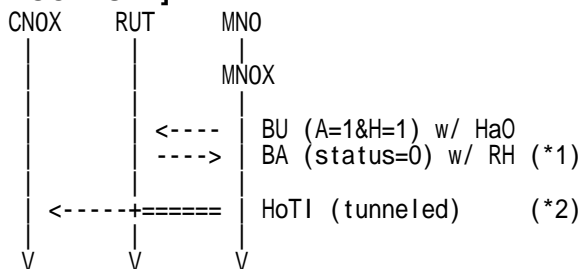
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0,global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1 SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)



Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MN0X sends HoTI (tunneled) (Refer to 5.7.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA3_SPI
IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN0X (Link0X, global)
Mobility Header	MH Type	1

4. CN0X receives HoTI (*2) (Refer to 5.7.2)

IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN0X (Link0X, global)
Mobility Header	MH Type	1

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: CN0X receives HoTI

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.6



6.8.1.1.2 HA_6_3_2 - Update tunnel end point (HoTI)

[PURPOSE]

HA_6_3_2 - Protecting return routability packets, Update tunnel end point (HoTI)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(IPSEC FOR HOTI/HOT)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

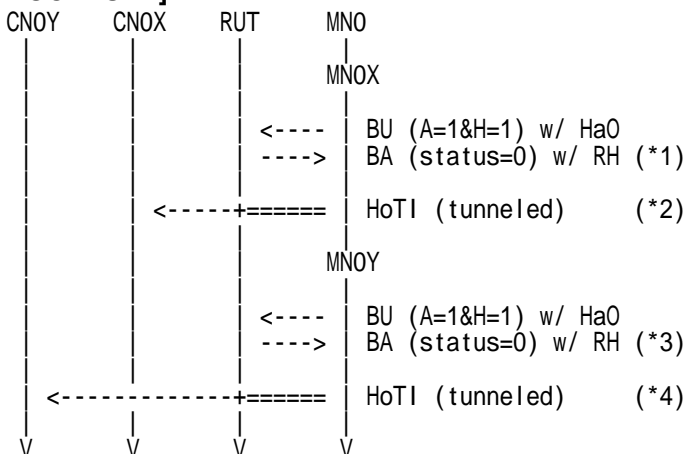
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=105
	Length	2

3. MNOX sends HoTI (tunneled) (Refer to 5.7.1)

IPv6 Header	Source Address	MNOX (Link0, global)
	Destination Address	RUT (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA3_SPI
IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	CNOX (Link0X, global)
Mobility Header	MH Type	1

4. CNOX receives HoTI (*2) (Refer to 5.7.2)

IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	CNOX (Link0X, global)
Mobility Header	MH Type	1

5. MNOY sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
	PadN Option	Length
Alternate CoA Option	Address	MNOY (Link0Y, global)

6. MNOY receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
Binding Refresh Advice Option	Lifetime	<=105
	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOY (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
PadN Option	Lifetime	<=105
	Length	2

7. MNOY sends HoTI (tunneled) (Refer to 5.7.1)

IPv6 Header	Source Address	MNOY (Link0Y, global)
	Destination Address	RUT (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA3_SPI
IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	CNOY (Link0Y, global)
Mobility Header	MH Type	1



8. CN0Y receives HoTI (*4) (Refer to 5.7.2)

IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN0Y (Link0Y, global)
Mobility Header	MH Type	1

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: CN0X receives HoTI

(*3) PASS: MN0Y receives BA w/ RH

(*4) PASS: CN0Y receives HoTI

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.6

6.8.1.1.3 HA_6_3_3 - Protecting return routability packets (HoT)

[PURPOSE]

HA_6_3_3 - Protecting return routability packets (HoT)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(IPSEC FOR HOTI/HOT)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

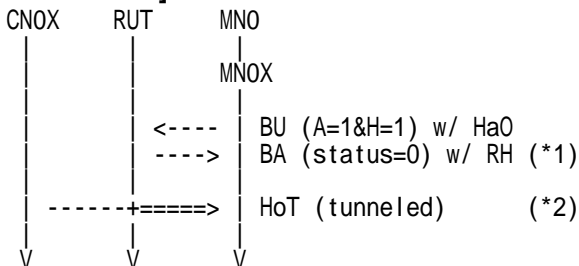
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)



Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. CN0X sends HoT (Refer to 5.8.1)

IPv6 Header	Source Address	CN0X (Link0X, global)
	Destination Address	MNO (Link0, global)
Mobility Header	MH Type	3

4. MN0X receives HoT (tunneled) (*2) (Refer to 5.8.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Encapsulating Security Payload	Security Parameters Index	SA4_SPI
IPv6 Header	Source Address	CN0X (Link0X, global)
	Destination Address	MNO (Link0, global)
Mobility Header	MH Type	3

[JUDGMENT]

(*1) PASS: MN0X receives BA w/ RH

(*2) PASS: MN0X receives HoT

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.6

6.8.1.1.4 HA_6_3_4 - Update tunnel end point (HoT)

[PURPOSE]

HA_6_3_4 - Protecting return routability packets, Update tunnel end point (HoT)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(IPSEC FOR HOTI/HOT)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

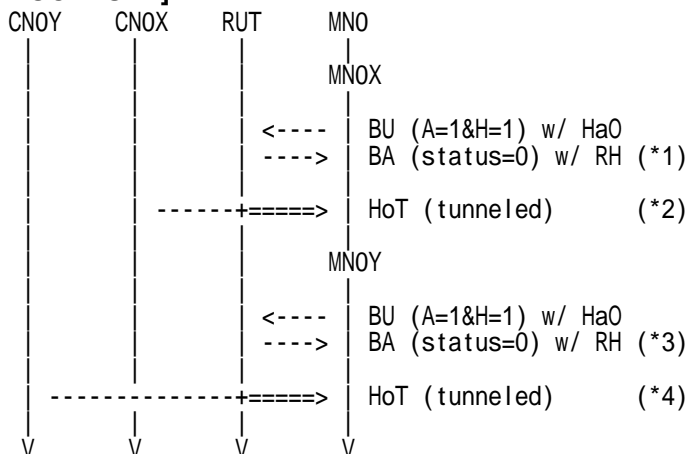
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=105
	Length	2

3. CN0X sends HoT (Refer to 5.8.1)

IPv6 Header	Source Address	CN0X (Link0X, global)
	Destination Address	MNO (Link0, global)
Mobility Header	MH Type	3

4. MN0X receives HoT (tunneled) (*2) (Refer to 5.8.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Encapsulating Security Payload	Security Parameters Index	SA4_SPI
IPv6 Header	Source Address	CN0X (Link0X, global)
	Destination Address	MNO (Link0, global)
Mobility Header	MH Type	3

5. MN0Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0Y (Link0Y, global)	
	Destination Address	RUT (Link0, global)	
Destination Option Header	Home Address	MNO (Link0, global)	
Encapsulating Security Payload	Security Parameters Index	SA1_SPI	
Mobility Header	MH Type	5	
	Sequence Number	15	
	A Flag	1	
	H Flag	1	
	L Flag	0	
	K Flag	0	
	Lifetime	105	
	PadN Option	Length	0
	Alternate CoA Option	Address	MN0Y (Link0Y, global)

6. MN0Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
Binding Refresh Advice Option	Lifetime	<=105
	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=105
	Length	2

7. CN0Y sends HoT (Refer to 5.8.1)

IPv6 Header	Source Address	CN0Y (Link0Y, global)
	Destination Address	MNO (Link0, global)
Mobility Header	MH Type	3

8. MN0Y receives HoT (tunneled) (*4) (Refer to 5.8.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0Y (Link0Y, global)



Encapsulating Security Payload	Security Parameters Index	SA4, SPI
IPv6 Header	Source Address	CN0Y (Link0Y, global)
	Destination Address	MN0 (Link0, global)
Mobility Header	MH Type	3

[JUDGMENT]

- (*1) PASS: MN0X receives BA w/ RH
- (*2) PASS: MN0X receives HoT
- (*3) PASS: MN0Y receives BA w/ RH
- (*4) PASS: MN0Y receives HoT

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.4.6

6.8.1.2 Virtual Home Link

6.8.1.2.1 HA_6_3_5 - Protecting return routability packets (HoTI)

[PURPOSE]

HA_6_3_5 - Protecting return routability packets (HoTI)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(IPSEC FOR HOTI/HOT)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

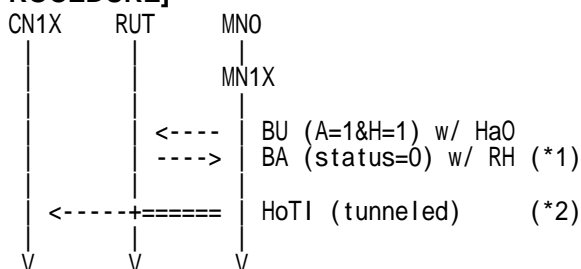
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105



IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=105
	Length	2

3. MN1X sends HoTI (tunneled) (Refer to 5.7.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA3_SPI
	Source Address	MN0 (Link0, global)
IPv6 Header	Destination Address	CN1X (Link1X, global)
	MH Type	1

4. CN1X receives HoTI (*2) (Refer to 5.7.2)

IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN1X (Link1X, global)
Mobility Header	MH Type	1

[JUDGMENT]

(*1) PASS: MN1X receives BA w/ RH

(*2) PASS: CN1X receives HoTI

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.6

6.8.1.2.2 HA_6_3_6 - Update tunnel end point (HoTI)

[PURPOSE]

HA_6_3_6 - Protecting return routability packets, Update tunnel end point (HoTI)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(IPSEC FOR HOTI/HOT)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

