Test Specification
For DHCPv6

Relay agent Test

Revision Alpha 0.1

Yokogawa Electric Corporation

References

This test specification focus on following DNS related RFCs.

RFC

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1. Introduction

2. Common Topology

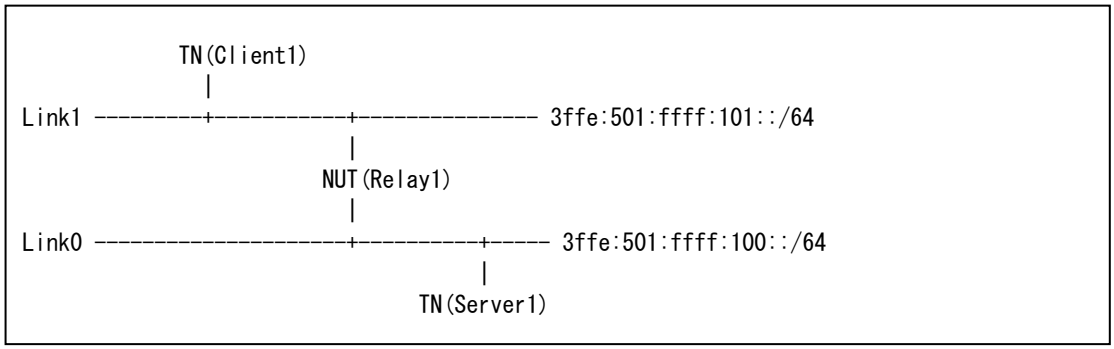


Fig. 1　Topology No.1

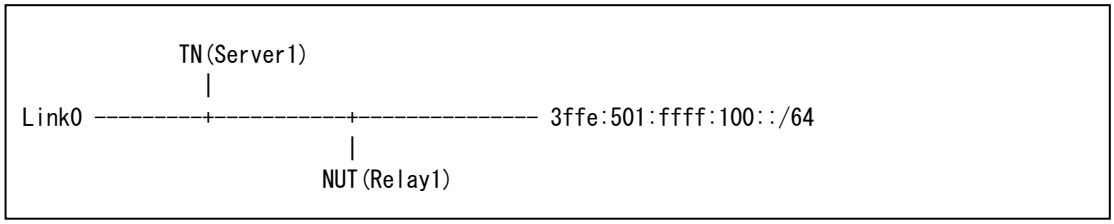


Fig. 2　Topology No.2

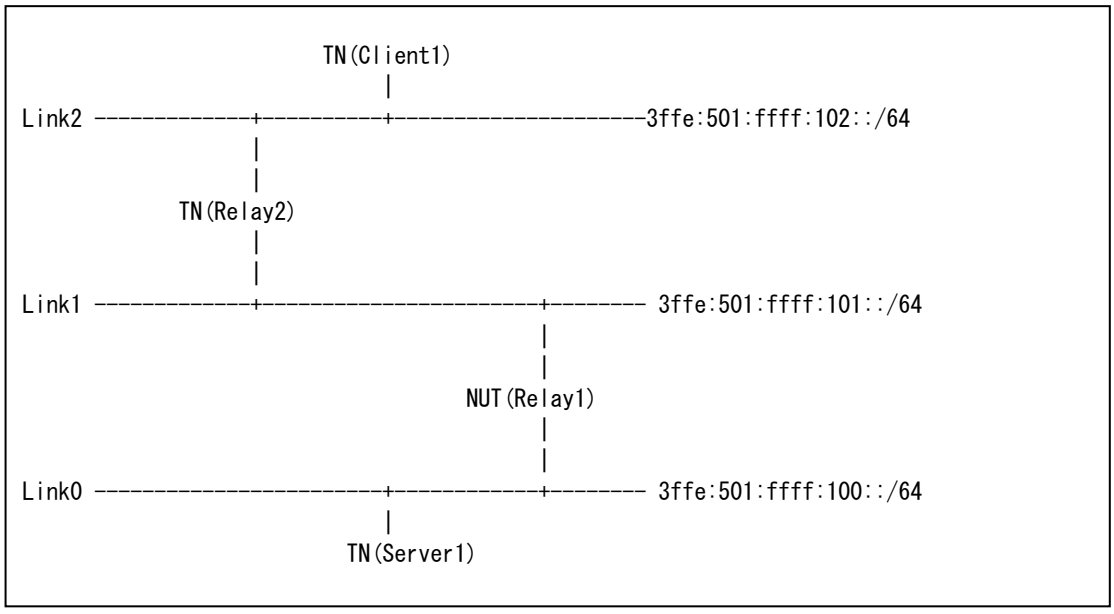


Fig. 3　Topology No.3

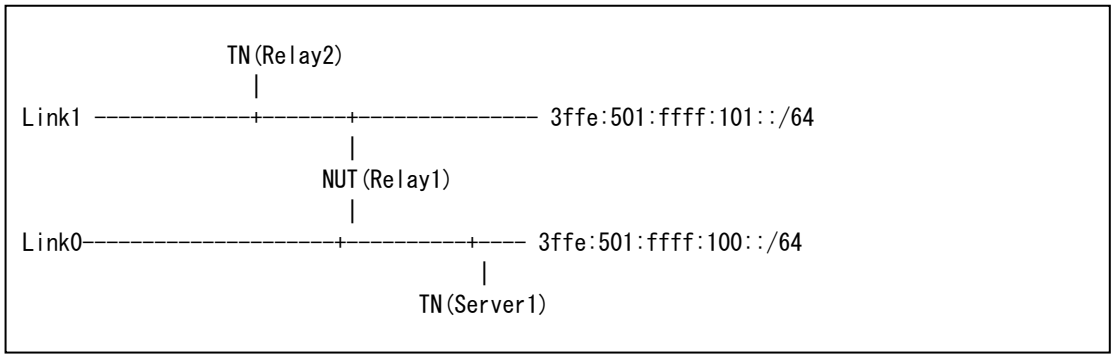


Fig. 4　Topology No.4

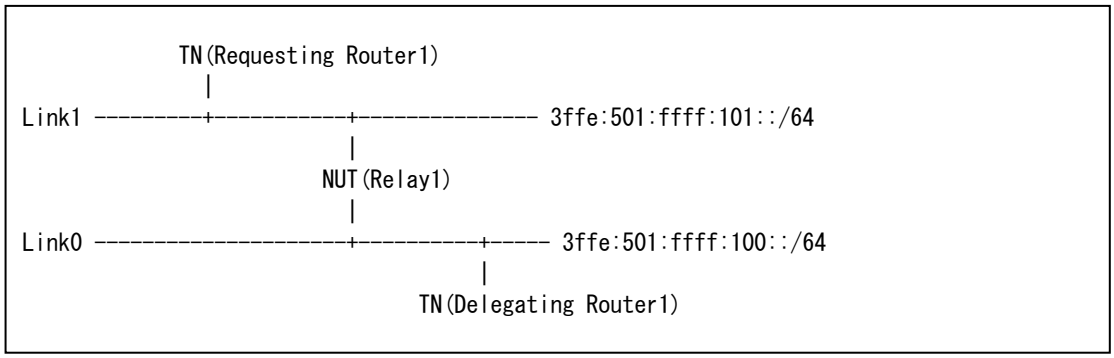


Fig. 5　Topology No.5

3. Terminology

4. Description

Each test specification consists of following parts.

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 what classification of device must satisfy the test.

Initialization: The Initialization 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.

Procedure: The Procedure describes step-by-step instructions for carrying out the test.

