An X.509 Extension for Manufacturer Usage Description URI
draft-lear-ietf-pkix-mud-extension-00

Abstract

Manufacturer User Descriptions are used by device manufacturers to provide indications to the network as to the intended use of a particular device and with what end points it might communicate. A URI points to those descriptions. This memo specifies an X.509 certificate extension to specify that URI in a device certificate to be used with IEEE 802.1AR.

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1. Introduction

[I-D.lear-mud-framework] introduces the concept of manufacturer usage description. In other documents, DHCP is used to identify a URI that network systems can use to retrieve YANG-based XML that advises the network on appropriate usage of a device.

Use of DHCP as a means of transmission may not be appropriate for all use cases, particularly for devices intended for use in critical environments. The IEEE has developed [IEEE8021AR] that provides a certificate-based approach to communicate device characteristics, which itself relies on [RFC5280].

This document specifies an X.509 extension so that such MUD URI may be communicated via 802.1AR. The MUD URI extension is non-critical, as required by IEEE 802.1AR.

2. The Manufacturer Usage Description (MUD) URI Extension

[RFC7299] provides a procedure and means to specify extensions to X.509 certificates. The object identifier (OID) for extensions is as follows:

- PKIX certificate extensions id-pe OBJECT IDENTIFIER ::= { id-pkix 1 }

The choice of id-pe is based on guidance found in Section 4.2.2 of [RFC5280]:

These extensions may be used to direct applications to on-line information about the issuer or the subject.
The MUD URI is precisely that: online information about the particular subject.

The new extension is identified as follows:

- The MUD URI extension id-pe-mud-uri OBJECT IDENTIFIER ::= { id-pe TBD }

The extension returns a single value:

mud-uri ::= uniformResourceIdentifier - for use with mud architecture.

The semantics of the URI are defined [I-D.lear-ietf-netmod-mud].

3. Security Considerations

This document specifies a certificate extension to communicate a Manufacturer Usage Description URI. The semantics of the URI are defined in draft-lear-ietf-netmod-mud. At this time, no security concerns are visible to the author for inclusion of such an extension.

4. IANA Considerations

The IANA is requested to assign a value for id-pe-mud-uri in the "SMI Security for PKIX Certificate Extension" Registry.

5. Acknowledgments

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6. References

6.1. Normative References


6.2. Informative References

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