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OpenID Connect Standard Claims Registration for CBOR Web Tokens
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Abstract

This document registers OpenID Connect standard claims already used in JSON Web Tokens for use in CBOR Web Tokens.

About This Document

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

The latest revision of this draft can be found at <https://ietf-wg-spice.github.io/draft-ietf-spice-oidc-cwt/#go.draft-ietf-spice-oidc-cwt.html>. Status information for this document may be found at <https://datatracker.ietf.org/doc/draft-ietf-spice-oidc-cwt/>.

Discussion of this document takes place on the Secure Patterns for Internet CrEentials Working Group mailing list (<mailto:spice@ietf.org>), which is archived at <https://mailarchive.ietf.org/arch/browse/spice/>. Subscribe at <https://www.ietf.org/mailman/listinfo/spice/>.

Source for this draft and an issue tracker can be found at <https://github.com/ietf-wg-spice/draft-ietf-spice-oidc-cwt>.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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1. Introduction

OpenID Connect [OpenID.Core] is an authentication standard including standard claims already in use for JSON Web Tokens (JWT) [RFC7519]. CBOR Web Tokens (CWT) [RFC8392] have a claims registry, but do not include most of these claims. This draft aims at unifying use of OpenID Connect claims in JWTs and CWTs.

2. Conventions and Definitions

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.

3. Address Claim

To further reduce the size of this prevalent and large claim, we register integer labels for it. We strictly map the definition of claims in Section 5.1.1 of [OpenID.Core]: all the claims are optional and "formatted" can either be used instead or in addition of all the other fields.

4. Security Considerations

This document registers existing OpenID Connect standard claims already used in JSON Web Tokens [RFC7519] for use in CBOR Web Tokens [RFC8392] without changing their semantics. The Security and Privacy Considerations respectively of Sections 16 and 17 of [OpenID.Core] also apply.

5. IANA Considerations

All claims defined in this document are placed in the (CBOR Web Token (CWT) Claims) [IANA.CWT.Claims] Registry (part of the eponymous registry group). No new IANA registry is created.

In case any of the suggested code points would have been claimed by the time the IESG approves the document for publication as an RFC, IANA is asked to assign Claim Key values from the 170-256 range.

5.1. name

Claim Name: name

Claim Description: End-User's full name in displayable form

including all name parts, possibly including titles and suffixes, ordered according to the End-User's locale and preferences.

JWT Claim Name: name
Claim Key: TBD1 (170 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.2. given_name

Claim Name: given_name
Claim Description: Given name(s) or first name(s) of the End-User.
JWT Claim Name: given_name
Claim Key: TBD2 (171 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.3. family_name

Claim Name: family_name
Claim Description: Surname(s) or last name(s) of the End-User.
JWT Claim Name: family_name
Claim Key: TBD3 (172 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.4. middle_name

Claim Name: middle_name
Claim Description: Middle name(s) of the End-User.
JWT Claim Name: middle_name
Claim Key: TBD4 (173 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.5. nickname

Claim Name: nickname
Claim Description: Casual name of the End-User that may or may not be the same as the given_name.
JWT Claim Name: nickname
Claim Key: TBD5 (174 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.6. preferred_username

Claim Name: preferred_username
Claim Description: Shorthand name by which the End-User wishes to be referred to at the Resource Server.
JWT Claim Name: preferred_username
Claim Key: TBD6 (175 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.7. profile

Claim Name: profile
Claim Description: URL of the End-User's profile page.
JWT Claim Name: profile
Claim Key: TBD7 (176 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.8. picture

Claim Name: picture
Claim Description: URL of the End-User's profile picture. This URL MUST refer to an image file, rather than to a Web page containing an image.
JWT Claim Name: picture
Claim Key: TBD8 (177 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.9. website

Claim Name: website
Claim Description: URL of the End-User's Web page or blog.
JWT Claim Name: website
Claim Key: TBD9 (178 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.10. email

Claim Name: email
Claim Description: End-User's preferred e-mail address.
JWT Claim Name: email

Claim Key: TBD10 (179 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.11. email_verified

Claim Name: email_verified
Claim Description: True if the End-User's e-mail address has been verified; otherwise false. When this Claim Value is true, this means that the OP took affirmative steps to ensure that this e-mail address was controlled by the End-User at the time the verification was performed. The means by which an e-mail address is verified is context specific, and dependent upon the trust framework or contractual agreements within which the parties are operating.
JWT Claim Name: email_verified
Claim Key: TBD11 (180 suggested)
Claim Value Type(s): bool
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.12. gender

Claim Name: gender
Claim Description: End-User's defined gender.
JWT Claim Name: gender
Claim Key: TBD12 (181 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.13. birthdate

Claim Name: birthdate
Claim Description: End-User's birthday, represented as an [ISO8601_1] YYYY-MM-DD format. The year MAY be 0000, indicating that it is omitted. To represent only the year, YYYY format is allowed. Note that depending on the underlying platform's date related function, providing just year can result in varying month and day, so the implementers need to take this factor into account to correctly process the dates.
JWT Claim Name: birthdate
Claim Key: TBD13 (182 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.14. zoneinfo

Claim Name: zoneinfo
Claim Description: String from IANA Time Zone Database
[IANAtimezones] representing the End-User's time zone.
JWT Claim Name: zoneinfo
Claim Key: TBD14 (183 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.15. locale

