

SenML Features and Versions

draft-bormann-core-senml-versions-01

Carsten Bormann

IETF 107+, 2020-04-08, in the cloud

RFC 8428, SenML: Version 10

- RFC 8428 SenML evolution path: allows for version upgrade
- Default version: 10 (accounting for previous development versions)
- Can set higher: {"bver":11, "v":4711}
- Semantics to be defined by RFC updating RFC 8428

Objective: extensibility

- Over time, new specifications will add features to SenML
- Version number is a unitary declaration:
implementation of certain features is needed by the receiver to process SenML pack
- Version number $N+1$ includes all features of version number N (total order)
 - Except for features that are **deprecated**

Version numbers are stupid

- Well, they work well for document revisions and software releases
- Not so great for protocols and other interface specifications
- Long discussion in T2TRG:
Version numbers force creating a total order on a set of new features
- Better: declare individual features
 - Could do with must-understand fields: `bfeature1_:` `true`
 - But maybe can leverage the version number?

Proposal: interpret version number as bits

- A number can be used as a bit array
- Version 10 = 1010_2 , i.e. features 1 and 3 ($2^1 + 2^3 = 10$)
- Add bits for additional features
- Proposed feature 4: use of Secondary Units ($2^4 = 16$)
Version number with that additional feature would thus be 26
- Feature code can go up to 52 (53-bit integers in JSON):
48 remaining now (after secondary unfits)

53: wasn't that an evil number?

- Yes.
- But it could be all we need:
 - As the number of features that can be registered has a hard limit (48 codes left at the time of writing), the designated expert is specifically instructed to maintain a frugal regime of code point allocation, keeping code points available for SenML Features that are likely to be useful for non-trivial subsets of the SenML ecosystem.
 - Quantitatively, the expert could for instance steer the allocation to not allocate more than 10 % of the remaining set per year.

draft-bormann-core-senml-versions-01

- Defines the feature system:
 - New Registry under the SenML registry
 - Reserving feature code 0..3 for “10 = 1010₂”
 - Specification required, frugality mandate to designated expert
- **Updates** the RFC 8428 version number to use that system
- Registers feature code 4: Use of secondary units
- Useful?
- Ready for working group adoption?