Judgment: The Judgment describes expected result. If we can observe as same result as the description of Judgment, the NUT passes the test.

References: The References section contains some parts of specification

5. Relay agent Test

5.1. UDP Port

Purpose:

- **Verification Points**
  Relay agents relay Advertise messages with UDP port 546 to client.

  Relay agents send Relpy_forward messages with UDP port 547 to server.

Category:

Relay agent

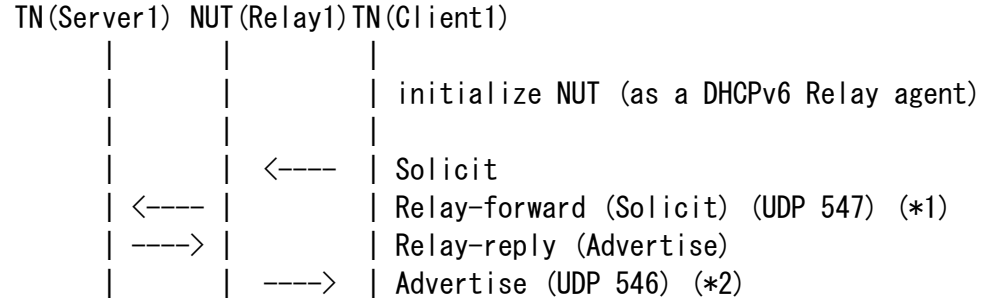
Initialization:

- **Network Topology**
  Refer the topology "Fig. 1　Topology No.1".

- **Configuration**

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Server1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Client1	TN	Link1	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a2a2	00:00:00:00:a2:a2

Procedure:



- **Termination**
  N/A

Judgment:

(*1)PASS: NUT sends Relay-forward Message.
(*2)PASS: NUT sends Advertise Message.

References:

RFC3315
5.2. UDP Ports

5.2.Relay-forward Message

Purpose:

- **Verification Points**
  Relay agents send Relpy_forward messages correctly.