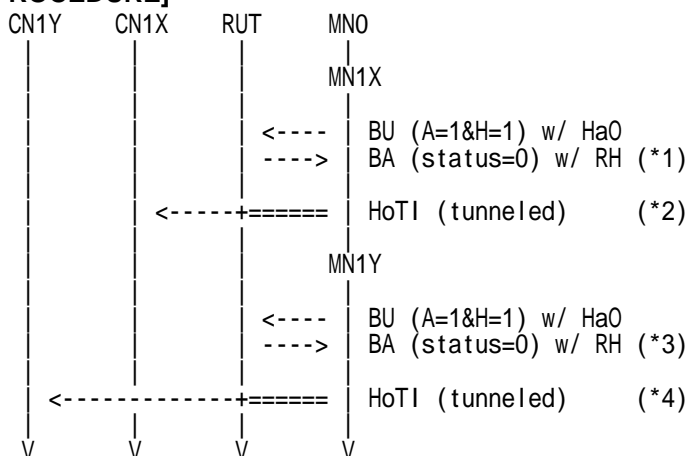
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=105
	Length	2

3. MN1X sends HoTI (tunneled) (Refer to 5.7.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA3_SPI
IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN1X (Link1X, global)
Mobility Header	MH Type	1

4. CN1X receives HoTI (*2) (Refer to 5.7.2)

IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN1X (Link1X, global)
Mobility Header	MH Type	1

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	16
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
	Length	0
PadN Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
Binding Refresh Advice Option	Lifetime	<=105
	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	16
PadN Option	Lifetime	<=105
	Length	2

7. MN1Y sends HoTI (tunneled) (Refer to 5.7.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)
	Destination Address	RUT (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA3_SPI
IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN1Y (Link1Y, global)
Mobility Header	MH Type	1



8. CN1Y receives HoTI (*4) (Refer to 5.7.2)

IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN1Y (Link1Y, global)
Mobility Header	MH Type	1

[JUDGMENT]

(*1) PASS: MN1X receives BA w/ RH

(*2) PASS: CN1X receives HoTI

(*3) PASS: MN1Y receives BA w/ RH

(*4) PASS: CN1Y receives HoTI

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.6

6.8.1.2.3 HA_6_3_7 - Protecting return routability packets (HoT)

[PURPOSE]

HA_6_3_7 - Protecting return routability packets (HoT)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(IPSEC FOR HOTI/HOT)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

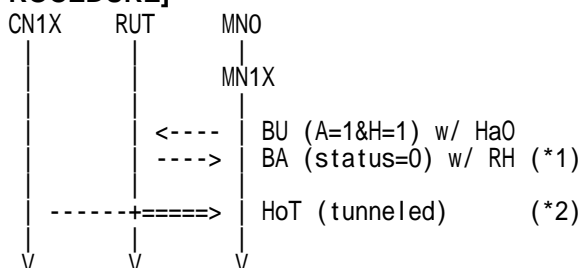
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0 or 1
		K Flag	0
		Sequence	15
		Lifetime	<=105
Interval		<=105	

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)



Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. CN1X sends HoT (Refer to 5.8.1)

IPv6 Header	Source Address	CN1X (Link1X, global)
	Destination Address	MN0 (Link0, global)
Mobility Header	MH Type	3

4. MN1X receives HoT (tunneled) (*2) (Refer to 5.8.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Encapsulating Security Payload	Security Parameters Index	SA4_SPI
IPv6 Header	Source Address	CN1X (Link1X, global)
	Destination Address	MN0 (Link0, global)
Mobility Header	MH Type	3

[JUDGMENT]

(*1) PASS: MN1X receives BA w/ RH

(*2) PASS: MN1X receives HoT

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.6



6.8.1.2.4 HA_6_3_8 - Update tunnel end point (HoT)

[PURPOSE]

HA_6_3_8 - Protecting return routability packets, Update tunnel end point (HoT)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(IPSEC FOR HOTI/HOT)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

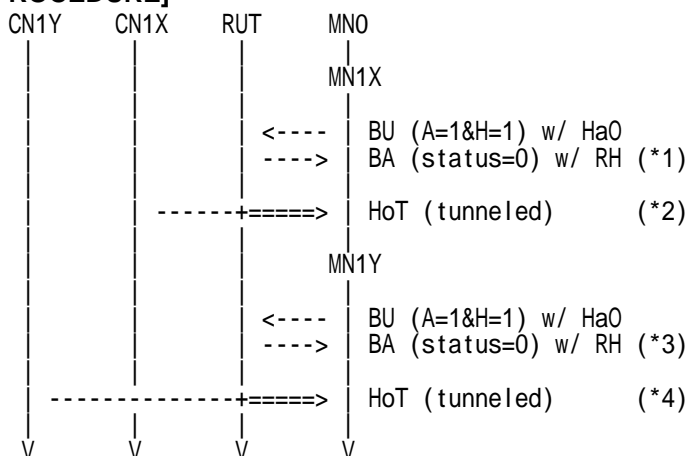
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI

Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=105
	Length	2

3. CN1X sends HoT (Refer to 5.8.1)

IPv6 Header	Source Address	CN1X (Link1X, global)
	Destination Address	MN0 (Link0, global)
Mobility Header	MH Type	3

4. MN1X receives HoT (tunneled) (*2) (Refer to 5.8.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Encapsulating Security Payload	Security Parameters Index	SA4_SPI
IPv6 Header	Source Address	CN1X (Link1X, global)
	Destination Address	MN0 (Link0, global)
Mobility Header	MH Type	3

5. MN1Y sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1Y (Link1Y, global)	
	Destination Address	RUT (Link0, global)	
Destination Option Header	Home Address	MN0 (Link0, global)	
Encapsulating Security Payload	Security Parameters Index	SA1_SPI	
Mobility Header	MH Type	5	
	Sequence Number	15	
	A Flag	1	
	H Flag	1	
	L Flag	0	
	K Flag	0	
	Lifetime	105	
	PadN Option	Length	0
	Alternate CoA Option	Address	MN1Y (Link1Y, global)

6. MN1Y receives BA w/ RH (*3) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
Binding Refresh Advice Option	Lifetime	<=105
	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=105
	Length	2

7. CN1Y sends HoT (Refer to 5.8.1)

IPv6 Header	Source Address	CN1Y (Link1Y, global)
	Destination Address	MN0 (Link0, global)
Mobility Header	MH Type	3

8. MN1Y receives HoT (tunneled) (*4) (Refer to 5.8.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1Y (Link1Y, global)



Encapsulating Security Payload	Security Parameters Index	SA4 SPI
IPv6 Header	Source Address	CN1Y (Link1Y, global)
	Destination Address	MN0 (Link0, global)
Mobility Header	MH Type	3

[JUDGMENT]

- (*1) PASS: MN1X receives BA w/ RH
- (*2) PASS: MN1X receives HoT
- (*3) PASS: MN1Y receives BA w/ RH
- (*4) PASS: MN1Y receives HoT

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.4.6

6.8.2 Receiving Invalid RR Messages

6.8.2.1 Real Home Link

6.8.2.1.1 HA_6_3_9 - Receiving invalid HoTI (unauthorization)

[PURPOSE]

HA_6_3_9 - Receiving invalid HoTI (unauthorization)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(IPSEC FOR HOTI/HOT)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

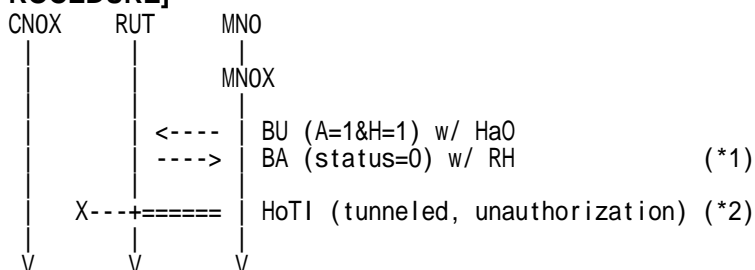
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

2. MN0X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1



	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

3. MNOX sends HoTI (tunneled) (Refer to 5.7.3)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
IPv6 Header	Source Address	MNO (Link0, global)
	Destination Address	CNOX (Link0X, global)
Mobility Header	MH Type	1

4. no response (*2)

[JUDGMENT]

(*1) PASS: MNOX receives BA w/ RH

(*2) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.5

6.8.2.2 Virtual Home Link

6.8.2.2.1 HA_6_3_10 - Receiving invalid HoTI (unauthorization)

[PURPOSE]

HA_6_3_10 - Receiving invalid HoTI (unauthorization)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(IPSEC FOR HOTI/HOT)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.3 Common Topology-3

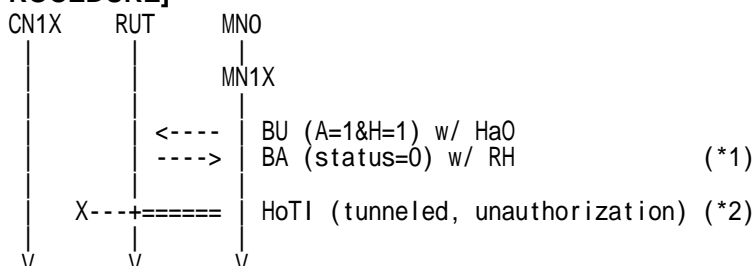
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. MN1X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
	MH Type	5
Mobility Header	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
	PadN Option	Length
Alternate CoA Option	Address	MN1X (Link1X, global)

2. MN1X receives BA w/ RH (*1) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
Mobility Header	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
	Binding Refresh Advice Option	Interval



IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA2_SPI
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
PadN Option	Lifetime	<=105
	Length	2

3. MN1X sends HoTI (tunneled) (Refer to 5.7.3)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
IPv6 Header	Source Address	MN0 (Link0, global)
	Destination Address	CN1X (Link1X, global)
Mobility Header	MH Type	1

4. no response (*2)

[JUDGMENT]

(*1) PASS: MN1X receives BA w/ RH

(*2) PASS: no response

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.4.5

6.9 Dynamic Home Agent Address Discovery

6.9.1 Receiving Home Agent Address Discovery Request

6.9.1.1 Real Home Link

6.9.1.1.1 HA_7_1_1 - Dynamic home agent address discovery

[PURPOSE]

HA_7_1_1 - Dynamic home agent address discovery

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

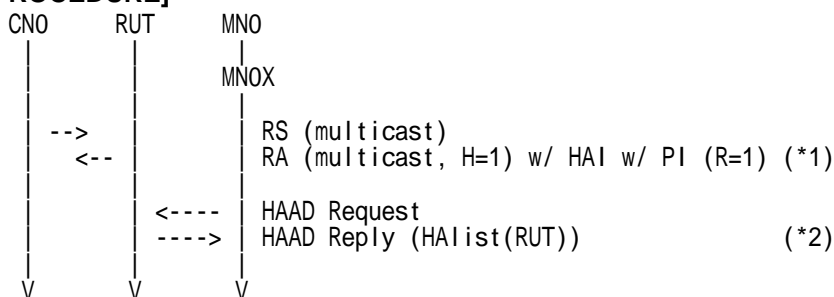
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (If RUT supports Real Home Link.) (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (If RUT supports Real Home Link.) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Type	8
	Home Agent Preference	10
Prefix Information Option	Type	3
	R Flag	1
	Prefix	RUT (Link0, global)



3. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

4. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast (If RUT supports Real Home Link.)

