Private Enterprise Number (PEN) practices and Internet Assigned Numbers Authority (IANA) considerations for registration procedures

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Abstract

Private Enterprise Numbers (PENs), are assigned as part of the technical protocol parameters and are frequently used in the management of network connected equipment or software via SNMP-based network management systems, LDAP, DIAMETER or GSS-API. This document discusses what a Private Enterprise Number (PEN) is, common uses and registration procedures for IANA Considerations. The registration procedures include instructions and requirement for obtaining a new Private Enterprise Number, modification to existing numbers and removal of existing numbers.

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1. Introduction

A Private Enterprise Number (PEN, prefix: iso.org.dod.internet.private.enterprise (1.3.6.1.4.1)) is a subtree of Object Identifiers of the data structure of SMI as defined in [RFC1065]. PEN is a non-negative integer that can be used to reference an organization ("enterprise") in protocols that require numeric values instead of a human readable organization name.

Currently, the assignment procedures for assignment of new PENs and the modification of existing PENs is not clearly documented. Private Enterprise Numbers are referenced in RFCs [RFC1157] [RFC1213] and [RFC2578]. These documents mostly define Simple Network Management Protocol (SNMP), Management Information Base (MIB), and Structure of Management Information (SMI). However, none of the above mentioned RFCs clearly describe PENs and define the registration procedures.

Additionally, updates to existing Private Enterprise Numbers can also be problematic resulting from the lack of clear registration requirements. Furthermore, modification requests can be hardly validated in cases like companies change names and/or legal ownerships, a product was sold to another company, email addresses of existing assignments were not coming from the original companies, etc.

This purpose of this document is to describe the basics of PENs, how they are most commonly used and define the registration and update procedures.

2. Example of use for Private Enterprise Numbers

PENs, are frequently embedded in OIDs (Object Identifiers), which are often used in Simple Network Management Protocol (SNMP) Management Information Base (MIB) configurations but PENs are designed to be used by multiple protocols and DMLs. These include:

Distinguished Names and other components in X.509 certificates;

Various schema elements in X.500/LDAP directories;

GSS-API

extensions to DIAMETER

PA-TNC [RFC5792] and PB-TNC [RFC5793]

Various healthcare related standards, including HL7.
3. Who can get a Private Enterprise Number?

Private Enterprise Numbers (PENs) are assigned through First Come First Served registration policy as described in [RFC5226]. A new request can be submitted to IANA by individuals or organizations for obtaining a unique value with a little required information that includes the organization name (or the name of an individual), contact name, and e-mail address. In some cases, users submit a program name, product, project, and random abbreviation as the organization name to apply for a new registration. However this should be discouraged since the program name is not and should not be considered as the name of the Registrant (Company/Organization) Name as described in Section 7.

In other instances, applicants insist that new requests are subsidiaries of some groups but the subsidiaries are completely independent of the parent groups. The subsidiaries are located in different locations and countries from the parent companies and such the subsidiaries cannot use existing allocations. However, this does not contribute to new allocations as the global companies shall be able to create sub-trees and to allocate the sub-numbers globally. IANA does not further allocate new numbers to companies that are subsidiaries of existing registrations.

Further, joint ventures of business enterprises may request new allocations if the joint ventures are considered new legal bodies. Open resource forums may request new allocations under the registration requirement as describe in Section 7. Individuals may requests new allocations under the registration requirement as describe in Section 7.

4. Other useful things to know

As some examples documented on Wikipedia, the most common OIDs seen "in the wild" usually belong to the private enterprise numbers allocated by IANA under the 1.3.6.1.4.1 (iso.org.dod.internet.private.enterprise) arc. Increasingly used form of OID is in the area of health care and public health informatics in the United States. Health Level Seven (HL7), a standards-developing organization in the area of electronic health care data exchange, is an assigning authority at the 2.16.840.1.113883 (joint-iso-itu-t.country.us.organization.hl7) node.

Important to note that PENs are not always representing manufacturer ID or Vendor ID.

Additional sub-trees of the existing arc
iso.org.dod.internet.private.enterprise.<PEN> can be created by an administrator of the arc when the Registrant (Company) needs additional OIDs. In such cases there is no need to request multiple PENs. Note that IANA does not manage allocations of sub-OIDs below a iso.org.dod.internet.private.enterprise.<PEN> OID, so it doesn’t need to be notified about suballocations.

The owner of a Private Enterprise Number can append any number of numbers at the end (i.e. to perform its own sub-allocations). For example, for LDAP, one can use:

iso.org.dod.internet.private.enterprise.<PEN>.1 for LDAP Object Classes

iso.org.dod.internet.private.enterprise.<PEN>.2 for LDAP attribute types

iso.org.dod.internet.private.enterprise.<PEN>.3 for LDAP syntaxes

A particular Object class can have OID:

iso.org.dod.internet.private.enterprise.<PEN>.1.100

iso.org.dod.internet.private.enterprise.<PEN>.1.200 for subsidiaries an/or divisions

But in general any number of additional levels are permitted, for example:

iso.org.dod.internet.private.enterprise.<PEN>.1.1 can be used as a parent OID for all email related object classes, and

iso.org.dod.internet.private.enterprise.<PEN>.1.2 can be used for web related object classes, etc.

