

PPPEXT Working Group
INTERNET-DRAFT
Category: Standards Track
<[draft-aboba-pppext-eap-vendor-01.txt](#)>
[24](#) February 2002
Updates: RFC [2284](#)

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The Vendor-Specific EAP Method

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Abstract

This document defines a Vendor-Specific Method for the Extensible Authentication Protocol (EAP), defined in [RFC 2284](#).

[1](#). Introduction

The Extensible Authentication Protocol (EAP), defined in [[RFC2284](#)] is a general protocol for authentication which supports multiple authentication mechanisms. EAP may be used on dedicated links as well as switched circuits, and wired as well as wireless links.

To date, EAP has been implemented with hosts and routers that connect via switched circuits or dial-up lines using PPP [[RFC1661](#)]. It also also been implemented with switches and wireless access points [[IEEE80211](#)]

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over IEEE 802 local area networks [[IEEE802](#)] implementing IEEE 802.1X [[IEEE8021X](#)].

Due to EAP's popularity, the original Method Type space, which only provides for 255 values, is being allocated at a pace, which if continued, would result in exhaustion within a few years. Since many of the existing uses of EAP are vendor-specific, the Vendor-Specific Method Type is available to allow vendors to support their own extended Types not suitable for general usage. The Vendor-specific Type may also be used to expand the global Method Type space beyond the original 255 values.

[1.1](#). 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](#)].

[2](#). EAP Vendor Specific Method

Description

This Method Type is available to allow vendors to support their own extended Types not suitable for general usage. The Vendor-specific Type may also be used to expand the global Method Type space beyond the original 255 values.

Peers not equipped to interpret the vendor-specific information sent by an authenticator MUST send a NAK, and negotiate a more suitable authentication method.

A summary of the Vendor-specific Type format is shown below. The fields are transmitted from left to right.

```

      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      |      Vendor-Id      |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+

```

Type

255 for Vendor-specific

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Vendor-Id

The Vendor-Id is 3 octets and represents the SMI Network Management Private Enterprise Code of the Vendor in network byte order, as allocated by IANA. A Vendor-Id of zero is reserved for use by the IETF in providing an expanded global EAP Type space.

String

The String field is one or more octets. The actual format of the information is site or application specific, and a robust implementation SHOULD support the field as undistinguished octets.

The codification of the range of allowed usage of this field is outside the scope of this specification.

It SHOULD be encoded as follows. The Vendor-Specific field is dependent on the vendor's definition of that attribute. An example encoding of the Vendor-Specific attribute using this method follows.

Example Implementation

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										Vendor-Id																													
										Vendor-Type																													
										Vendor-Specific...																													

Vendor-Type

The Vendor-Type field is four octets and represents the vendor-

specific Method Type. Where a Vendor-Id of zero is present, the Vendor-Type field provides an expanded global EAP Type space, beginning with EAP Type values of 256.

Vendor-Specific

The Vendor-Specific field is dependent on the vendor's definition of that attribute. Where a Vendor-Id of zero is present, the Vendor-Specific field will be used for transporting the contents of EAP Methods of Types 256 or greater.

[3.](#) IANA Considerations

This document requires allocation of EAP Method Type 255 for vendor-specific use.

[4.](#) Normative references

[RFC1661]

Simpson, W., "The Point-to-Point Protocol (PPP)", STD 51, [RFC 1661](#), July 1994.

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Alvestrand, H. and Narten, T., "Guidelines for Writing an IANA Considerations Section in RFCs", [BCP 26](#), [RFC 2434](#), October 1998.

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Blunk, L., Vollbrecht, J., "PPP Extensible Authentication Protocol (EAP)", [RFC 2284](#), March 1998.

[IEEE802]

IEEE Standards for Local and Metropolitan Area Networks: Overview and Architecture, ANSI/IEEE Std 802, 1990.

[IEEE80211]

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(MAC) and Physical Layer (PHY) Specifications, IEEE Std.
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[IEEE8021X]

IEEE Standards for Local and Metropolitan Area Networks: Port based
Network Access Control, IEEE Std 802.1X-2001, June 2001.

5. Security Considerations

Since support for the Vendor-specific type is optional, it cannot be
used to support methods whose use is mandatory in a given situation. As
a result, EAP methods that are expected to find common use should be
allocated Method Types of 254 or less.

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Acknowledgments

Thanks to John Vollbrecht of Interlink Networks and Tim Moore of
Microsoft for discussions relating to this document.

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Expiration Date

This memo is filed as <[draft-aboba-pppext-eap-vendor-01.txt](#)>, and expires August 19, 2002.