(*2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1

6.9.1.1.2 HA_7_1_3 - Dynamic home agent address discovery (non-zero reserved field)

[PURPOSE]

HA_7_1_3 - Dynamic home agent address discovery (non-zero reserved field)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

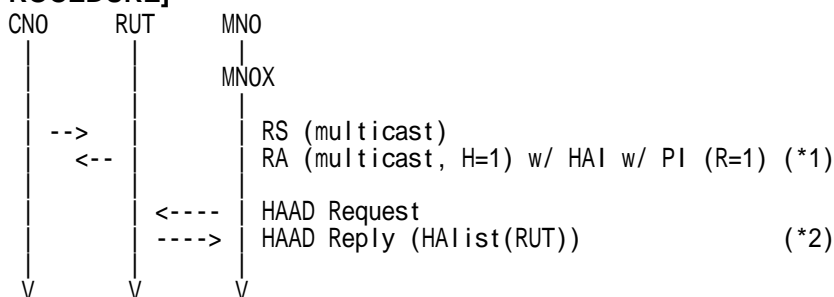
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CN0 sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.2)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Type	8
	Home Agent Preference	10
Prefix Information Option	Type	3
	R Flag	1
	Prefix	RUT (Link0, global)

3. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144
	reserved	1

4. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)



[JUDGMENT]

(*1) PASS: RUT sends RA to multicast (If RUT supports Real Home Link.)

(*2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 6.5



4. MN1X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast (If RUT supports Real Home Link.)

(*2) PASS: MN1X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1



4. MN1X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast (If RUT supports Real Home Link.)

(*2) PASS: MN1X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 6.5

6.9.2 Receiving Router Advertisement Messages

6.9.2.1 Real Home Link

6.9.2.1.1 HA_7_2_1 - receiving RA w/ Home Agent Information Option (preference=0)

[PURPOSE]

HA_7_2_1 - receiving RA w/ Home Agent Information Option (preference=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.4 Common Topology-4

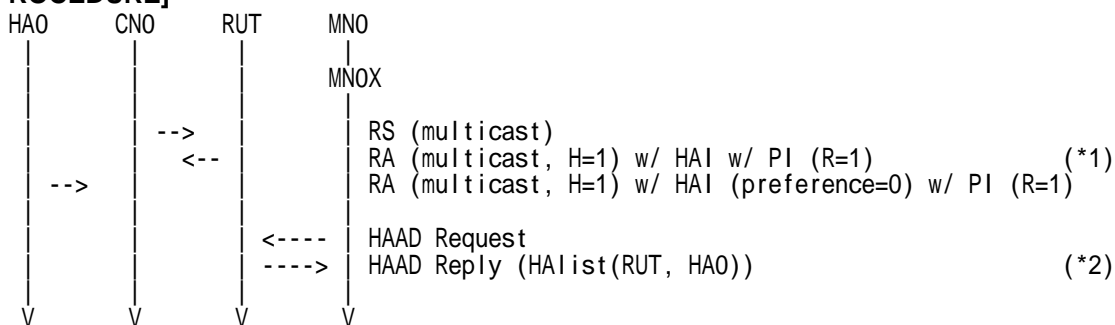
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0:0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Type	8
	Home Agent Preference	10
Prefix Information Option	Type	3
	R Flag	1
	Prefix	RUT (Link0, global)

3. HAO sends RA (Refer to 5.2.1)

RUT (Link0, global)	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)



ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0
	Lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

5. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)
	Address	Ha0 (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast

(*2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1



	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

5. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)
	Address	Ha0 (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast

(*2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1



6.9.2.1.3 HA_7_2_2 - receiving RA w/ Home Agent Information Option (preference=0xffff)

[PURPOSE]

HA_7_2_2 - receiving RA w/ Home Agent Information Option (preference=0xffff)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.4 Common Topology-4

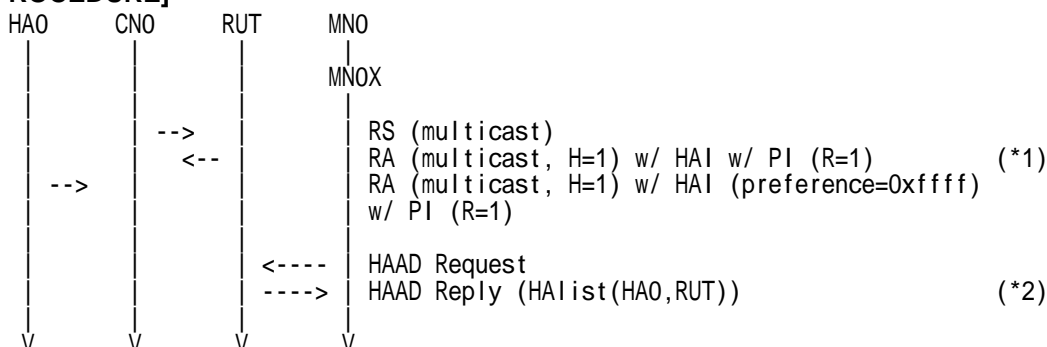
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0:0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
	Home Agent Information Option	Home Agent Preference
Prefix Information Option	Lifetime	1800
	Prefix Length	64



	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

5. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA0 (Link0, global)
	Address	RUT (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast

(*2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1

6.9.2.1.4 HA_7_3_1 - receiving RA w/ Home Agent Information Option (lifetime=0)

[PURPOSE]

HA_7_3_1 - receiving RA w/ Home Agent Information Option (lifetime=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.4 Common Topology-4

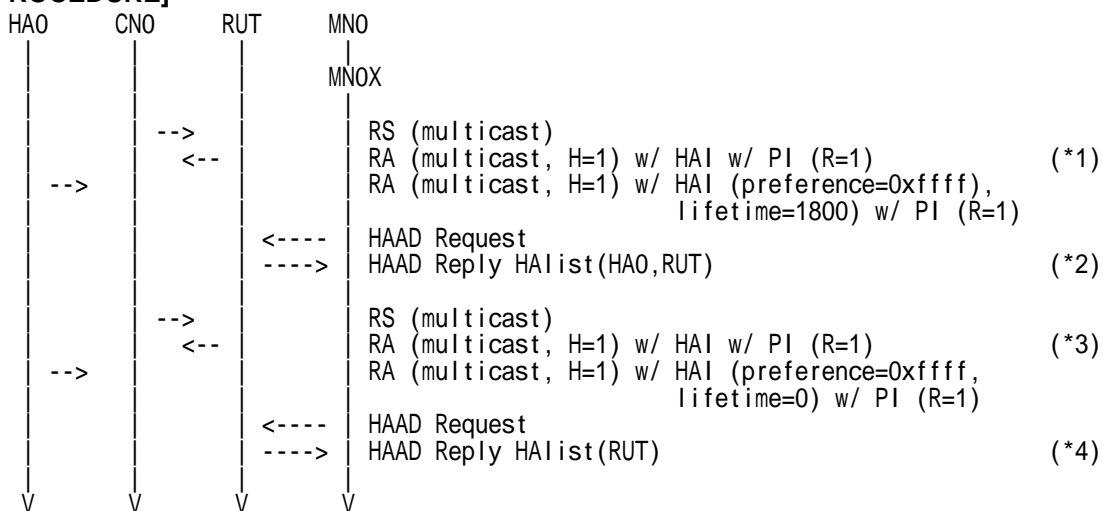
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CN0 sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)

ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0xffff
	Lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

5. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA0 (Link0, global)
	Address	RUT (Link0, global)

6. CN0 sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

7. RUT sends RA (*3) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

8. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0xffff
	Lifetime	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

9. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

10. MN0X receives HAAD Reply (*4) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	address	RUT (Link0, global)

[JUDGMENT]

- (*1) PASS: RUT sends RA to multicast
- (*2) PASS: MN0X receives HAAD Reply
- (*3) PASS: RUT sends RA to multicast
- (*4) PASS: MN0X receives HAAD Reply



[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1

6.9.2.1.5 HA_7_3_2 - receiving RA w/o Home Agent Information Option (lifetime=0)

[PURPOSE]

HA_7_3_2 - receiving RA w/o Home Agent Information Option (lifetime=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.4 Common Topology-4