5. Syntax for Private Enterprise Numbers

Valid information for the Registrant (Company/Organization) Name for registrations are hereby normatively defined as follows:

o MUST NOT begin or end with a hyphen

o MUST NOT be a string consisting entirely of numbers

o Maximum value for PENs is hereby defined within 2**32-1 with 0 and 0xFFFFFF (in hex) marked as Reserved.
6. Acknowledgements

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7. IANA Considerations

7.1. New Private Enterprise Numbers

New Private Enterprise Numbers are assigned on a First Come First Served basis [RFC5226] and are assigned sequentially. There is no opportunity to request a particular private enterprise number. The requester can submit an online application form. Information to be included:

Registrant (Company/Organization) Name (REQUIRED)
Registrant (Company/Organization) E-mail Address (REQUIRED)
Registrant Postal Address (REQUIRED)
Registrant Phone Number (Optional)
Registrant Fax Number (OPTIONAL)
Contact Name (REQUIRED)
Contact E-mail Address (REQUIRED)
Contact Postal Address (OPTIONAL)
Contact Phone Number (OPTIONAL)
Reference (OPTIONAL)

Registrant (Company/Organization) Name: The name of the organization or individual responsible for the registration of Private Enterprise Number. If the organization is a company, it should be the full legal name including "Inc.", "Ltd.", etc.
Registrant (Company/Organization) E-mail Address: The e-mail address of the organization that requests the PEN. This e-mail address will be publicly available in the IANA PEN Registry. The E-mail address should be a valid email address and can be a role account e-mail address.

Registrant Postal Address: The full postal address of the organization/individual requesting the PEN, including state/province, zip/postal code, country, etc.

Registrant Phone: The main telephone number of the organization/individual requesting the PEN, including the country code.

Registrant Fax Number: The facsimile number of the organization/individual responsible for the PEN, including the country code.

Contact Name: The full name of the individual who will be responsible for the PEN on behalf of the company.

Contact Postal Address: The full postal address of the individual responsible for the PEN, including state/province, zip/postal code, country, etc.

Contact Phone: The telephone number (with extension where appropriate) of the individual responsible for the PEN, including country code.

Contact E-Mail Address: The e-mail address of the individual responsible for the PEN. This e-mail address will be publicly available in the IANA PEN Registry. The Contact E-mail Address can be the same one as the Registrant’s E-mail address.

Reference: A document associated with the implementation of the OID can be referenced with the registration.

It is recommended that a single PEN is granted per organization. IANA does not expect to allocate additional PENs to the same Registrants (Companies/Organizations) that have existing PEN records listed in the IANA PEN registry.

7.2. Modification of Private Enterprise Numbers

Modification of existing Private Enterprise Numbers:

Registrant (Company/Organization) Name can never be changed. However if the Company/Organization has been merged or acquired by another enterprise, the Registrant Name can be annotated in the registry with the new owner. Note that such annotations would require emails from
the both existing Contact and proposed Contact, and, if it deems to be necessary, official letters from the existing owner (if applicable) to provide proofs of the changes to IANA. If either the existing owner or Contact is obsoleted, an official letter from the proposed Registrant (Company/Organization) Name will be required and be supplied to IANA for verifications. Additional documentations will be required subject to the conditions of the changes of the numbers in questions. It is not guarantee that the request will be granted if IANA does not have sufficient information to verify the changes, or if there is legacy use of the PEN out in the wild.

All information associated with existing PEN records, excluding the Registrant (Company/Organization) Name, shall be updated if the information is obsoleted. (See the preceding section to update the Registrant (Company/Organization) Name.) A request to update Contact information associated with an existing PEN record shall be submitted to IANA using an online submission. Requests can only be fulfilled upon verification by IANA and/or subject matter experts. Additional documentations will be required if it deems to be necessary to validate the request.

A change to the Contact Name of existing PEN records can be made to IANA in case of personnel changes, change of employment, acquisitions, etc. It would be ideal that new requests shall be completed by the existing Contacts for the PEN records. E-mail verifications of the requested changes are required. Alternatively, supplemental documentations and/or letters issued by the Company/ Organization (Registrant Name) will be required if E-mail verifications cannot be fulfilled and if it deems to be necessary.

Letters and documentations can be in forms of e-documents, PDF, fax however feasible to the applicants. The documents can be supplied to IANA via an email message or in facsimile.

Requests can only be fulfilled upon verification by IANA and/or subject matter experts if it deems to be necessary.

7.3. Removals of Private Enterprise Numbers

Such request does not happen often and regularly.

Considering the fact that there might be legacy uses by an existing allocation, it is NOT recommended to remove the registration.

A Contact Name can request to remove the corresponding Contact information if the company is no longer in operation, the Contact does not wish to be listed in the IANA PEN registry and if the PEN is no longer believed to be in use. The Modification procedure
described above SHOULD be followed.

Requests can only be fulfilled upon verification by IANA and/or subject matter experts if it deems to be necessary.

IF the removal request is honoured, the entry is marked as "Reserved" and annotated as "returned on yyyy-mm-dd by xxxxxxxx". A future update to this document can allow IANA to reallocate such returned PEN, however this document doesn’t allow for that.

8. Security Considerations

See the Security Considerations section in BCP 26 [RFC5226], and note that improper definition and application of IANA registration policies can introduce both interoperability and security issues. It is critical that registration policies be considered carefully and separately for each registry. Overly restrictive policies can result in the lack of registration of code points and parameters that need to be registered, while overly permissive policies can result in inappropriate registrations. Striking the right balance is an important part of document development.

9. References

9.1. Normative References


9.2. Informative References


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Authors’ Addresses

Pearl Liang
ICANN
4676 Admiralty Way Suite 330
Marina del Rey, CA  90232-6601
USA

Email: pearl.liang@icann.org

Alexey Melnikov
Isode Ltd
5 Castle Business Village
36 Station Road
Hampton, Middlesex  TW12 2BX
UK

Email: Alexey.Melnikov@isode.com