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M. Mealling
Verisign
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A URN Namespace of Object Identifiers

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Abstract

This document describes a Uniform Resource Name (URN) namespace that contains Object Identifiers (OIDs). It obsoletes RFC 3001.

1. Introduction

An Object Identifier is a tree of nodes where each node is simply a sequence of digits. The rules roughly state that once an entity is assigned a node in the Object Identifier (OID) tree, it has sole discretion to further subdelegate sub-trees off of that node. Some examples of OIDs include:

- o 1.3.6.1 - the Internet OID
- o 1.3.6.1.4.1 - IANA-assigned company OIDs, used for private MIBs and such things
- o 1.3.6.1.2.1.27 - The Applications MIB
- o 0.9.2342.19200300.100.4 - Object ID's used in the directory pilot project to identify X.500 Object Classes. Mostly defined in RFC 1274.

This document specifies the "oid" URN namespace [2]. This namespace is for encoding an Object Identifier as specified in ASN.1 [3] as a URI. RFC 3001 [1] is obsoleted by this specification.

The namespace specification is for a formal namespace.

2. Specification Template

Namespace ID:

"oid" requested.

Registration Information:

Registration Version Number: 1
Registration Date: 2000-04-30

Declared registrant of the namespace:

The ISO/IEC Joint Technical Committee 1 - Subcommittee 6

The real authority is the ASN.1 specification itself but SC6 is the committee that has the authority to interpret what that means, thus that committee is listed as the registrant.

Declaration of structure:

The NSS portion of the identifier is based on the string encoding rules found in RFC 1778 Section 2.15 [4] which specifies a series of digits separated by a period with the most significant digit being at the left and the least significant being at the right. At no time shall the NSS portion of the URN contain the human readable description of a particular node in the OID tree. The NSS portion of the name is strictly limited to the digits 0-9 and the '.' character with no leading zeros. No other characters are permitted. This is all expressed in the following ABNF:

```
oid           = number *( DOT number )
number        = DIGIT / ( LEADDIGIT 1*DIGIT )
LEADDIGIT     = %x31-39 ; 1-9
DIGIT         = %x30 / LEADDIGIT ; 0-9
DOT           = %x2E ; period
```

No changes are anticipated since Object Identifiers are fairly simple and have been standardized with no changes for many years.

Relevant ancillary documentation:

Relevant documentation can be found in X.660/Amd 2 | ISO/IEC 9834-1/Amd 2[3].

Identifier uniqueness considerations:

The rules for assignment of OIDs requires that each OID be unique to the OID space and that it cannot be reassigned or reused. By reference this URN namespace inherits those rules.

Identifier persistence considerations:

The rules concerning the use of OIDs requires that they not be reused once assigned. By reference this URN namespace inherits those rules.

Process of identifier assignment:

Once an OID is assigned to some entity, that entity can then create and assign new OIDs below that particular OID. There are multiple entities that assign new OIDs to the general public. The top three levels are pre-assigned as follows:

- 0 - ITU-T assigned
- 1 - ISO assigned
- 2 - Joint ISO/ITU-T assignment

several assigned OIDs that are of importance to the Internet are:

- 1.3.6.1 - the Internet OID
- 1.3.6.1.4.1 - IANA-assigned company OIDs, used for private MIBs and such things

Process of identifier resolution:

At this time no resolution mechanism is defined.

Rules for Lexical Equivalence:

OIDs are composed of multiple occurrences of digits and the "." character. Lexical equivalence is achieved by exact string match.

Conformance with URN Syntax:

There are no additional characters reserved.

Validation mechanism:

None.

Scope:

Global

3. Examples

The following examples are taken from the example OIDs from the Introduction:

```
urn:oid:1.3.6.1
urn:oid:1.3.6.1.4.1
urn:oid:1.3.6.1.2.1.27
URN:OID:0.9.2342.19200300.100.4
```

4. Security Considerations

None not already inherent to using unverifiable OIDs.

5. Acknowledgements

The author would like to thank Harald Alvestrand for the use of his OID database as a source for examples and references.

References

- [1] Mealling, M., "A URN Namespace of Object Identifiers", RFC 3001, November 2000.
- [2] Moats, R., "URN Syntax", RFC 2141, May 1997.
- [3] CCITT, "Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1)", CCITT Recommendation X.209, January 1988.
- [4] Howes, T., Kille, S., Yeong, W. and C. Robbins, "The String Representation of Standard Attribute Syntaxes", RFC 1778, March 1995.

Author's Address

Michael Mealling
Verisign
505 Huntmar Park Drive
Herndon, VA 22070
US

Phone: +1 770 935 5492
EMail: michaelm@netsol.com
URI: <http://www.netsol.com>

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