Category:

Relay agent

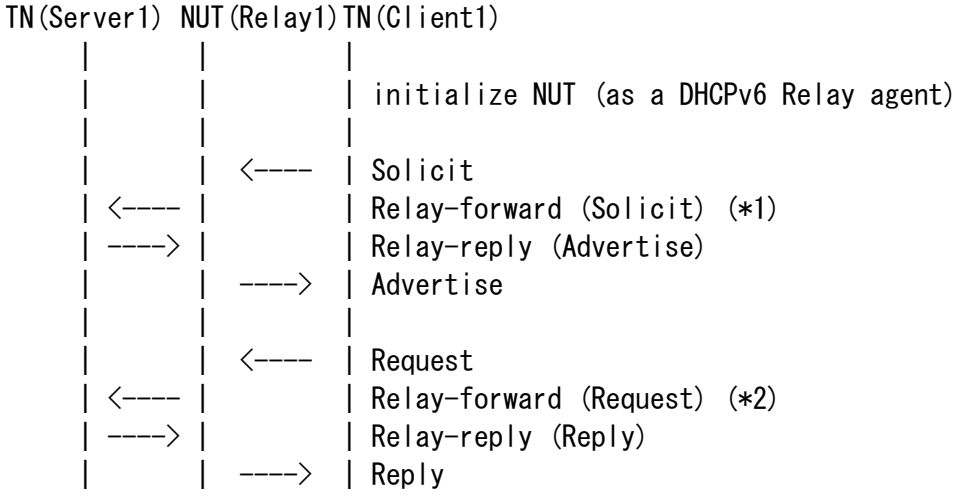
Initialization:

- **Network Topology**
  Refer the topology "Fig. 1　Topology No.1".

- **Configuration**

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Server1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Client1	TN	Link1	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a4a4	00:00:00:00:a4:a4

Procedure:



- **Termination**
  N/A

Judgment:

(*1)PASS: Checking the format of Relay-forward Message.
(*2)PASS: Checking the format of Relay-forward Message.

References:

RFC3315
7. Relay Agent/Server Message Formats

5.3.Processing Invalid Advertise Message

Purpose:

- **Verification Points**
  Discard Advertise message

Category:

Relay agent

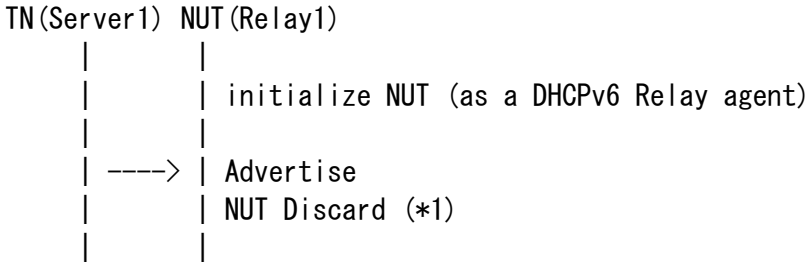
Initialization:

- **Network Topology**
  Refer the topology "Fig.2　Topology No.2".

- **Configuration**

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Server1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1

Procedure:



- **Termination**
  N/A

Judgment:

(*1)PASS: NUT Discard the Advertise Message and don't return any message.

References:

RFC3315
15.3. Advertise Message

5.4.Processing Invalid Reply Message

Purpose:

- **Verification Points**
  Discard Reply message

Category:

Relay agent

Initialization:

- **Network Topology**
  Refer the topology "Fig.2　Topology No.2".

- **Configuration**

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Server1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1

Procedure:

```
TN(Server1)  NUT(Relay1)
     |          | initialize NUT (as a DHCPv6 Relay agent)
     |          |
     | ----->   | Reply
     |          | NUT Discard (*1)
     |          |
```

- **Termination**
  N/A

Judgment:

(*1)PASS: NUT Discard the Reply Message and don't send any return message.

References:

RFC3315
15.10. Reply Message

5.5.Processing Invalid Reconfigure Message

Purpose:

- **Verification Points**
  Discard Reconfigure message

Category:

Relay agent

Initialization:

- **Network Topology**
  Refer the topology "Fig.2　Topology No.2".

- **Configuration**

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Server1	TN	Link0	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1

Procedure:

```
TN(Server1)  NUT(Relay1)
     |          | initialize NUT (as a DHCPv6 Relay agent)
     |          |
     | ----->   | Reconfigure
     |          | NUT Discard (*1)
     |          |
```

- **Termination**
  N/A

Judgment:

(*1)PASS: NUT Discard the Reconfigure Message and don't send any return message.

References:

RFC3315
15.11. Reconfigure Message

5.6.Using of Multicast Address

Purpose:

- **Verification Points**
  The default destination address of the Relay-forward Message

  ✧ **All_DHCP_Servers (FF05::1:3)**
  The default value of Hop Limit field of IPv6 packet

  ✧ **32**

  Relay-forward Message Format

  ✧ msg-type
  RELAY-FORW (12)

  ✧ hop-count
  0

  ✧ link-address
  Any

  ✧ peer-address
  Same as the source address from the previous message's IP header before relay-forward

  ✧ options
  Relay Message option

Category:

