

UUID Doc Revision

draft-ietf-uuidrev-rfc4122bis-00

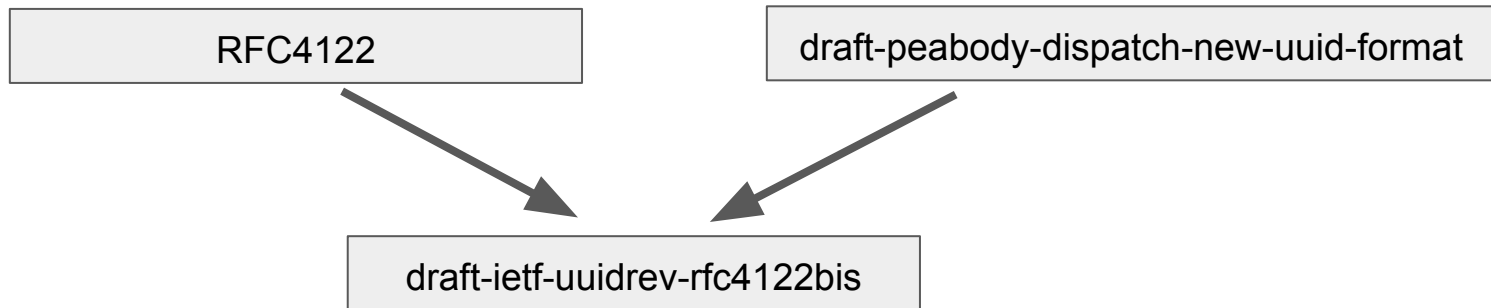
UUIDREV IETF 115

Summary

- New Doc replacing RFC4122
- Fixing Errata
- New Table of Contents
 - Better clarification on versions 3/4/5
 - Addition of UUIDv6/7/8/Max from Peabody Draft 04
 - Better Test Vectors
 - More Implementation Best Practices
- Better clarify UUIDv3/4/5
- General Doc Update Housekeeping
- Looking forward to Draft 01

The story thus far...

- Work until this point was performed under draft-peabody-dispatch-new-uuid-format-04
 - This Draft added UUIDv6/7/8, Max and many implementation best practices missing from 4122.
- At IETF 114 it was decided to officially adopt this work under a new working group: uuidrev
- It was also decided to merge the work of Peabody Draft 04 with RFC4122 into a new doc:
 - draft-ietf-uuidrev-rfc4122bis
- In addition to this, we must address all erata on RFC4122



New Table of Contents (TOC)

- RFC4122 layout and TOC leaves much to be desired
- During Draft 03 of Peabody document we decided to overhaul the TOC
 - Promote readability
 - Provide Better Grouping of related/need-to-know information
- **New TOC (High Level Groupings)**
 - Introductions/IETF required language
 - UUID Formatting
 - UUID Layouts
 - UUID Best Practices
 - Misc. IETF Considerations
 - References
 - Appendix. Code
 - Appendix. Test Vectors
- Feedback from around the web liked this new TOC format
- Note: “Algorithms to create UUID” was also removed in favor of defining “implementation best practices”

Fixing RFC4122 Errata

- 13 Errata filed against RF4122 which mostly fall into 2 categories:
- Grammar:
 - 6665, 6225, 3641, 3476, 1428, 1352, 184
 - Easy to fix
- Endian and Bit Layout Clarifications:
 - 5560, 4976, 4975, 3970, 3546, 1957
 - Harder to fix but my attempt:
 - Better defining layouts for each version.
 - Further clarification at the start of the document about bit, byte order and numbering
 - Consistent language: Big Endian, Most Significant Bits, “Left-most”
 - More examples via test vectors which show the data in ways other than “large walls of text”

Give v3/4/5 more love

- UUIDv1 is the “starting point” for all discussions about v3/4/5
- Their layouts and algos all reference UUIDv1 logic
- This is confusing and leads many issues
- Solution:
 - Decouple these from UUIDv1
 - UUIDv3/4/5 each get their own block layout with individual field descriptions
 - Group together what we know in best practices sections (after review of many v3/5 libraries)
 - Provide better test vectors
 - Where possible, add extra clarifications glossed over by the original document

General Housekeeping

- Replaced all HTTP links with HTTPS links
- Updated all RFC references to their latest version
- Added Security considerations for SHA1 and MD5

Draft 01 Action Item - Namespaces

- **Problem:**
 - In my review of v3/5 libraries only namespaces used are those defined by RFC4122.
 - Further no text describing HOW we obtained these values in the first place
- **Action:**
 - Describe method for creating new static namespace
 - Use this to define new namespace for IOT and Databases (two very common UUID use cases)

Draft 01 Action Item - Running out of Random

- **Problem:**
 - Interim Meeting discussed some problems around “running out of random”
- **Action:**
 - Add this to relevant section when I have the full context

Draft 01 Action Item - Namespace Registration

- **Problem:**
 - IANA namespace template is from 2004/2005, old RFC for IANA namespace registration is deprecated and replaced by RFC 8141
- **Action:**
 - Update namespace template to match new format

Draft 01 Action Item - v7 and v8 small changes

- **Problem:**

- [Remove "time-based" constraint from version 8 UUID #124](#)
- [Further clarify v7 field description #125](#)

- **Action:**

- #124, no impact, removes something that should have been removed in Draft 04
- #125, adds further clarification around bit layout of v7 for Millisecond timestamp and forward reference to Counters section

Draft 01 Action Item - Variants/Families and Max UUID

- **Problem:**
 - [Reserve variant for Omni-UUID \(Max-UUID\) #16](#)
- **Action:**
 - Add better clarification in Variant table that details the Byte and where Max UUID falls in the current “Unused Variant”

Draft 01 Action Item - ISO and ITU

- **Problem:**

- Once upon a time ISO, ITU, IETF UUID specs were the same (IETF RFC4122 == ITU X.667 == ISO/IEC 9834-8:2005)
 - However, X.667 was updated in 2008 and again in 2012
 - Likewise, ISO/IEC 9834-8 was updated in 2008 and in 2014
 - RFC 4122 has never been updated since 2005

- **Questions:**

- How does IETF's RFC fit into this picture?
 - When I look at libraries I don't see anybody mention ITU/ISO specs, they clearly use RFC4122 as the main document.
 - Why did we not update when they updated?
- Who ultimately has authority to "add new UUIDs" like v6/7/8/Max.
 - If anybody, how do we ensure those two other documents are in lock-step with our update since our TOC and contents now deviate greatly?
- Should I add new text from their 2008 and 2012/2014 updates?
 - After a few reads the most significant addition would be usage of UUID for both defined OID layouts
 - I don't see a good changelog so I would need to DIFF the versions to find other data I could transpose.

Draft 01 Action Item - Standards Track

- **Problem:**
 - RFC4122 was submitted as “Proposed Standard” and never elevated to Internet Standard
- **Questions:**
 - Should we be submitting our final UUID document as internet standard to match the authority of ITU Telecommunication standard and ISO International standard?
 - <https://www.rfc-editor.org/standards>