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Customer Edge Router Identification Option
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Abstract

Several addressing mechanisms supporting DHCPv6 Prefix Delegation in home networks require identification of the customer edge router (CER) as the demarcation between the customer network and the service provider network. This document reserves a DHCPv6 option to identify the CER.

Table of Contents

1. Introduction

Several addressing mechanisms supporting DHCPv6 Prefix Delegation in home networks such as [I-D.gmann-homenet-relay-autoconf] require identification of the customer edge router as the demarcation between the customer network and the service provider network. For prefix delegation purposes, it is desirable for other routers within the home to know which device is the CER so that the customer nome network only requests a single prefix from the ISP DHCPv6 server, and efficiently distributes this prefix within the home. This document reserves a DHCPv6 option to be used to identify the CER.

1.1. Requirements Language

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 RFC 2119 [RFC2119].

2. CER Identification Option

A CER sets the CER_ID to the IPv6 address of its LAN interface. If it has more than one LAN IPv6 address, it selects one of its LAN or loopback IPv6 addresses to be used in the CER_ID. An ISP server does not respond with the CER_ID or sets the CER_ID to ::. Such a response or lack of response indicates to the DHCPv6 client that it is the CER.

The format of the CER Identification option is:

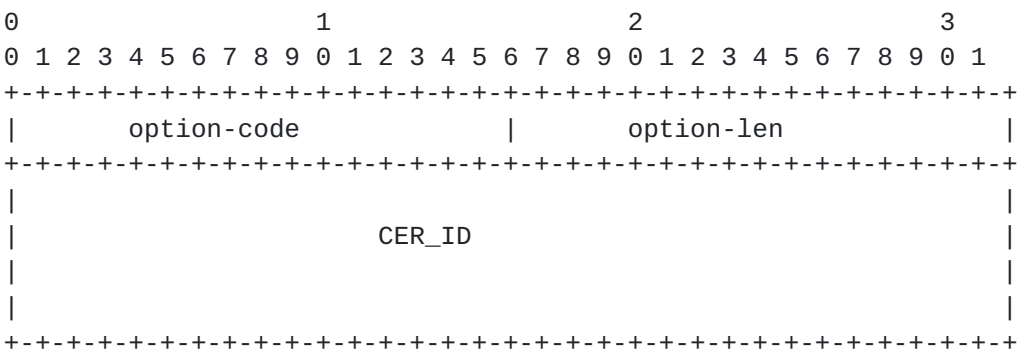

Figure 1.

A DHCPv6 client SHOULD include the CER Identification option code in an Option Request option [RFC3315] in its DHCP Solicit messages. The

DHCPv6 server MAY include the CER Identification option in any response it sends to a client that has included the CER Identification option code in an Option Request option. The CER Identification option is sent in the main body of the message to client, not as a sub-option in, e.g., an IA_NA, IA_TA [RFC3315]option. When sending the CER Identification option, the DHCPv6 server MUST set the CER_ID value to either one of its IPv6 addresses or ::. If a device does not receive the CER Identification Option or receives a CER ID of :: from the DHCPv6 server, it MUST include one of its Globally Unique IPv6 address(es) in the CER_ID value in response to DHCPv6 messages received by its DHCPv6 server that contains the CER Identification option code in an Option Request option. If the device has only one LAN interface, it SHOULD use its LAN IPv6 address as the CER_ID value. If the device has more than one LAN interface, it SHOULD use the lowest Globally Unique address not assigned to its WAN interface.

3. IANA Considerations

IANA is requested to assign an option code from the "DHCP Option Codes" Registry for OPTION_CER_ID.

4. Security Considerations

TBD

5. Acknowledgements

6. References

6.1. Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

[RFC3315] Droms, R., Bound, J., Volz, B., Lemon, T., Perkins, C., and M. Carney, "Dynamic Host Configuration Protocol for IPv6 (DHCPv6)", RFC 3315, July 2003.

6.2. Informative References

[I-D.gmann-homenet-relay-autoconf] Grundemann, C. and C. Donley, "Home Network Autoconfiguration via DHCPv6 Relay",

draft-gmann-homenet-relay-autoconf-01 (work in progress), March 2012.

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