Relay agent

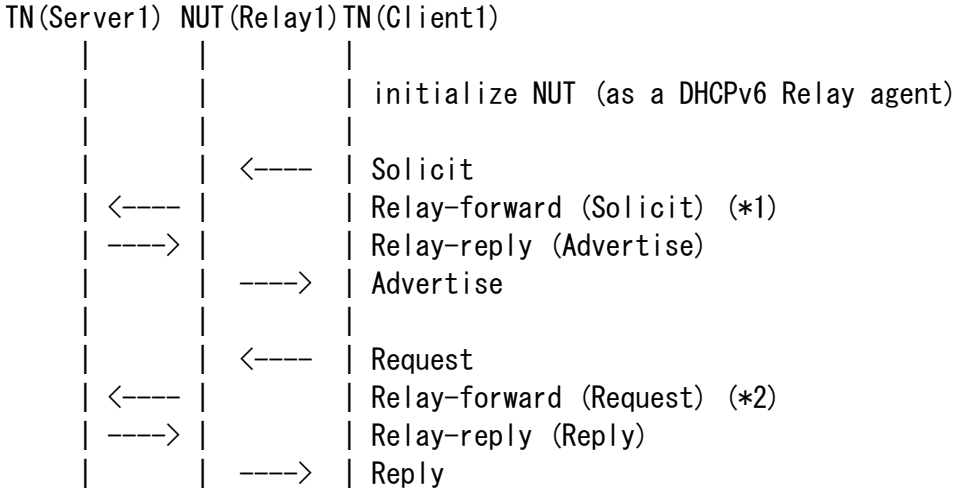
Initialization:

- **Network Topology**
  Refer the topology "Fig. 1　Topology No.1".

- **Configuration**

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Server1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Client1	TN	Link1	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a2a2	00:00:00:00:a2:a2

Procedure:



- **Termination**
  N/A

Judgment:

(*1)PASS: Checking the format and destination address of Relay-forward Message.
(*2)PASS: Checking the format and destination address of Relay-forward Message.

References:

RFC3315
20. Relay Agent Behavior

5.7.Relaying a Client Message

Purpose:

- **Verification Points**
  Relay-forward Message Format

  ✧ msg-type
  RELAY-FORW (12)

  ✧ hop-count
  0

  ✧ link-address
  A global or site-scoped address with a prefix assigned to the link

  ✧ peer-address
  Any

  ✧ options
  Relay Message option
  Same as the Message that be relayed (Solicit) or (Request)

Category:

Relay agent

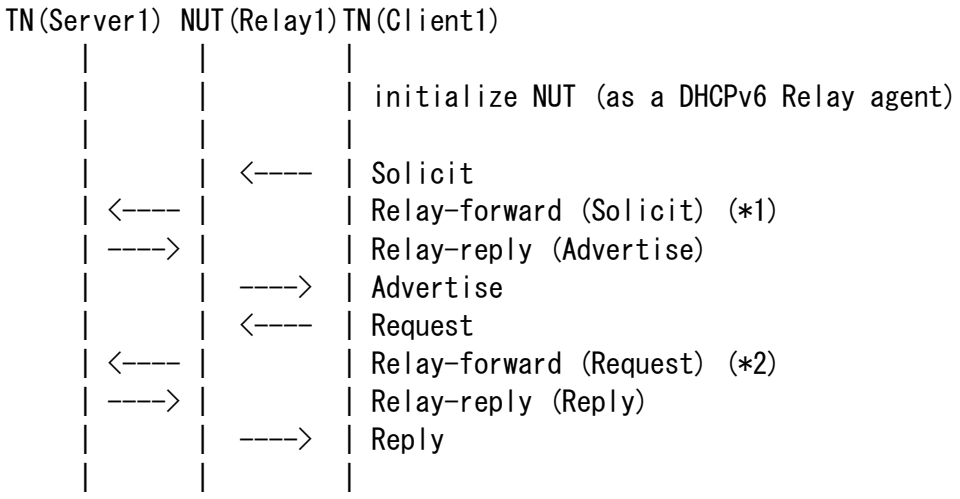
Initialization:

- **Network Topology**
  Refer the topology "Fig. 1　Topology No.1".

- **Configuration**

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Server1	TN	Link1	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Client1	TN	Link0	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a2a2	00:00:00:00:a2:a2

Procedure:



- **Termination**
  N/A

Judgment:

(*1)(*2)PASS: Checking the format of Relay-forward Message.

References:

RFC3315
20.1.1. Relaying a Message from a Client

5.8.Relaying a Relay-forward Message

Purpose:

- **Verification Points**
  NUT's Relay-forward Message Format

  ✧ msg-type
  RELAY-FORW (12)

  ✧ hop-count
  1

  ✧ link-address
  A global or site-scoped address with a prefix assigned to the link
  or
  0
  or
  Any and with a Inter face-Id

  ✧ peer-address
  the source address from the IP datagram in TN's Relay-forward Message

  ✧ options
  Relay Message option
  Same as the received Relay-forward Message

Category:

Relay agent

Initialization:

- **Network Topology**
  Refer the topology "Fig.3　Topology No.3".