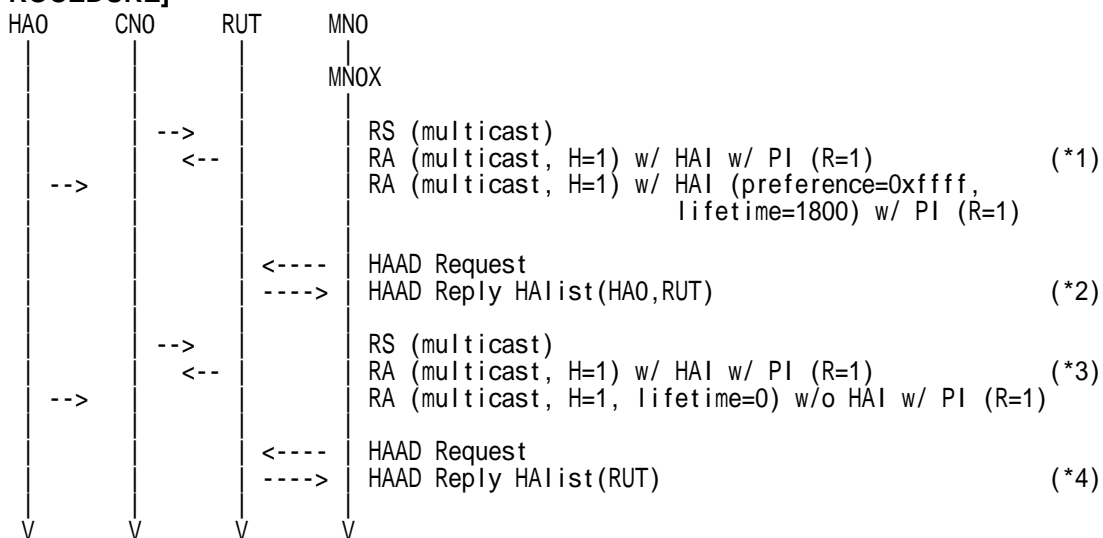
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HAO sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0xffff
	Lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
Mobility Header	Destination Address	(Link0, Home Agents anycast address)
	Type	144

5. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
Mobility Header	Destination Address	MN0X (Link0X, global)
	Type	145
	Address	HA0 (Link0, global)
	Address	RUT (Link0, global)

6. CN0 sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
ICMPv6 Header	Destination Address	(All-routers multicast address)
	Type	133

7. RUT sends RA (*3) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
ICMPv6 Header	Destination Address	(All-nodes multicast address)
	Type	134
Home Agent Information Option	H Flag	1
	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

8. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
ICMPv6 Header	Destination Address	(All-nodes multicast address)
	M Flag	0
Home Agent Information Option	O Flag	0
	H Flag	1
	Lifetime	0
	Reachable time	0
	Retrans timer	0
	Prefix Information Option	Prefix Length
Prefix Information Option	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

9. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
Mobility Header	Destination Address	(Link0, Home Agents anycast address)
	Type	144

10. MN0X receives HAAD Reply (*4) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
Mobility Header	Destination Address	MN0X (Link0X, global)
	Type	145
	Address	RUT (Link0, global)

[JUDGMENT]

- (*1) PASS: RUT sends RA to multicast
- (*2) PASS: MN0X receives HAAD Reply
- (*3) PASS: RUT sends RA to multicast
- (*4) PASS: MN0X receives HAAD Reply



[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1

6.9.2.1.6 HA_7_4_1 - receiving RA (H=0)

[PURPOSE]

HA_7_4_1 - receiving RA (H=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.4 Common Topology-4

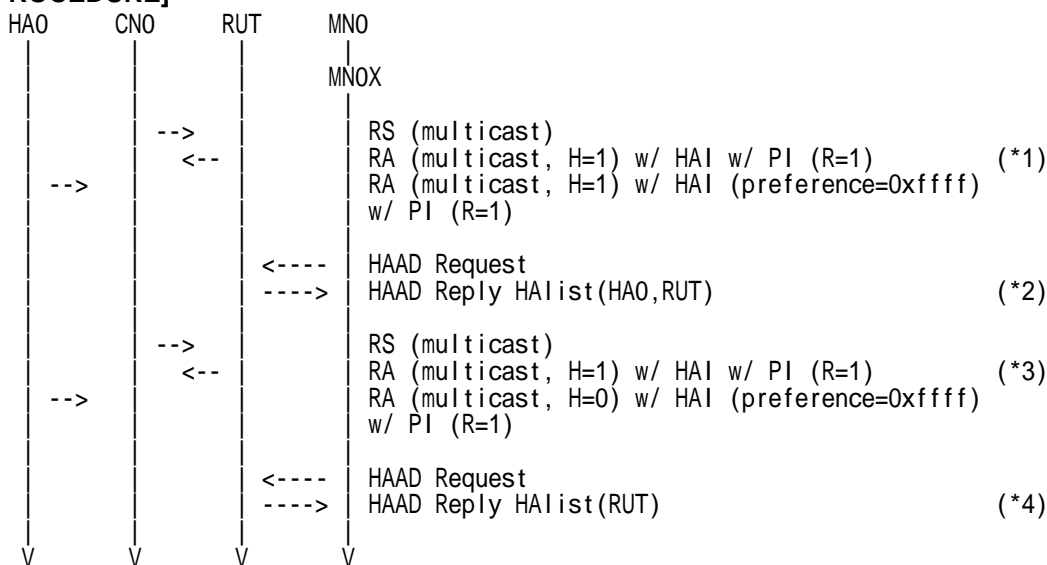
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0xffff
	Lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

5. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA0 (Link0, global)
	Address	RUT (Link0, global)

6. CN0 sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

7. RUT sends RA (*3) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

8. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	0
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0xffff
	Lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

9. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

10. MN0X receives HAAD Reply (*4) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast

(*2) PASS: MN0X receives HAAD Reply



- (*3) PASS: RUT sends RA to multicast
- (*4) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1

6.9.2.1.7 HA_7_4_2 - receiving RA (R=0)

[PURPOSE]

HA_7_4_2 - receiving RA (R=0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.5 Common Topology-5

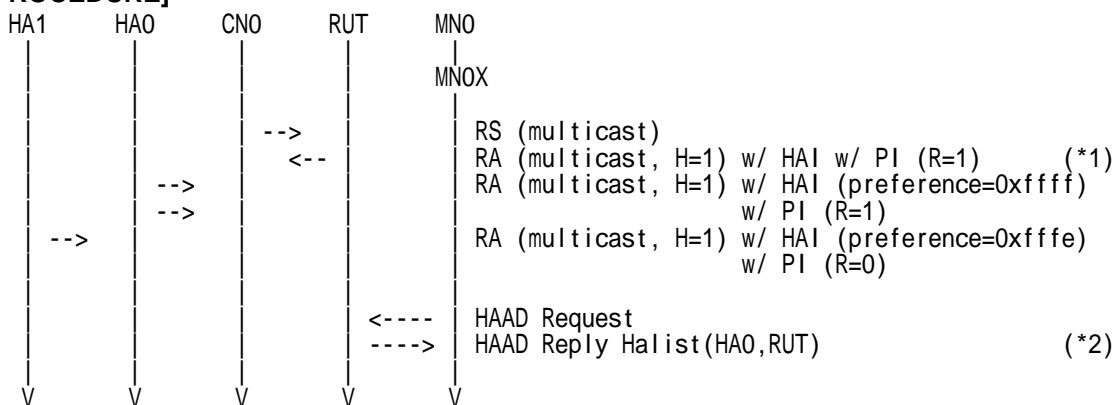
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0



Home Agent Information Option	Home Agent Preference	0xffff
	Lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. HA1 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA1 (Link1, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0xffff
	Lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	0
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA1 (Link1, global)

5. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

6. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA0 (Link0, global)
	Address	RUT (Link0, global)

[JUDGMENT]

- (*1) PASS: RUT sends RA to multicast
- (*2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.5.1



6.9.2.1.8 HA_7_2_10 - Lifetime expired w/ Home Agent Information Option

[PURPOSE]

HA_7_2_10 - Lifetime expired w/ Home Agent Information Option

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.4 Common Topology-4

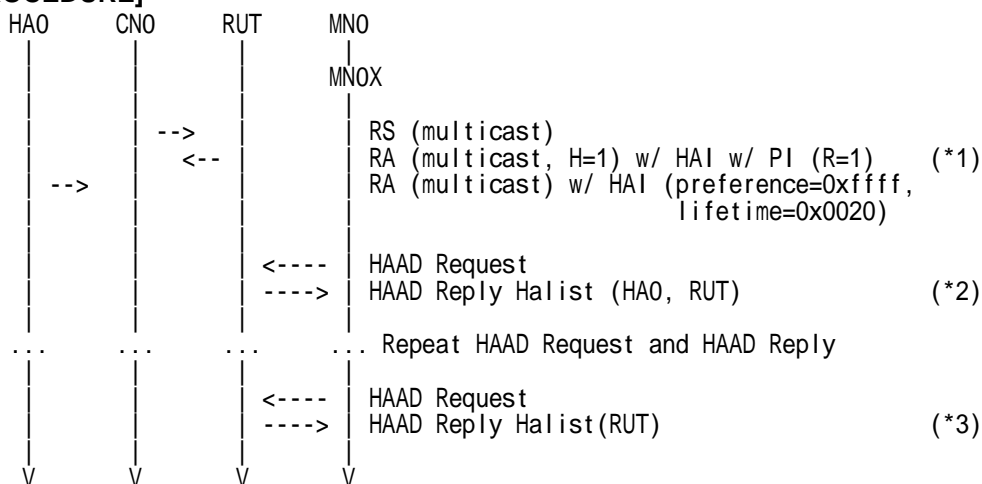
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0:0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HAO sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HAO (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0

	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0xffff
	Lifetime	0x0020
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

5. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA0 (Link0, global)
	Address	RUT (Link0, global)

6. Repeat Step 4 and 5 every second until the lifetime of the home agents list entry expires.

7. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

8. MN0X receives HAAD Reply (*3) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast

(*2) PASS: MN0X receives HAAD Reply

(*3) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1

6.9.2.1.9 HA_7_2_11 - Lifetime expired w/o Home Agent Information Option

[PURPOSE]