Claim Name: locale
Claim Description: End-User's locale, represented as a BCP47
[RFC5646] language tag.
JWT Claim Name: locale
Claim Key: TBD15 (184 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.16. phone_number

Claim Name: phone_number
Claim Description: End-User's preferred telephone number.
JWT Claim Name: phone_number
Claim Key: TBD16 (185 suggested)
Claim Value Type(s): text string
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.17. phone_number_verified

Claim Name: phone_number_verified
Claim Description: True if the End-User's phone number has been
verified; otherwise false. When this Claim Value is true, this
means that the OP took affirmative steps to ensure that this phone
number was controlled by the End-User at the time the verification
was performed. The means by which a phone number is verified is
context specific, and dependent upon the trust framework or
contractual agreements within which the parties are operating.
When true, the phone_number Claim MUST be in E.164 format and any
extensions MUST be represented in [RFC3966] format.
JWT Claim Name: phone_number_verified
Claim Key: TBD17 (186 suggested)
Claim Value Type(s): bool
Change Controller: IETF

Specification Document(s): Section 5.1 of [OpenID.Core]

5.18. address

Claim Name: address
Claim Description: End-User's preferred postal address.
JWT Claim Name: address
Claim Key: TBD18 (187 suggested)
Claim Value Type(s): map
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

5.19. updated_at

Claim Name: updated_at
Claim Description: Time the End-User's information was last updated.
 Its value is a NumericDate as defined in Section 2 of [RFC8392].
JWT Claim Name: updated_at
Claim Key: TBD19 (188 suggested)
Claim Value Type(s): integer or floating-point number
Change Controller: IETF
Specification Document(s): Section 5.1 of [OpenID.Core]

6. References

6.1. Normative References

[IANA.CWT.Claims]
 IANA, "CBOR Web Token (CWT) Claims",
 <<https://www.iana.org/assignments/cwt>>.

[IANAtimezones]
 "IANA time zones", n.d.,
 <<https://www.iana.org/time-zones>>.

[ISO8601_1]
 "ISO8601-1", n.d.,
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 and C. Mortimore, "OpenID Connect Core 1.0 incorporating
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- [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/rfc/rfc8174>>.
- [RFC8392] Jones, M., Wahlstroem, E., Erdtman, S., and H. Tschofenig, "CBOR Web Token (CWT)", RFC 8392, DOI 10.17487/RFC8392, May 2018, <<https://www.rfc-editor.org/rfc/rfc8392>>.

6.2. Informative References

- [RFC7519] Jones, M., Bradley, J., and N. Sakimura, "JSON Web Token (JWT)", RFC 7519, DOI 10.17487/RFC7519, May 2015, <<https://www.rfc-editor.org/rfc/rfc7519>>.

Appendix A. CDDL Schema

```
name = (TBD1 => tstr) ; "Jane Doe"
given_name = (TBD2 => tstr) ; "Jane"
family_name = (TBD3 => tstr) ; "Doe"
middle_name = (TBD4 => tstr) ; "Ellen"
nickname = (TBD5 => tstr) ; "Jane D."
preferred_username = (TBD6 => tstr) ; "j.doe"
profile = (TBD7 => tstr) ; "https://example.org/about.html"
picture = (TBD8 => tstr) ; "https://example.org/avatar.png"
website = (TBD9 => tstr) ; "https://example.org"
email = (TBD10 => tstr) ; "janedoe@example.com"
email_verified = (TBD11 => bool) ; true
gender = (TBD12 => tstr) ; "female"
birthdate = (TBD13 => tstr) ; "1970-03-22"
zoneinfo = (TBD14 => tstr) ; "America/Los_Angeles"
locale = (TBD15 => tstr) ; "en_US"
phone_number = (TBD16 => tstr) ; "+1 (425) 555-1212"
phone_number_verified = (TBD17 => bool) ; true
address = {
    &(formatted: 1) ^ => tstr, ; "1234 Hollywood Blvd. Los Angeles CA, 90210 United State
s of America"
    &(street_address: 2) ^ => tstr, ; "1234 Hollywood Blvd."
    &(locality: 3) ^ => tstr, ; "Los Angeles"
    &(region: 4) ^ => tstr, ; "CA"
    &(postal_code: 5) ^ => tstr, ; "90210"
    &(country: 6) ^ => tstr, ; "United States of America"
}
updated_at = (TBD19 => int / float) ; 1730123071

TBD1 = 170
TBD2 = 171
TBD3 = 172
TBD4 = 173
TBD5 = 174
TBD6 = 175
TBD7 = 176
TBD8 = 177
TBD9 = 178
TBD10 = 179
TBD11 = 180
TBD12 = 181
TBD13 = 182
TBD14 = 183
TBD15 = 184
TBD16 = 185
TBD17 = 186
TBD18 = 187
TBD19 = 188
```

Figure 1: A CDDL description of each claim

Acknowledgments

TBD

Document History

-02

- * Update descriptions of email_verified, phone_number_verified, and birthdate claims using text from [OpenID.Core].
- * Use TBDn names for CWT requested claim numbers.

-01

- * Aligned terminology with OpenID Connect specification.
- * Added Michael B. Jones as an editor.

-00

- * Initial working group draft, based on draft-maldant-spice-oidc-cwt-02.

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