- **Configuration**

  TN (Relay agent2)'s Relay-forward Message

  ✧ msg-type
  RELAY-FORW (12)

✧ hop-count
0

✧ link-address
A global or site-scoped address with a prefix assigned to the link

✧ peer-address
Any

✧ options
Relay Message option
Any

Procedure:

```
TN(Relay2)  NUT(Relay1)TN(Server1)
    |          |          |
    | ----->   |          | Relay-forward (Solicit)
    |          | ------>  | Relay-forward (Solicit)
```

- **Termination**
  N/A

Judgment:

(*1)PASS: NUT will send new Relay-forward message to the Server1.

References:

RFC3315
20.1.2. Relaying a Message from a Relay Agent

5.9.Relaying a Relay-forward Message(w/Interface-Id Option)

Purpose:

- **Verification Points**
  NUT's Relay-forward Message Format

  ✧ msg-type
  RELAY-FORW (12)

  ✧ hop-count
  1

  ✧ link-address
  Any

  ✧ peer-address
  the source address from the IP datagram in TN's Relay-forward Message

  ✧ options
  Relay Message option
  Same as the received Relay-forward Message

Category:

Relay agent

Initialization:

- **Network Topology**
  Refer the topology "Fig.4　Topology No.4".

- **Configuration**

  TN (Relay agent2)'s Relay-forward Message

  ✧ msg-type
  RELAY-FORW (12)

  ✧ hop-count
  0

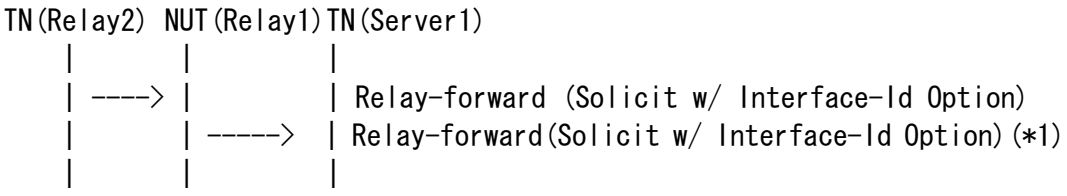
✧ link-address
A global or site-scoped address with a prefix assigned to the link
or
Any

✧ peer-address
Any

✧ options
Relay Message option
Interface-Id Option

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Server1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Relay2	TN	Link1	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a7a7	00:00:00:00:a7:a7

Procedure:



- **Termination**
  N/A

Judgment:

(*1)PASS: NUT will send new Relay-forward message to the Server1.

References:

RFC3315
20.1.2. Relaying a Message from a Relay Agent

5.10. Processing a Invalid Relay-forward Message

Purpose:

- **Verification Points**
  If the hop-count in the Relay-forward message is equal to HOP_COUNT_LIMIT, the NUT will Discard this message.

Category:

Relay agent

Initialization:

- **Network Topology**
  Refer the topology "Fig. 4 Topology No.4".

- **Configuration**

  Reply-forward message
  hop-count = HOP_COUNT_LIMIT(32)

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Server1	TN	Link1	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Relay2	TN	Link0	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a7a7	00:00:00:00:a7:a7

Procedure:

```
TN(Relay2)  NUT(Relay1)
    |          |
    | ----->   | Relay-forward (w/ invalid hop-count)
    |          |
    |          | NUT Discard the Relay-forward message
    |          |
```

- **Termination**
  N/A

Judgment:

(*1)PASS: NUT will Discards the Relay Forward message and must not return any message.

References:

RFC3315
20.1.2. Relaying a Message from a Relay Agent

5.11. Relaying a Relay-reply Message

Purpose:

- **Verification Points**
  NUT's Message Format

  NUT will relay the Relay-reply message and only relay the DHCP-relay message (Advertise) part of relay message option.

Category:

Relay agent

Initialization:

- **Network Topology**
  Refer the topology "Fig. 1　Topology No.1".

- **Configuration**
  TN (Server1)'s Relay-reply Message

  ✧ msg-type
  RELAY-REPL (13)

  ✧ hop-count
  Any

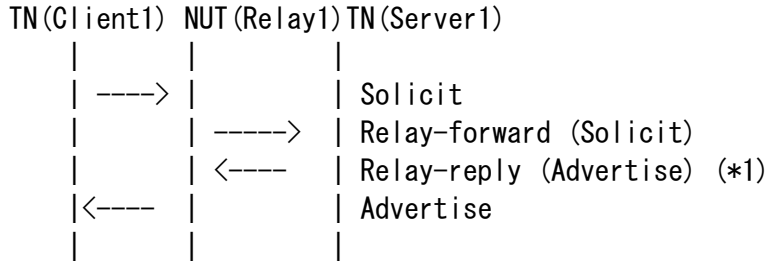
  ✧ link-address
  A global or site-scoped address with a prefix assigned to the link

  ✧ peer-address
  Any

  ✧ options
  Relay Message option
  DHCP-relay-message = Advertise

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Server1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Client1	TN	Link1	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a2a2	00:00:00:00:a2:a2

Procedure:



- **Termination**
  N/A

Judgment:

(*1)PASS: NUT will receive the Relay-reply message and relay it to the client.

