

Internet Engineering Task Force  
Internet-Draft  
Intended status: Informational  
Expires: 23 May 2022

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19 November 2021

YANG-CBOR: Allocating SID ranges for PEN holders  
draft-bormann-core-yang-sid-pen-01

## Abstract

YANG-CBOR, RFC XXXX ([draft-ietf-core-yang-cbor](#)) defines YANG Schema Item iDentifiers (YANG SID), globally unique 63-bit unsigned integers used to identify YANG items. RFC YYYY ([draft-ietf-core-sid](#)) defines ways to allocate these SIDs on the basis of IANA registries.

The present specification uses these SID allocation mechanisms to allocate 100 000 SIDs for each of the first 1 000 000 holders of IANA-registered Private Enterprise Numbers (PENs).

## Discussion Venues

This note is to be removed before publishing as an RFC.

Discussion of this document takes place on the CoRE Working Group mailing list (<mailto:core@ietf.org>), which is archived at <https://mailarchive.ietf.org/arch/browse/core/>.

Source for this draft and an issue tracker can be found at <https://github.com/cabo/sid-pen>.

## Status of This Memo

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[1.](#) Introduction

YANG-CBOR, RFC XXXX ([draft-ietf-core-yang-cbor](#)) defines YANG Schema Item identifiers (YANG SID), globally unique 63-bit unsigned integers used to identify YANG items. RFC YYYY ([draft-ietf-core-sid](#)) defines ways to allocate these SIDs on the basis of IANA registries.

The present specification uses these SID allocation mechanisms to allocate 100 000 SIDs for each of the first 1 000 000 holders of IANA-registered Private Enterprise Numbers (PENs).

We allocate 100 000 mega-ranges, for the SID numbers 300 000 000 000 to 399 999 999 999.

The holder of a PEN ppp ppp then can use the SID numbers 3pp ppp p00 000 to 3pp ppp p99 999 for allocation in a scheme defined by the holder.

## 2. Example

The Department for Mathematics and Computer Science of Universität Bremen holds PEN 30810.

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This confers control over the SID range 303 081 000 000 up to 303 081 099 999 to this PEN holder.

## 3. Discussion

This allocation provides an extremely-low-threshold way for PEN holders to get number space for the YANG SIDs used in their YANG modules. It is, however, not always the approach to recommend to a module author:

- \* The space uses 64-bit numbers. While this is of relatively little consequence due to the delta-encoding used for SIDs in YANG-CBOR, a few further bytes can be saved by allocating the SIDs in one of the mega-ranges that are specifically allocated by an organization (which, for the first 2000 or so, will lead to 32-bit outer deltas).
- \* This space has no infrastructure to discover the YANG module behind a SID. Of course, each PEN holder can provide such infrastructure, but even then the problem remains how to find that infrastructure for a SID. (Search engines may mitigate this somewhat.) On the other hand, relative obscurity may be exactly what a PEN holder wants to achieve by using this mechanism.

Relying on the PEN registry might theoretically trigger a land-grab by prospective writers of YANG modules. However, PENs have been around for decades [[RFC1065](#)] and such a land-grab hasn't occurred for the other allocations implicitly provided by obtaining a PEN.

## 4. IANA Considerations

This document allocates 100 000 SID mega-ranges as per Section 7.4 of [[I-D.ietf-core-sid](#)].

The contact for the allocation is: IETF CORE Working Group (core@ietf.org) or IETF Applications and Real-Time Area

(art@ietf.org)

The allocation policy inside the mega-range is "private". The URL is that of the present specification.

The management of the SID blocks of 100 000 SIDs each, 10 such blocks for each mega-range 3nn nnn 000 000, is delegated to the PEN holder for nnn nnx, where x is the sequence number of the SID block in the mega-range (i.e., the PEN holder for nnn nnx controls SID 3nn nnn x00 000 to 3nn nnn x99 999).

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The technical capacity to ensure the sustained operation of the registry for a period of at least 10 years (as required for registries of class "private") is derived from the capacity of IANA to maintain the PEN number registry.

## [5.](#) References

### [5.1.](#) Normative References

[I-D.ietf-core-sid]

Veillette, M., Pelov, A., Petrov, I., Bormann, C., and M. Richardson, "YANG Schema Item iDentifier (YANG SID)", Work in Progress, Internet-Draft, [draft-ietf-core-sid-18](#), 18 November 2021, <<https://www.ietf.org/archive/id/draft-ietf-core-sid-18.txt>>.

[I-D.ietf-core-yang-cbor]

Veillette, M., Petrov, I., Pelov, A., Bormann, C., and M. Richardson, "CBOR Encoding of Data Modeled with YANG", Work in Progress, Internet-Draft, [draft-ietf-core-yang-cbor-17](#), 25 October 2021, <<https://www.ietf.org/archive/id/draft-ietf-core-yang-cbor-17.txt>>.

### [5.2.](#) Informative References

[RFC1065] McCloghrie, K. and M. Rose, "Structure and identification of management information for TCP/IP-based internets", [RFC 1065](#), DOI 10.17487/RFC1065, August 1988,

<<https://www.rfc-editor.org/info/rfc1065>>.

## Acknowledgments

This document was inspired by the discussion of the authors of [[I-D.ietf-core-yang-cbor](#)] and [[I-D.ietf-core-sid](#)] how to handle Rob Wilton's feedback.

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