Abstract

This document updates RFC 3315 to allow the Rebind message type to appear in the Reconfigure Message option of a Reconfigure message, which extends the Reconfigure message to allow a DHCPv6 server to cause a DHCPv6 client to send a Rebind message. The document also clarifies how a DHCPv6 client responds to a received Reconfigure message.

1. Introduction

DHCPv6 [RFC3315] allows a server to send an unsolicited Reconfigure
message to a client. The client’s response to a Reconfigure message, according to section 19 of RFC 3315 is either a Renew or an Information-Request message, depending on the contents of the msg-type field in the Reconfigure Message option of the Reconfigure message.

If the client sends a Renew message, it includes a Server Identifier option in the Renew message to specify the server that should respond to the Renew message. Under some circumstances, it may be desirable for the client to communicate with a different server; for example, if the server that the client most recently communicated with is no longer available, the network administrator may want the client to communicate with a different server. This document expands the allowed values of the msg-type field to allow the server to indicate that the client is to send a Rebind message, which does not include a Server Identifier option and allows any server to respond to the client.

RFC 3315 does not specify that a Reconfigure message must be sent from the server with which the client most recently communicated, and it does not specify which server the client should identify with a Server Identifier option when the client responds to the Reconfigure message. This document clarifies that the client should send a Renew message in response to a Reconfigure message with a Server Identifier option identifying the same server that the client would have identified if the client had sent the Renew message after expiration of T1.

2. Terminology

The key words MUST, MUST NOT, REQUIRED, SHALL, SHALL NOT, SHOULD, SHOULD NOT, RECOMMENDED, MAY, and OPTIONAL in this document are to be interpreted as described in [RFC2119].

This document uses IPv6 and DHCPv6 terms as defined in section 4 of RFC 3315.

3. The Reconfigure Message option of the DHCPv6 Reconfigure Message

This section modifies section 22.19 of RFC 3315 to allow the specification of the Rebind message in a Reconfigure message.

A server includes a Reconfigure Message option in a Reconfigure message to indicate to the client whether the client responds with a Renew, an Information-request, or a Rebind message.
The format of this option is:

```
0                   1                   2                   3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+--------------------------------------------------+
|      OPTION_RECONF_MSG        |         option-len            |
+--------------------------------------------------+
|    msg-type   |                                  |
+----------------+                                  |
+----------------+                                  |
```

option-code OPTION_RECONF_MSG (19).
option-len 1.
msg-type 5 for Renew message, 6 for Rebind, 11 for Information-request message.

4. Server Behavior

This section updates specific text in sections 19.1, 19.2 and 19.3 of RFC 3315.

The server MUST include a Reconfigure Message option (as defined in Section 3) to select whether the client responds with a Renew message, a Rebind message or an Information-Request message.

The Reconfigure message causes the client to initiate a Renew/Reply, a Rebind/Reply message exchange or an Information-request/Reply message exchange. The server interprets the receipt of a Renew, a Rebind or an Information-request message (whichever was specified in the original Reconfigure message) from the client as satisfying the Reconfigure message request.

The server retransmits a Reconfigure message specifying a Rebind message in the same way as described in section 19.1.2 of RFC 3315.

In response to a Rebind message, the server generates and sends a Reply message to the client as described in sections 18.2.4 and 18.2.8, including options for configuration parameters.

The server MAY include options containing the IAs and new values for other configuration parameters in the Reply message, even if those IAs and parameters were not requested in the Renew message from the client.

4.1. Client Behavior

This section updates specific text in section 19.4 of RFC 3315.
Upon receipt of a valid Reconfigure message, the client responds with a Renew message, a Rebind message or an Information-request message as indicated by the Reconfigure Message option (as defined in Section 3). The client ignores the transaction-id field in the received Reconfigure message. While the transaction is in progress, the client silently discards any Reconfigure messages it receives.

When responding to a Reconfigure, the client creates and sends the Rebind message in exactly the same manner as outlined in section 18.1.4 of RFC 3315, with the exception that the client copies the Option Request option and any IA options from the Reconfigure message into the Rebind message.

If a client is currently sending Rebind messages, as described in section 18.1.4 of RFC 3315, the client ignores any received Reconfigure messages.

The client uses the same variables and retransmission algorithm as it does with Renew, Rebind or Information-request messages generated as part of a client-initiated configuration exchange. See sections 18.1.3, 18.1.4 and 18.1.5 of RFC 3315 for details. If the client does not receive a response from the server by the end of the retransmission process, the client ignores and discards the Reconfigure message.

5. Clarification of section 19.4.2, RFC 3315

When sending a Renew message in response to the receipt of a Reconfigure message, the client MUST include a Server Identifier option identifying the server the client most recently communicated with.

6. Security Considerations

This document adds no new security considerations beyond those present in RFC 3315.

7. IANA Considerations

There are no actions for IANA associated with this document.

8. Change log

This section MUST be removed before publication.
8.1. Revision -05

Clarified description of this feature in introduction.

Clarified action of client if it receives a Reconfigure while sending Rebind messages.

8.2. Revision -06

Corrected a minor typo, changing "RFC3315" to "RFC 3315" in section 1.

9. Normative References


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