References:

RFC3315
20.2. Relaying a Relay-reply Message

5.12. Relaying a Relay-reply Message to another Relay agent

Purpose:

- **Verification Points**
  Relay-reply Message 2

  ✧ msg-type
  RELAY-REPLY

  ✧ hop-count
  0

  ✧ link-address
  Rleay2's address (Link2)

  ✧ peer-address
  Client1's address

  ✧ Relay Message option
  Advertise Message

Category:

Relay agent

Initialization:

- **Network Topology**
  Refer the topology "Fig. 3 Topology No.3".

- **Configuration**
  Relay-reply Message 1

  ✧ msg-type
  RELAY-REPLY

  ✧ hop-count
  1

  ✧ link-address
  0

✧ peer-address
Relay2's Global address (Link1)

✧ Relay Message option
- msg-type
  RELAY-REPLY

- hop-count
  0

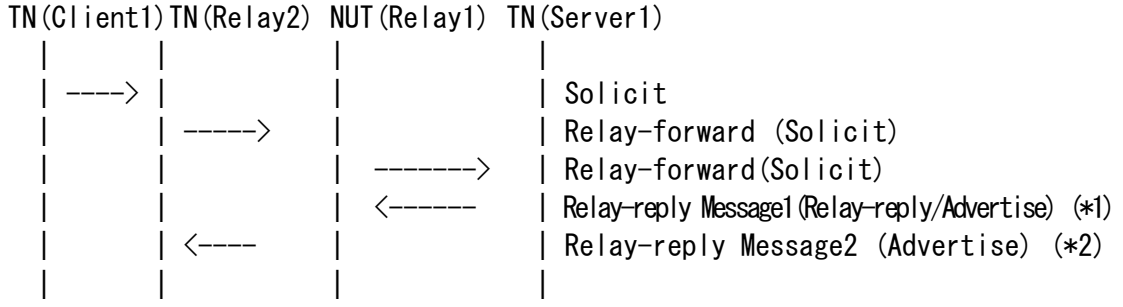
- link-address
  Rleay2's address (Link2)

- peer-address
  Client1's address

- Relay Message option
  Advertise Message

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Server1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Relay2(Link1)	TN	Link1	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a7a7	00:00:00:00:a7:a7
Relay2(Link2)	TN	Link2	3ffe:501:ffff:102::/64	fe80::200:ff:fe00:a8a8	00:00:00:00:a8:a8
Client1	TN	Link2	3ffe:501:ffff:102::/64	fe80::200:ff:fe00:a2a2	00:00:00:00:a2:a2

Procedure:



(*1)(*2) PASS: NUT will covert the Relay-reply message correctly.

- **Termination**
  N/A

Judgment:

(*1)(*2) PASS: NUT will covert the Relay-reply message correctly.

References:

RFC3315
20.3. Construction of Relay-reply Messages

5.13. Relaying a Relay-reply Message(w/Interface-Id Option)

Purpose:

- **Verification Points**
  NUT's Message Format

  ✧ NUT will relay the Relay-reply message through the interface identified by the Interface-Id Option

Category:

Relay agent

Initialization:

- **Network Topology**
  Refer the topology "Fig. 1　Topology No.1".

- **Configuration**
  TN (Server1)'s Relay-reply Message

  ✧ msg-type
  RELAY-REPL (13)

  ✧ hop-count
  Any

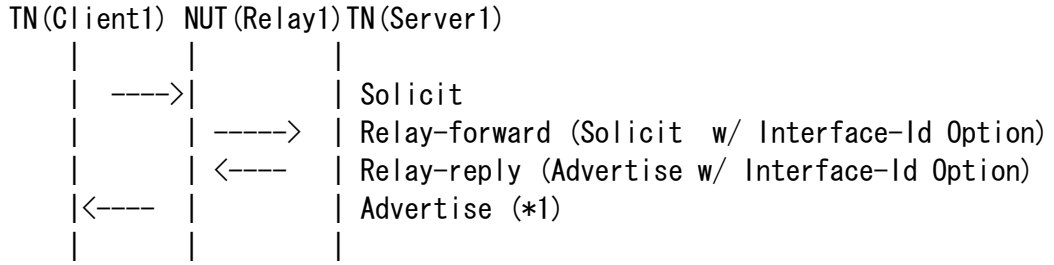
  ✧ link-address
  A global or site-scoped address with a prefix assigned to the link

  ✧ peer-address
  Any

  ✧ options
  Relay Message option
  Interface-Id Option
  Any

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Server1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Client1	TN	Link1	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a2a2	00:00:00:00:a2:a2

Procedure:



- **Termination**
  N/A

Judgment:

(*1)PASS: NUT will send the Advertise message to the client through the interface specified by the interface-Id Option.

