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DHCP options for PANA Authentication Agents
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Abstract

This document defines new DHCPv4 and DHCPv6 options that contain a list of IP addresses to locate one or more of PANA Authentication

Agents (PAA). This is one of the many methods that a PANA Client (PaC) can use to locate PANA Authentication Agents (PAA).

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1. Introduction

The Protocol for carrying Authentication for Network Access (PANA) [[I-D.ietf-pana-pana](#)] defines a new Extensible Authentication Protocol (EAP) [[RFC3748](#)] lower layer that uses IP between the protocol end-points.

The PANA protocol is run between a PANA Client (PaC) and a PANA Authentication Agent (PAA) in order to perform authentication and authorization for the network access service.

This document specifies DHCPv4 [[RFC2131](#)] and DHCPv6 [[RFC3315](#)] options that allow PANA client (PaC) to discover PANA Authentication Agents (PAA). This is one of the many methods for locating PAAs.

2. Specification of Requirements

In this document, several words are used to signify the requirements of the specification. These words are often capitalized. 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](#)].

3. Terminology

This document uses the DHCP terminology defined in [[RFC2131](#)], [[RFC2132](#)] and [[RFC3315](#)].

This document uses the PANA terminology defined in [[I-D.ietf-pana-pana](#)]. In particular, the following terms are defined:

PANA Client (PaC):

The client side of the protocol that resides in the access device (e.g., laptop, PDA, etc.). It is responsible for providing the credentials in order to prove its identity (authentication) for network access authorization.

PANA Authentication Agent (PAA):

The protocol entity in the access network whose responsibility is to verify the credentials provided by a PANA client (PaC) and authorize network access to the device associated with the client and identified by a Device Identifier (DI).

4. PANA Authentication Agent DHCPv4 Option

This section defines a DHCPv4 option that carries a list of 32-bit (binary) IPv4 addresses indicating one or more PANA Authentication Agents (PAA) available to the PANA client.

The DHCPv4 option for PANA Authentication Agent has the format shown in Fig. 1.

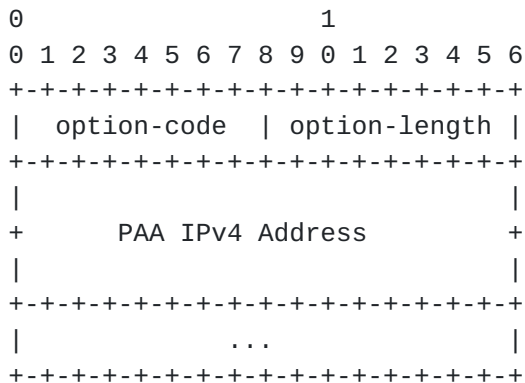


Figure 1: PAA DHCPv4 option

option-code: OPTION_PANA_AGENT (TBD)

option-length: Length of the 'options' field in octets;
 MUST be a multiple of four (4)

PAA IPv4 Address: IPv4 address of a PAA for the client to use;
 The PAAs are listed in the order of preference
 for use by the client.

A DHCPv4 client requests the PAA DHCPv4 Option in a Parameter Request List as described in [[RFC2131](#)] and [[RFC2132](#)].

The DHCPv4 client MUST try the records in the order listed in the PAA DHCPv4 option.

5. PANA Authentication Agent DHCPv6 Option

This section defines a DHCPv6 option that carries a list of 128-bit (binary) IPv6 addresses indicating one or more PANA Authentication Agents (PAA) available to the PANA client.

The DHCPv6 option for PANA Authentication Agent has the format shown in Fig. 2.

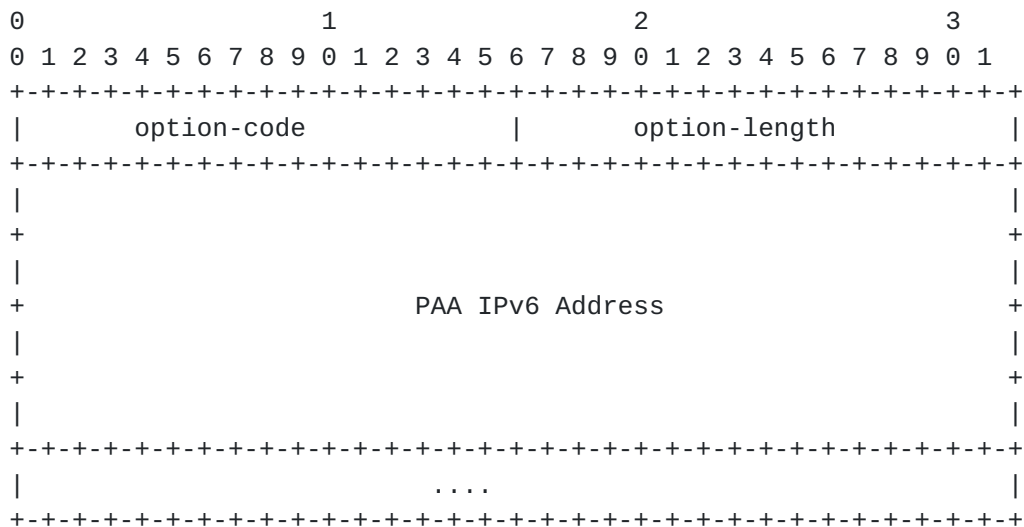


Figure 2: PAA DHCPv6 option

- option-code: OPTION_PANA_AGENT (TBD)
- option-length: Length of the 'options' field in octets;
 MUST be a multiple of sixteen (16)
- PAA IPv6 Address: IPv6 address of a PAA for the client to use;
 The PAAs are listed in the order of preference
 for use by the client.

A DHCPv6 client requests the PAA DHCPv6 option in an Options Request Option (ORO) as described in the DHCPv6 specification [[RFC3315](#)].

The DHCPv6 client MUST try the records in the order listed in the PAA DHCPv6 option.

6. IANA Considerations

The following DHCPv4 option code for PANA Authentication Agent option MUST be assigned by IANA:

Option Name	Value	Described in
OPTION_PANA_AGENT	TBD	Section 4

The following DHCPv6 option code for PANA Authentication Agent options MUST be assigned by IANA:

Option Name	Value	Described in
OPTION_PAA_AGENT	TBD	Section 5

7. Security Considerations

The security considerations in [[RFC2131](#)], [[RFC2132](#)] and [[RFC3315](#)] apply. If an adversary manages to modify the response from a DHCP server or insert its own response, a PANA Client could be led to contact a rogue PANA Agent, possibly one that then intercepts call requests or denies service.

8. Acknowledgements

Thanks to Ralph Droms, Stig Venaas, Ted Lemon, Andre Kostur, Bernie Volz, Soohong Daniel Park and Yoshihiro Ohba for their valuable comments.

9. References

9.1. Normative References

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9.2. Informative References

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