HA_7_2_11 - Lifetime expired w/o Home Agent Information Option

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.4 Common Topology-4

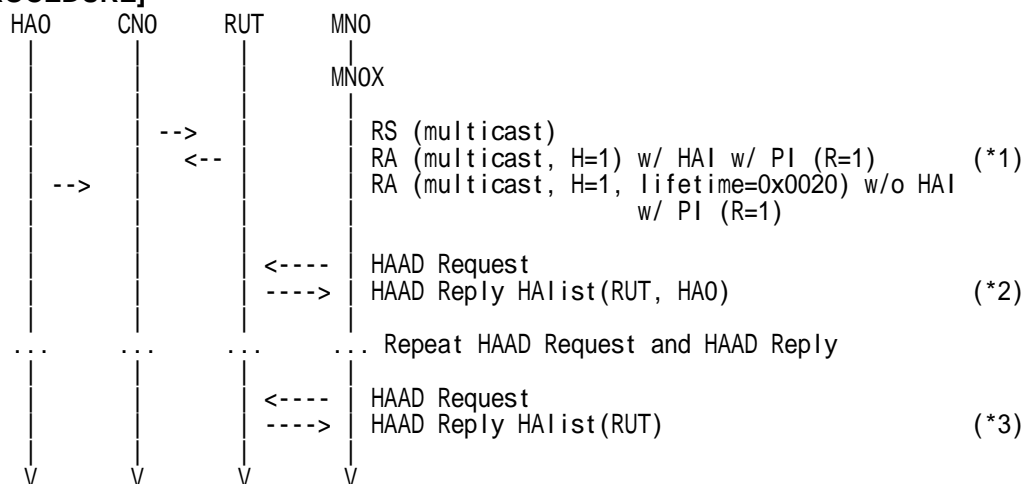
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0:0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HAO sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0



	O Flag	0
	H Flag	1
	Lifetime	0x0020
	Reachable time	0
	Retrans timer	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

5. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)
	Address	HA0 (Link0, global)

6. Repeat Step 4 and 5 every second until the lifetime of the home agents list entry expires.

7. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

8. MN0X receives HAAD Reply (*3) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)

[JUDGMENT]

- (*1) PASS: RUT sends RA to multicast
- (*2) PASS: MN0X receives HAAD Reply
- (*3) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.5.1



6.9.2.1.10 HA_7_2_12 - update Home Agent Preference

[PURPOSE]

HA_7_2_12 - update Home Agent Preference

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.4 Common Topology-4

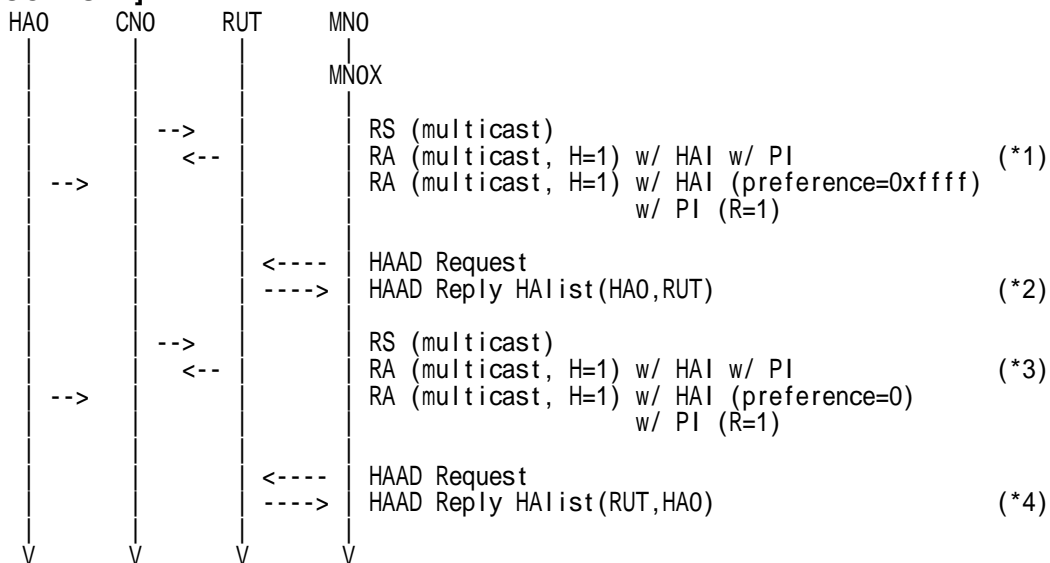
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0xffff
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

5. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA0 (Link0, global)
	Address	RUT (Link0, global)

6. CN0 sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

7. RUT sends RA (*3) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

8. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

9. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

10. MN0X receives HAAD Reply (*4) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)
	Address	HA0 (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast

(*2) PASS: MN0X receives HAAD Reply



- (*3) PASS: RUT sends RA to multicast
- (*4) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1

6.9.2.1.11 HA_7_2_13 - Update Home Agent Lifetime

[PURPOSE]

HA_7_2_13 - Update Home Agent Lifetime

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.4 Common Topology-4

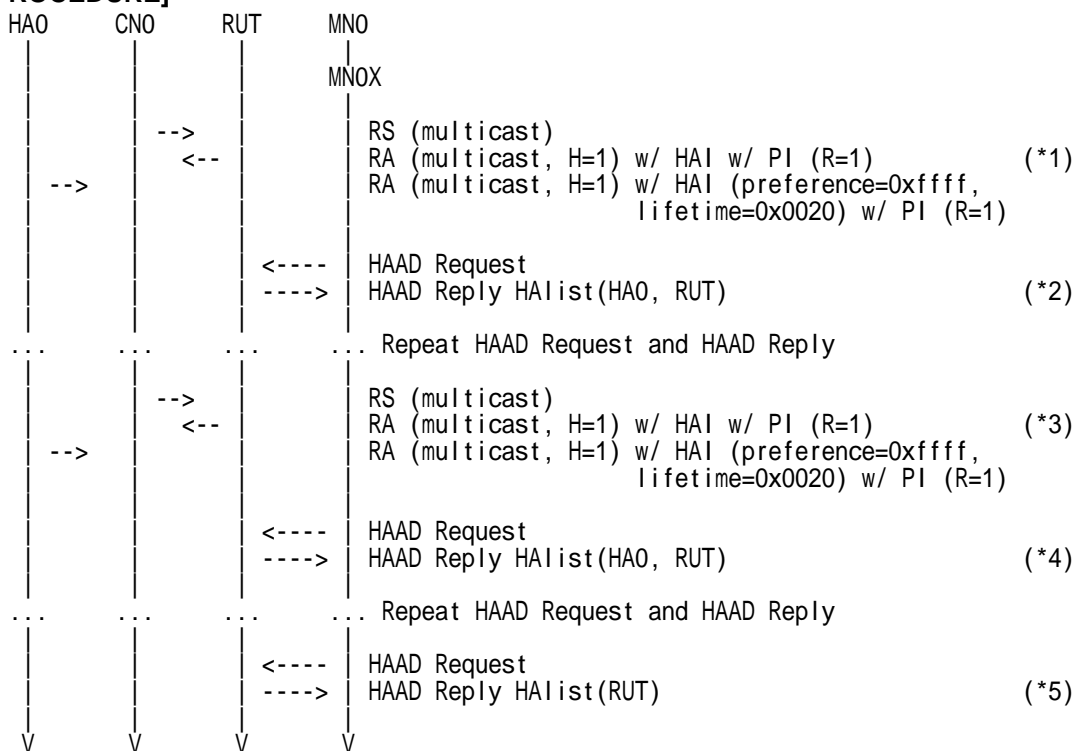
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.2)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
	Home Agent Information Option	Home Agent Preference
Prefix Information Option	lifetime	0x0020
	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

5. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA0 (Link0, global)
	Address	RUT (Link0, global)

6. Repeat Step 4 and 5 every second for 16 seconds.

7. Repeat Step 4 and 5 every second until the lifetime of the home agents list entry expires.

8. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

9. MN0X receives HAAD Reply (*5) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast

(*2) PASS: MN0X receives HAAD Reply

(*3) PASS: RUT sends RA to multicast

(*4) PASS: MN0X receives HAAD Reply

(*5) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1

6.9.2.1.12 HA_7_2_15 - HA has more than one global IP address

[PURPOSE]

HA_7_2_15 - HA has more than one global IP address

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.6 Common Topology-6

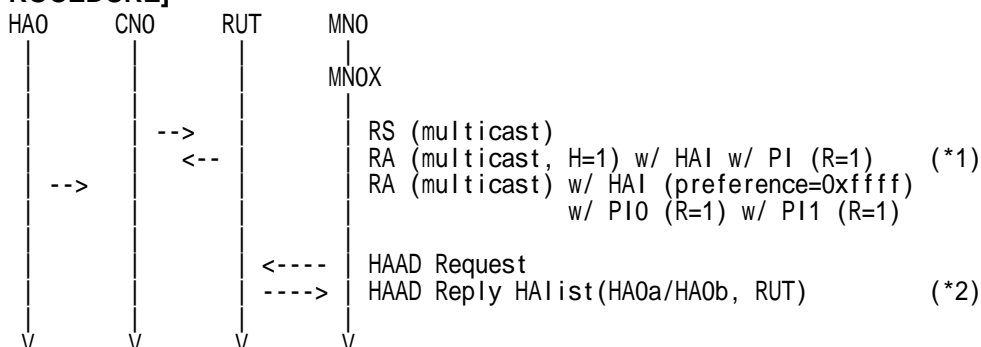
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CN0 sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0:0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)	
	Destination Address	(All-nodes multicast address)	
ICMPv6 Header	M Flag	0	
	O Flag	0	
	H Flag	1	
	Lifetime	1800	
	Reachable time	0	
	Retrans timer	0	
	Home Agent Information Option	Home Agent Preference	0xffff
		lifetime	1800
Prefix Information Option	Prefix Length	64	

	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0(a) (Link0, global)
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0(b) (Link0, global)

4. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

5. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA0(a) (Link0, global)
	Address	HA1(b) (Link0, global)
	Address	RUT (Link0, global)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA1(b) (Link0, global)
	Address	HA0(a) (Link0, global)
	Address	RUT (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast

(*2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1

6.9.2.1.13 HA_7_2_3 - receiving RA messages (preference: RUT > HA0 > HA1)

[PURPOSE]

HA_7_2_3 - receiving RA messages (preference: RUT > HA0 > HA1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.5 Common Topology-5

