

RADIUS Delegated-IPv6-Prefix Attribute
draft-salowey-radext-delegated-prefix-01.txt

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Abstract

The Delegated-IPv6-Prefix attribute indicates an IPv6 prefix that is to be delegated to the user.

1. Introduction

The Delegated-IPv6-Prefix indicates an IPv6 prefix to be delegated to the user. For example, the prefix in a Delegated-IPv6-Prefix attribute can be delegated to another node through DHCP Prefix

Delegation [2]. This is different from the usage of Framed-IPv6-Prefix attribute in which the prefix remains in control of the Network Access Server (NAS). The prefix in the Framed-IPv6-Prefix attribute can be assigned to a link to which the NAS is attached, and may subsequently be advertised through Router Advertisement messages [3].

The Delegated-IPv6-Prefix MAY be used in Access-Accept packets, and can appear multiple times. It MAY be used in an Access-Request packet as a hint by the NAS to the server that it would prefer these prefix(es), but the server is not required to honor the hint.

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 [RFC 2119](#) [4].

3. Attribute format

The format of the Delegated-IPv6-Prefix 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 2 3 4 5 6 7 8 9 0 1
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|   Type   |   Length   | Reserved   | Prefix-Length |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
                        Prefix
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
                        Prefix
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
                        Prefix
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
                        Prefix
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+

```

Type

TBD for Delegated-IPv6-Prefix

Length

At least 4 and no larger than 20

Reserved

Always set to zero

Prefix-Length

The length of the prefix, in bits. At least 0 and no larger than 128

Note that the prefix field is only required to be long enough to hold the prefix bits and can be shorter than 16 bytes. Any bits in the prefix field that are not part of the prefix MUST be zero.

The definition of the Delegated-IPv6-Prefix Attribute is based on the Framed-IPv6-Prefix attribute.

The following table describes which messages the Delegated-IPv6-Prefix attribute can appear in and in what quantity.

Request	Accept	Challenge	Reject	Accounting Request	#	Attribute
0+	0+	0	0	0+	TBD	Delegated-IPv6-Prefix

In this table 0 indicates that an attribute MUST NOT be present in the packet and 0+ means that zero or more instances of this attribute MAY be present in packet.

4. IANA Considerations

IANA is requested to assign a Type value, TBD, for this attribute from the RADIUS Types registry.

5. Security Considerations

Known security vulnerabilities of the RADIUS protocol are discussed in [RFC 2607](#) [5], [RFC 2865](#) [6] and [RFC 2869](#) [7]. Use of IP SEC [8] for providing security when RADIUS is carried in IPv6 is discussed in [RFC 3162](#) [1].

6. Normative References

- [1] Aboba, B., Zorn, G., and D. Mitton, "RADIUS and IPv6", [RFC 3162](#), August 2001.
- [2] Troan, O. and R. Droms, "IPv6 Prefix Options for Dynamic Host Configuration Protocol (DHCP) version 6", [RFC 3633](#), December 2003.

- [3] Narten, T., Nordmark, E., and W. Simpson, "Neighbor Discovery for IP Version 6 (IPv6)", [RFC 2461](#), December 1998.
- [4] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [5] Aboba, B. and J. Vollbrecht, "Proxy Chaining and Policy Implementation in Roaming", [RFC 2607](#), June 1999.
- [6] Rigney, C., Willens, S., Rubens, A., and W. Simpson, "Remote Authentication Dial In User Service (RADIUS)", [RFC 2865](#), June 2000.
- [7] Rigney, C., Willats, W., and P. Calhoun, "RADIUS Extensions", [RFC 2869](#), June 2000.
- [8] Kent, S. and R. Atkinson, "Security Architecture for the Internet Protocol", [RFC 2401](#), November 1998.

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