References:

RFC3315
20.2. Relaying a Relay-reply Message

5.14. Relay Message Option

Purpose:

- **Verification Points**
  The format of Relay Message option

  ✧ option-code
  OPTION_RELAY_MSG (9)

  ✧ option-len
  Length of DHCP-relay-message

  ✧ DHCP-relay-message
  Same as the message that is be relayed

Category:

Relay agent

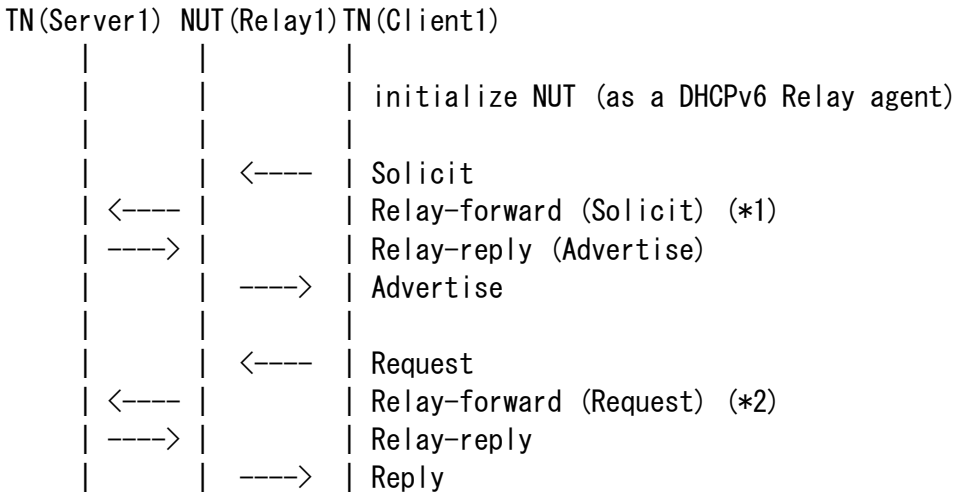
Initialization:

- **Network Topology**
  Refer the topology "Fig. 1 Topology No.1".

- **Configuration**

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Server1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Client1	TN	Link1	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a2a2	00:00:00:00:a2:a2

Procedure:



- **Termination**
  N/A

Judgment:

(*1)PASS: Checking the format of Relay Message option.
(*2)PASS: Checking the format of Relay Message option.

References:

RFC3315
22.10. Relay Message Option

5.15. Interface-Id Option

Purpose:

- **Verification Points**
  Interface-Id Option's format

  ✧ option-code
  OPTION_INTERFACE_ID (18).

  ✧ option-len
  Length of Interface-Id field.

  ✧ Interface-Id
  any

Category:

Relay agent

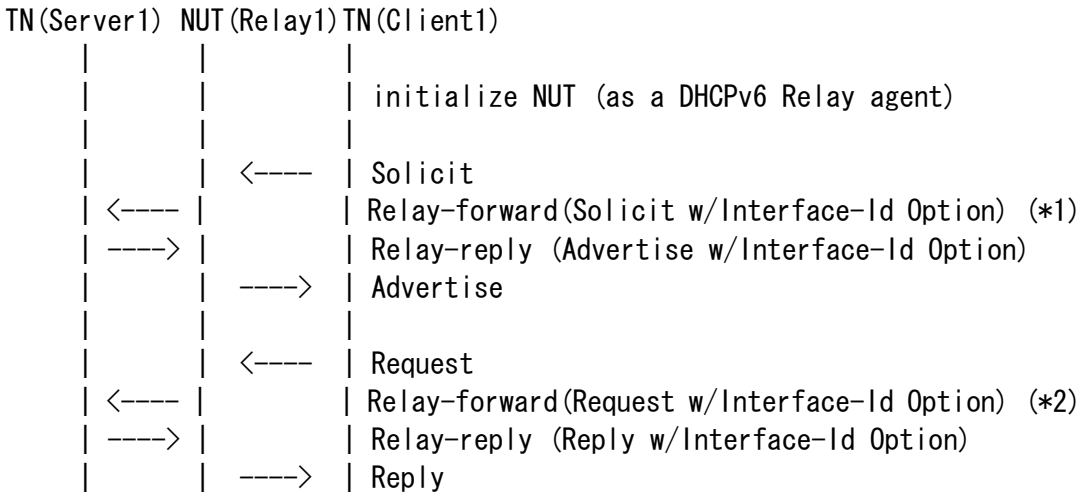
Initialization:

- **Network Topology**
  Refer the topology "Fig. 1 Topology No.1".

- **Configuration**

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Server1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Client1	TN	Link1	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a4a4	00:00:00:00:a4:a4

Procedure:



- **Termination**
  N/A

Judgment:

(*1,*2)PASS: Checking the format of Interface-Id Option.

References:

RFC3315
22.18. Interface-Id Option

5.16. Relay messages obtaining Prefix Options

Purpose:

- **Verification Points**
  The Relay-forward message is exchanged correctly with IA_PD option.