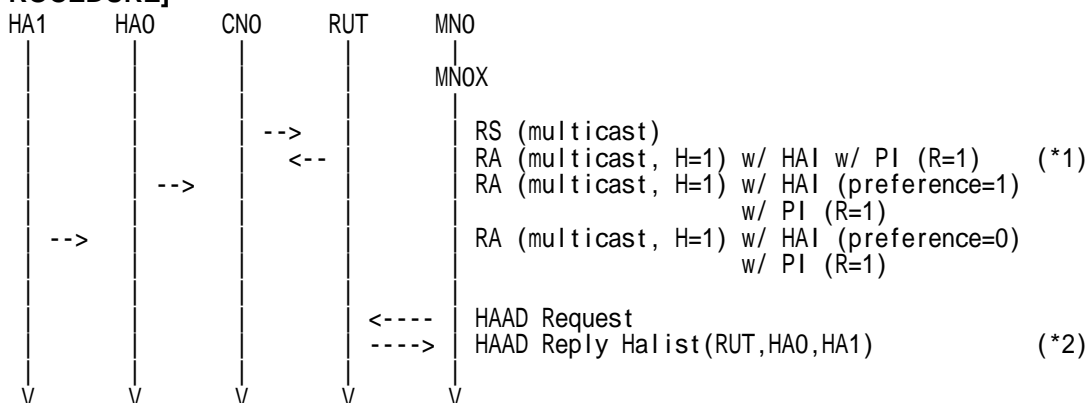
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0



Home Agent Information Option	Home Agent Preference	1
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. HA1 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA1 (Link1, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA1 (Link1, global)

5. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

6. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)
	Address	HA0 (Link0, global)
	Address	HA1 (Link1, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast

(*2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1

6.9.2.1.14 HA_7_2_4 - receiving RA messages (preference: RUT > HA1 > HA0)

[PURPOSE]

HA_7_2_4 - receiving RA messages (preference: RUT > HA1 > HA0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.5 Common Topology-5

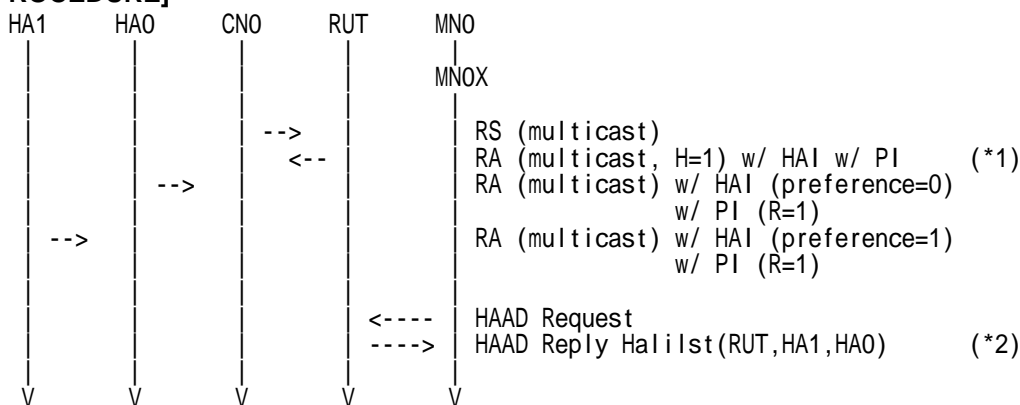
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0



Home Agent Information Option	Home Agent Preference	0
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. HA1 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA1 (Link1, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	1
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA1 (Link1, global)

5. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

6. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	RUT (Link0, global)
	Address	HA1 (Link1, global)
	Address	HA0 (Link0, global)

[JUDGMENT]

- (* 1) PASS: RUT sends RA to multicast
- (* 2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.5.1

6.9.2.1.15 HA_7_2_5 - receiving RA messages (preference: HA0 > RUT > HA1)

[PURPOSE]

HA_7_2_5 - receiving RA messages (preference: HA0 > RUT > HA1)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.5 Common Topology-5

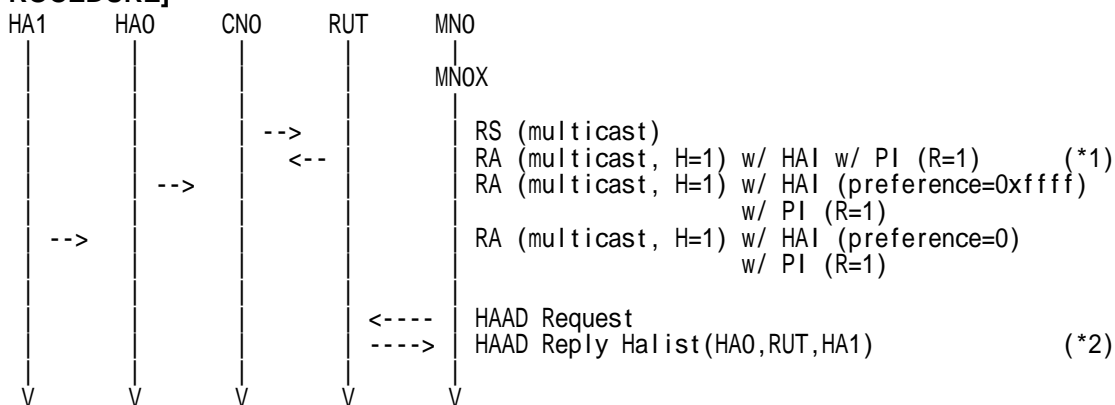
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0



Home Agent Information Option	Home Agent Preference	0xffff
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. HA1 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA1 (Link1, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA1 (Link1, global)

5. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

6. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA0 (Link0, global)
	Address	RUT (Link0, global)
	Address	HA1 (Link1, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast

(*2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1

6.9.2.1.16 HA_7_2_6 - receiving RA messages (preference: HA1 > RUT > HA0)

[PURPOSE]

HA_7_2_6 - receiving RA messages (preference: HA1 > RUT > HA0)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.5 Common Topology-5

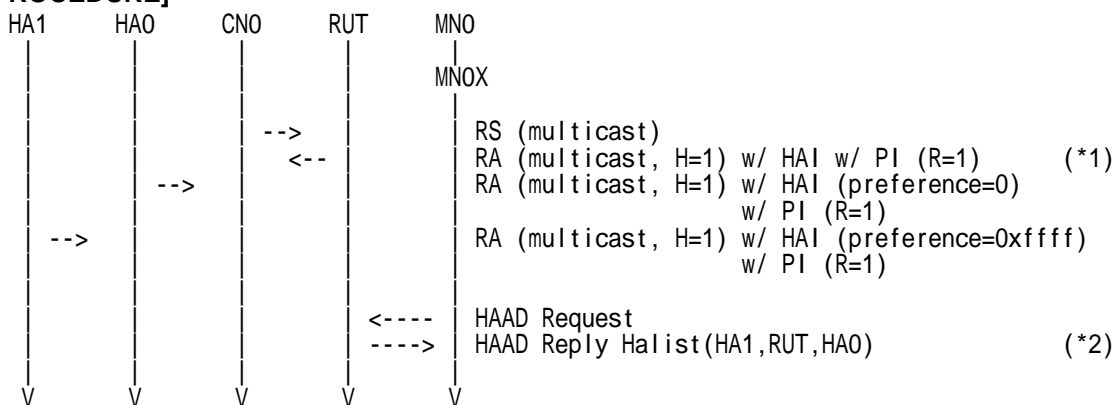
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0

Home Agent Information Option	Home Agent Preference	0
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. HA1 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA1 (Link1, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0xffff
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA1 (Link1, global)

5. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

6. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA1 (Link1, global)
	Address	RUT (Link0, global)
	Address	HA0 (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast

(*2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1



6.9.2.1.17 HA_7_2_7 - receiving RA messages (preference: HA0 > HA1 > RUT)

[PURPOSE]

HA_7_2_7 - receiving RA messages (preference: HA0 > HA1 > RUT)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.5 Common Topology-5

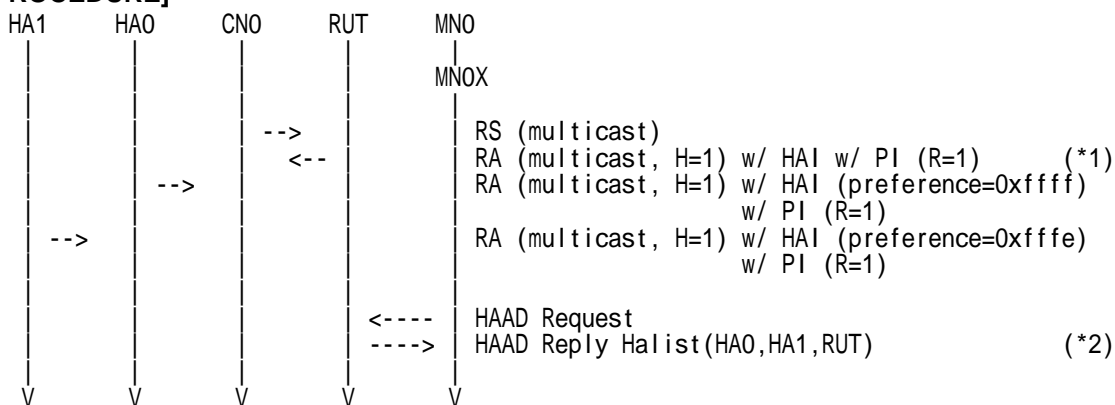
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0

Home Agent Information Option	Home Agent Preference	0xffff
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. HA1 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA1 (Link1, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0xffff
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA1 (Link1, global)

5. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

6. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA0 (Link0, global)
	Address	HA1 (Link1, global)
	Address	RUT (Link0, global)

[JUDGMENT]

- (* 1) PASS: RUT sends RA to multicast
- (* 2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.5.1

Home Agent Information Option	Home Agent Preference	0xffff
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. HA1 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA1 (Link1, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0xffff
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA1 (Link1, global)

5. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

6. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA1 (Link1, global)
	Address	HA0 (Link0, global)
	Address	RUT (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast

(*2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1

6.9.2.1.19 HA_7_2_14 - equal preference (preference: HA0 = HA1 > RUT)

[PURPOSE]

