SenML Features and Versions

draft-bormann-core-senml-versions-01

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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 = 1010₂, i.e. features 1 and 3 (2¹ + 2³ = 10)
• Add bits for additional features
• Proposed feature 4: use of Secondary Units (2⁴ = 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 unfit)
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.
• 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?