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Concise Binary Object Representation (CBOR) Tags for Date draft-ietf-cbor-date-tag-02

Abstract

The Concise Binary Object Representation (CBOR, [RFC 7049](#)) is a data format whose design goals include the possibility of extremely small code size, fairly small message size, and extensibility without the need for version negotiation.

In CBOR, one point of extensibility is the definition of CBOR tags. [RFC 7049](#) defines two tags for time: CBOR tag 0 ([RFC 3339](#) date/time string) and tag 1 (Posix "seconds since the epoch"). Since then, additional requirements have become known. This specification defines a CBOR tag for an [RFC 3339](#) date text string, for applications needing a textual date representation without a time. It also defines a CBOR tag for days since the Posix epoch, for applications needing a numeric date representation without a time. It is intended as the reference document for the IANA registration of the CBOR tags defined.

Status of This Memo

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[1.](#) Introduction

The Concise Binary Object Representation (CBOR) [[RFC7049](#)] provides for the interchange of structured data without a requirement for a pre-agreed schema. [RFC 7049](#) defines a basic set of data types, as well as a tagging mechanism that enables extending the set of data types supported via an IANA registry.

This specification defines a CBOR tag for a text string representing a date without a time. The tagged text string is represented as specified by the [RFC 3339](#) [[RFC3339](#)] "full-date" production.

This specification also defines a CBOR tag for an integer representing a date without a time. The tagged integer is an unsigned or negative value indicating the number of days since the IEEE Std 1003.1, 2013 Edition [[POSIX.1](#)] epoch date 1970-01-01. As an implementation note, this value has a constant offset from the Modified Julian Date value (which is defined by the Smithsonian

Astrophysical Observatory as the number of days since November 17, 1858); this value is the Modified Julian Date minus 40,587.

Note that since both tags are for dates without times, time zones and leap seconds are not applicable to these values.

1.1. Requirements Notation and Conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [BCP 14](#) [[RFC2119](#)] [[RFC8174](#)] when, and only when, they appear in all capitals, as shown here.

2. IANA Considerations

2.1. Concise Binary Object Representation (CBOR) Tags Registrations

This section registers the following values in the IANA "Concise Binary Object Representation (CBOR) Tags" registry [[IANA.cbor-tags](#)].

- o Tag: 1004 (value requested)
- o Data Item: UTF-8 text string
- o Semantics: [RFC 3339](#) full-date string
- o Reference: [[this specification]]

- o Tag: 100 (ASCII 'd') (value requested)
- o Data Item: Unsigned or negative integer
- o Semantics: Number of days since the epoch date 1970-01-01
- o Reference: [[this specification]]

3. Security Considerations

The security considerations of [RFC 7049](#) apply; the tags introduced here are not expected to raise security considerations beyond those.

A date, of course, has significant security considerations; these include the exploitation of ambiguities where the date is security relevant or where the date is used in access control decisions. However, typically times will also be used when making access control decisions, rather than dates without times.

4. References

4.1. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), DOI 10.17487/RFC2119, March 1997, <<https://www.rfc-editor.org/info/rfc2119>>.
- [RFC3339] Klyne, G. and C. Newman, "Date and Time on the Internet: Timestamps", [RFC 3339](#), DOI 10.17487/RFC3339, July 2002, <<https://www.rfc-editor.org/info/rfc3339>>.
- [RFC7049] Bormann, C. and P. Hoffman, "Concise Binary Object Representation (CBOR)", [RFC 7049](#), DOI 10.17487/RFC7049, October 2013, <<https://www.rfc-editor.org/info/rfc7049>>.
- [RFC8174] Leiba, B., "Ambiguity of Uppercase vs Lowercase in [RFC 2119](#) Key Words", [BCP 14](#), [RFC 8174](#), DOI 10.17487/RFC8174, May 2017, <<https://www.rfc-editor.org/info/rfc8174>>.

4.2. Informative References

- [IANA.cbor-tags] IANA, "Concise Binary Object Representation (CBOR) Tags", <<http://www.iana.org/assignments/cbor-tags>>.
- [POSIX.1] IEEE, "The Open Group Base Specifications Issue 7", IEEE Std 1003.1, 2013 Edition, 2013, <http://pubs.opengroup.org/onlinepubs/9699919799/basedefs/V1_chap04.html#tag_04_15>.

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Document History

[[to be removed by the RFC Editor before publication as an RFC]]

-02

- o Addressed working group last call comments, including stating that time zones are not applicable to these values.

-01

- o Changed "positive or negative" to "unsigned or negative".
- o Added an implementation note about the relationship to Modified Julian Dates.

-00

- o Initial working group version based on [draft-jones-cbor-date-tag-01](#) with no normative changes.

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