HA_7_2_14 - equal preference (preference: HA0 = HA1 > RUT)

[CATEGORY]

ROUTER : ADVANCED FUNCTION(DHAAD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.5 Common Topology-5

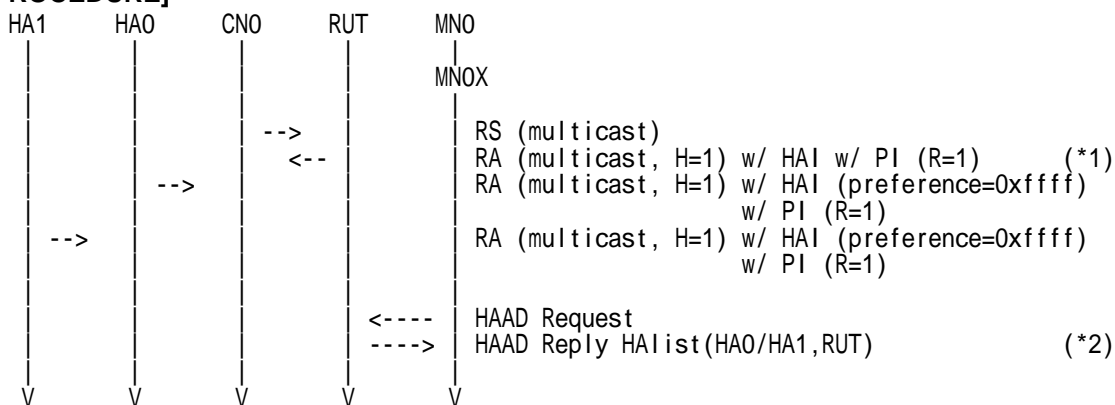
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. HA0 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA0 (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0



Home Agent Information Option	Home Agent Preference	0xffff
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA0 (Link0, global)

4. HA1 sends RA (Refer to 5.2.1)

IPv6 Header	Source Address	HA1 (Link1, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
Home Agent Information Option	Home Agent Preference	0xffff
	lifetime	1800
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HA1 (Link1, global)

5. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

6. MN0X receives HAAD Reply (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA0 (Link0, global)
	Address	HA1 (Link1, global)
	Address	RUT (Link0, global)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	HA1 (Link1, global)
	Address	HA0 (Link0, global)
	Address	RUT (Link0, global)

[JUDGMENT]

- (*1) PASS: RUT sends RA to multicast
- (*2) PASS: MN0X receives HAAD Reply

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.5.1

2. RUT sends RA (*1) (Refer to 5.2.1)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. 78 home agents (HAb2 - HAff) send RA (Refer to 5.2.1)

IPv6 Header	Source Address	HAb2-Haff (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	M Flag	0
	O Flag	0
	H Flag	1
	Lifetime	1800
	Reachable time	0
	Retrans timer	0
	Home Agent Information Option	Home Agent Preference
Prefix Information Option	lifetime	1800
	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	2592000
	Preferred Lifetime	604800
	Prefix	HAb2-Haff (Link0, global)

4. MN0X sends HAAD Request (Refer to 5.12.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	(Link0, Home Agents anycast address)
Mobility Header	Type	144

5. MN0X receives HAAD Reply (contains 77 home agents) (*2) (Refer to 5.13.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	Type	145
	Address	Haff (Link0, global)
	Address	HAfe (Link0, global)
	Address	HAfd (Link0, global)
	...	
	Address	HAb5 (Link0, global)
	Address	HAb4 (Link0, global)
	Address	HAb3 (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast

(*2) PASS: MN0X receives HAAD Reply (contains 77 home agents)

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.5.1

6.10 Mobile Prefix Discovery

6.10.1 Receiving Mobile Prefix Solicitation

6.10.1.1 Real Home Link

6.10.1.1.1 HA_8_1_1 - Receiving valid Mobile Prefix Solicitation

[PURPOSE]

HA_8_1_1 - Receiving valid Mobile Prefix Solicitation

[CATEGORY]

ROUTER : ADVANCED FUNCTION(MPD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

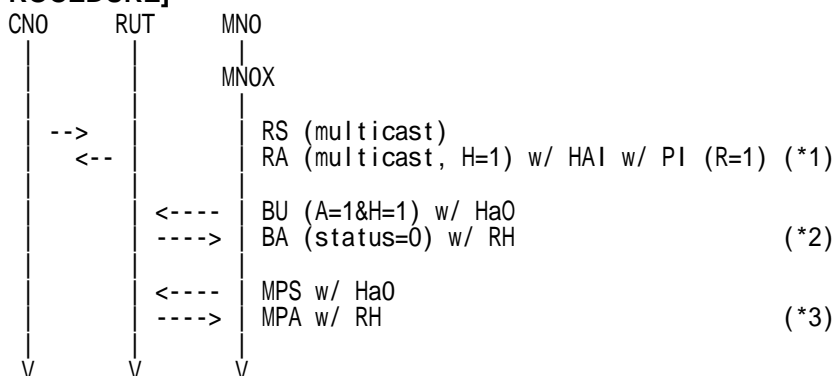
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (If RUT supports Real Home Link.) (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (If RUT supports Real Home Link.) (Refer to 5.2.2)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10



Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. MN0X sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN0X (Link0X, global)

4. MN0X receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

5. MN0X sends MPS w/ HaO (Refer to 5.14.1)

IPv6 Header	Source Address	MN0X (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	Type	146

6. MN0X receives MPA w/ RH (*3) (Refer to 5.15.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
Mobility Header	Type	147
	M Flag	0
	O Flag	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Prefix	HA0 (Link0, global)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
Mobility Header	Type	147
	M Flag	0
	O Flag	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	0
	Prefix	HA0 (Link0, global)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Type 2 Routing Header	Length	2



	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
Mobility Header	Type	147
	M Flag	0
	O Flag	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	0
	Prefix	(Link0, prefix)

[JUDGMENT]

- (*1) PASS: RUT sends RA to multicast (If RUT supports Real Home Link.)
- (*2) PASS: MN0X receives BA w/ RH
- (*3) PASS: MN0X receives MPA w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.6.2, 10.6.3

6.10.1.1.2 HA_8_1_15 - Receiving suspicious Mobile Prefix Solicitation non-zero reserved field

[PURPOSE]

HA_8_1_15 - Receiving suspicious Mobile Prefix Solicitation non-zero reserved field

[CATEGORY]

ROUTER : ADVANCED FUNCTION(MPD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

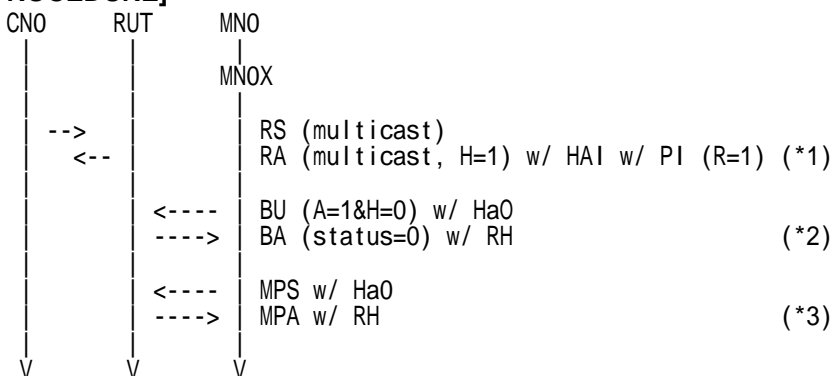
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CN0 sends RS (If RUT supports Real Home Link.) (Refer to 5.1.1)

IPv6 Header	Source Address	0:0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*) (If RUT supports Real Home Link.) (Refer to 5.2.2)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. MNOX sends BU w/ HaO (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1

	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

4. MNOX receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
Binding Refresh Advice Option	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
PadN Option	Length	2

5. MNOX sends MPS w/ HaO (Refer to 5.14.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	Type	146
	reserved	1

6. MNOX receives MPA w/ RH (*3) (Refer to 5.15.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
Mobility Header	Type	147
	M Flag	0
	O Flag	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Prefix	HA0 (Link0, global)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
Mobility Header	Type	147
	M Flag	0
	O Flag	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	0
	Prefix	HA0 (Link0, global)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
Mobility Header	Type	147
	M Flag	0
	O Flag	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	0
	Prefix	(Link0, prefix)



[JUDGMENT]

- (*1) PASS: RUT sends RA to multicast (If RUT supports Real Home Link.)
- (*2) PASS: MN0X receives BA w/ RH
- (*3) PASS: MN0X receives MPA w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.6.2, 10.6.3

6.10.1.1.3 HA_8_1_7 - Comparison of binding lifetime and prefix lifetime in Mobile Prefix Advertisement

[PURPOSE]

HA_8_1_7 - Comparison of binding lifetime and prefix lifetime in Mobile Prefix Advertisement

[CATEGORY]

ROUTER : ADVANCED FUNCTION(MPD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

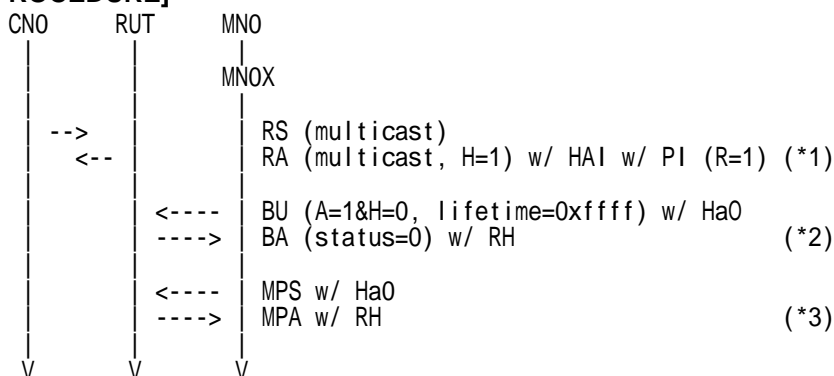
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (If RUT supports Real Home Link.) (Refer to 5.1.1)

IPv6 Header	Source Address	0::0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (If RUT supports Real Home Link.) (Refer to 5.2.2)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. MNOX sends BU w/ Ha0 (Refer to 5.9.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5

	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	0xffff
PadN Option	Length	0
Alternate CoA Option	Address	MNOX (Link0X, global)

4. MNOX receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=0xffff =X
Binding Refresh Advice Option	Interval	<=0xffff

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15 =X
	Lifetime	<=0xffff
PadN Option	Length	2

5. MNOX sends MPS w/ HaO (Refer to 5.14.1)

IPv6 Header	Source Address	MNOX (Link0X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	Type	146

6. MNOX receives MPA w/ RH (*3) (Refer to 5.15.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
Mobility Header	Type	147
	M Flag	0
	O Flag	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Valid Lifetime	>=X
	Prefix	HAO (Link0, global)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
Mobility Header	Type	147
	M Flag	0
	O Flag	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	0
	Valid Lifetime	>=X
	Prefix	HAO (Link0, global)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MNOX (Link0X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
Mobility Header	Type	147
	M Flag	0
	O Flag	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1



	R Flag	0
	Valid Lifetime	>=X
	Prefix	(Link0, prefix)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast (If RUT supports Real Home Link.)