Category:

Relay agent

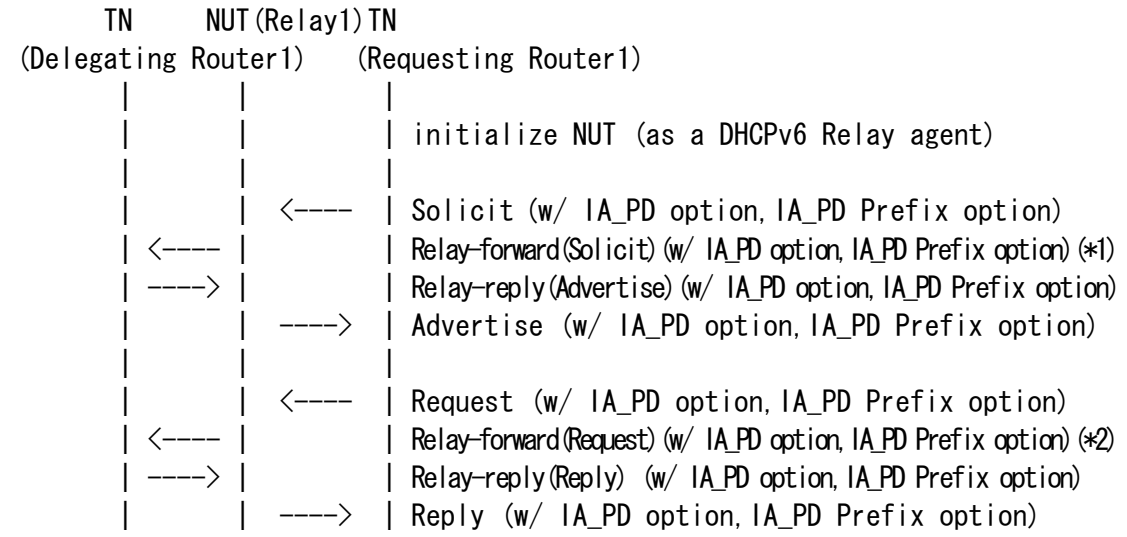
Initialization:

- **Network Topology**
  Refer the topology "Fig. 5 Topology No.5".

- **Configuration**

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Delegating Router1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Requesting Router1	TN	Link1	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a2a2	00:00:00:00:a2:a2

Procedure:



- **Termination**
  N/A

Judgment:

(*1)PASS: Checking the format of Relay-forward Message.
(*2)PASS: Checking the format of Relay-forward Message.

References:

RFC3633
14. Relay agent behavior

5.17. Relay-forward message

Purpose:

- **Verification Points**
  The stateless DHCP messages are relayed properly

Category:

Relay agent

Initialization:

- **Network Topology**
  Refer the topology "Fig. 1 Topology No.1".

- **Configuration**

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Server1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Client1	TN	Link1	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a2a2	00:00:00:00:a2:a2

Procedure:

```
TN(Server1)  NUT(Relay1)   TN(Client1)
     |          |              |
     |          |              | initialize NUT (as a stateless DHCPv6 Relay agent)
     |          | <----        | Information-request
     | <----    |              | Relay-forward (Information-request) (*1)
     | ---->    |              | Relay-reply (Reply)
     |          | ---->        | Relay-forward (Reply) (*2)
     |          |              |
```

- **Termination**
  N/A

Judgment:

(*1)(*2)PASS: The NUT relay the messages by Relay-forward message.

References:

RFC3736
5.1. Messages Required for Stateless DHCP Service

5.18. The content of relay massages

Purpose:

- **Verification Points**
  The content of Relay message Option is consistent to the message be relayed.

Category:

Relay agent

Initialization:

- **Network Topology**
  Refer the topology "Fig. 1 Topology No.1".

- **Configuration**

Device Name	Device Type	I/F	Assigned Prefix	Link Local Addr	MAC Addr
Relay1(Link0)	NUT	Link0	3ffe:501:ffff:100::/64	NUT's Linklocal address(Link0)	NUT's MAC address(Link0)
Relay1(Link1)	NUT	Link1	3ffe:501:ffff:101::/64	NUT's Linklocal address(Link1)	NUT's MAC address(Link1)
Server1	TN	Link0	3ffe:501:ffff:100::/64	fe80::200:ff:fe00:a1a1	00:00:00:00:a1:a1
Client1	TN	Link1	3ffe:501:ffff:101::/64	fe80::200:ff:fe00:a2a2	00:00:00:00:a2:a2

Procedure:

```
TN(Server1)  NUT(Relay1)   TN(Client1)
      |         |             |
      |         |             | initialize NUT (as a stateless DHCPv6 Relay agent)
      |         | <----       | Information-request
      | <----   |             | Relay-forward (Information-request) (*1)
      | ---->   |             | Relay-reply (Reply)
      |         | ---->       | Reply (*2)
      |         |             |
```

- **Termination**
  N/A

Judgment:

(*1) (*2) PASS: The NUT relay the messages by the Relay-reply message, it includes Relay Message option.

References:

RFC3736
5.2. Options Required for Stateless DHCP Service