(*2) PASS: MN0X receives BA w/ RH

(*3) PASS: MN0X receives MPA w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.6.4

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0,global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
PadN Option	Lifetime	105
	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

4. MN1X receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0 or 1
		K Flag	0
		Sequence	15
		Lifetime	<=105
Interval		<=105	
Binding Refresh Advice Option	Interval	<=105	

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0 or 1
		K Flag	0
		Sequence	15
		Lifetime	<=105
Length		2	
PadN Option	Length	2	

5. MN1X sends MPS w/ HaO (Refer to 5.14.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	Type	146

6. MN1X receives MPA w/ RH (*3) (Refer to 5.15.1)

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA6_SPI	
Encapsulating Security Payload	Security Parameters Index	SA6_SPI	
	Mobility Header	Type	147
		M Flag	0
O Flag		0	
Prefix Information Option	Prefix Length	64	
	L Flag	1	
	A Flag	1	
	R Flag	1	
	Prefix	HA0 (Link0, global)	

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA6_SPI	
Encapsulating Security Payload	Security Parameters Index	SA6_SPI	
	Mobility Header	Type	147
		M Flag	0
O Flag		0	
Prefix Information Option	Prefix Length	64	
	L Flag	1	
	A Flag	1	
	R Flag	0	
	Prefix	HA0 (Link0, global)	

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA6_SPI	
Encapsulating Security Payload	Security Parameters Index	SA6_SPI	
	Mobility Header	Type	147
		M Flag	0
O Flag		0	



Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	0
	Prefix	(Link0, prefix)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast (If RUT supports Real Home Link.)

(*2) PASS: MN1X receives BA w/ RH

(*3) PASS: MN1X receives MPA w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.6.2, 10.6.3

Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
	Lifetime	105
PadN Option	Length	0
Alternate CoA Option	Address	MN1X (Link1X, global)

4. MN1X receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
	Interval	<=105

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA2_SPI
Mobility Header	MH Type	6
	Status	0 or 1
	K Flag	0
	Sequence	15
	Lifetime	<=105
	Length	2

5. MN1X sends MPS w/ HaO (Refer to 5.14.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	Type	146
	reserved	1

6. MN1X receives MPA w/ RH (*3) (Refer to 5.15.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
Mobility Header	Type	147
	M Flag	0
	O Flag	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	1
	Prefix	HA0 (Link0, global)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
Mobility Header	Type	147
	M Flag	0
	O Flag	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	0
	Prefix	HA0 (Link0, global)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
Mobility Header	Type	147
	M Flag	0
	O Flag	0
Prefix Information Option	Prefix Length	64
	L Flag	1



	A Flag	1
	R Flag	0
	Prefix	(Link0, prefix)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast (If RUT supports Real Home Link.)

(*2) PASS: MN1X receives BA w/ RH

(*3) PASS: MN1X receives MPA w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 10.6.2, 10.6.3

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0,global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA1_SPI
Mobility Header	MH Type	5
	Sequence Number	15
	A Flag	1
	H Flag	1
	L Flag	0
	K Flag	0
PadN Option	Lifetime	0xffff
Alternate CoA Option	Length	0
	Address	MN1X (Link1X, global)

4. MN1X receives BA w/ RH (*2) (Refer to 5.10.1, 5.10.2)

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0 or 1
		K Flag	0
		Sequence	15
		Lifetime	<=0xffff=X
Interval	<=0xffff		

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA2_SPI	
Encapsulating Security Payload	Security Parameters Index	SA2_SPI	
	Mobility Header	MH Type	6
		Status	0 or 1
		K Flag	0
		Sequence	15
		Lifetime	<=0xffff=X
Length	2		

5. MN1X sends MPS w/ HaO (Refer to 5.14.1)

IPv6 Header	Source Address	MN1X (Link1X, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MN0 (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	Type	146

6. MN1X receives MPA w/ RH (*3) (Refer to 5.15.1)

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA6_SPI	
Encapsulating Security Payload	Security Parameters Index	SA6_SPI	
	Mobility Header	Type	147
		M Flag	0
Prefix Information Option	O Flag	0	
	Prefix Length	64	
	L Flag	1	
	A Flag	1	
	R Flag	1	
	Valid Lifetime	>=X	
	Prefix	HA0 (Link0, global)	

IPv6 Header	Source Address	RUT (Link0, global)	
	Destination Address	MN1X (Link1X, global)	
Type 2 Routing Header	Length	2	
	Type	2	
	Segment left	1	
	Home Address	MN0 (Link0, global)	
	Security Parameters Index	SA6_SPI	
Encapsulating Security Payload	Security Parameters Index	SA6_SPI	
	Mobility Header	Type	147
		M Flag	0
Prefix Information Option	O Flag	0	
	Prefix Length	64	
	L Flag	1	
	A Flag	1	
	R Flag	0	
	Valid Lifetime	>=X	
	Prefix	HA0 (Link0, global)	

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Type 2 Routing Header	Length	2
	Type	2
	Segment left	1
	Home Address	MN0 (Link0, global)
	Security Parameters Index	SA6_SPI
Encapsulating Security Payload	Security Parameters Index	SA6_SPI
Mobility Header	Type	147



	M Flag	0
	O Flag	0
Prefix Information Option	Prefix Length	64
	L Flag	1
	A Flag	1
	R Flag	0
	Valid Lifetime	>=X
	Prefix	(Link0, prefix)

[JUDGMENT]

- (*1) PASS: RUT sends RA to multicast (If RUT supports Real Home Link.)
- (*2) PASS: MN1X receives BA w/ RH
- (*3) PASS: MN1X receives MPA w/ RH

[REFERENCES]

RFC3775 Mobility Support in IPv6
See Section 10.6.4

6.10.2 Receiving Invalid Mobile Prefix Solicitation

6.10.2.1 Real Home Link

6.10.2.1.1 HA_8_1_3 - Receiving Mobile Prefix Solicitation without home registration

[PURPOSE]

HA_8_1_3 - Receiving Mobile Prefix Solicitation without home registration

[CATEGORY]

ROUTER : ADVANCED FUNCTION(MPD)

[REQUIREMENT OF TEST]

NONE

[TOPOLOGY]

Refer to 2.2 Common Topology-2

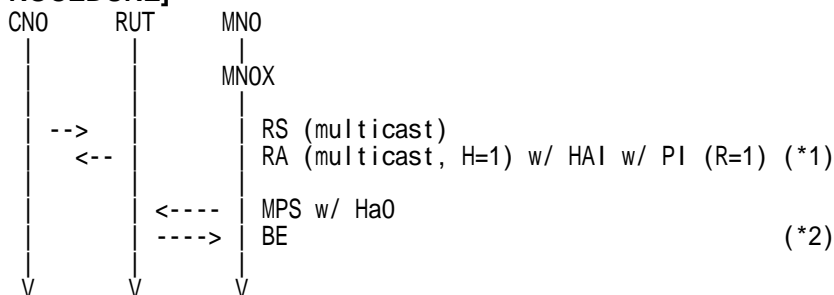
[TEST SETUP]

Refer to 3.1 Common Setup-1

[INITIALIZATION]

Refer to 4.1 Common Initialization-1

[PROCEDURE]



1. CNO sends RS (If RUT supports Real Home Link.) (Refer to 5.1.1)

IPv6 Header	Source Address	0:0 (Unspecified address)
	Destination Address	(All-routers multicast address)
ICMPv6 Header	Type	133

2. RUT sends RA (*1) (If RUT supports Real Home Link.) (Refer to 5.2.2)

IPv6 Header	Source Address	RUT (Link0, link-local)
	Destination Address	(All-nodes multicast address)
ICMPv6 Header	Type	134
	H Flag	1
Home Agent Information Option	Home Agent Preference	10
Prefix Information Option	R Flag	1
	Prefix	RUT (Link0, global)

3. MNOX sends MPS w/ HaO (Refer to 5.14.1)

IPv6 Header	Source Address	MNOX (LinkOX, global)
	Destination Address	RUT (Link0, global)
Destination Option Header	Home Address	MNO (Link0, global)
Encapsulating Security Payload	Security Parameters Index	SA5_SPI
Mobility Header	Type	146



4. MN0X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN0X (Link0X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast (If RUT supports Real Home Link.)

(*2) PASS: MN0X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.3.1



4. MN1X receives BE (*2) (Refer to 5.11.1)

IPv6 Header	Source Address	RUT (Link0, global)
	Destination Address	MN1X (Link1X, global)
Mobility Header	MH Type	7
	Status	1
	Home Address	MN0 (Link0, global)

[JUDGMENT]

(*1) PASS: RUT sends RA to multicast (If RUT supports Real Home Link.)

(*2) PASS: MN1X receives BE

[REFERENCES]

RFC3775 Mobility Support in IPv6

See Section 9.3.1



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