# Privacy Pass Extensions

Scott Hendrickson, Christopher Wood, Ghous Amjad, Kevin Yeo, Steven Valdez

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# Review

- Two drafts adopted:

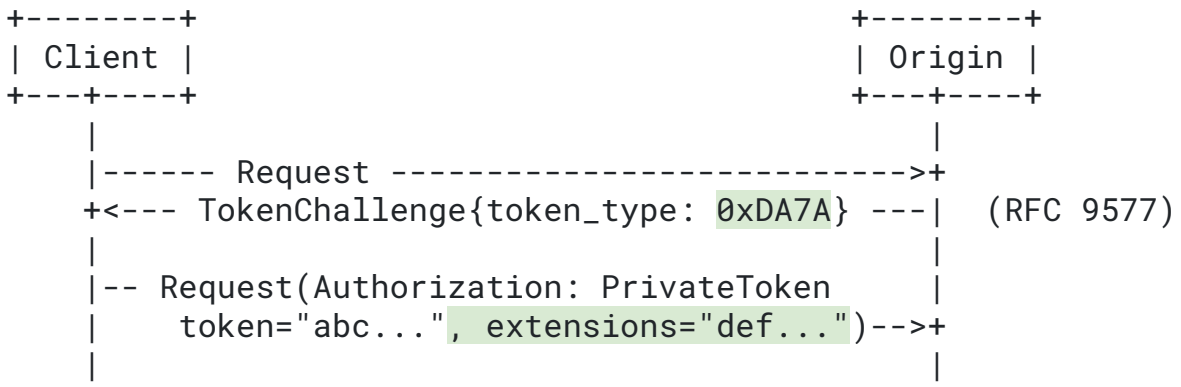
- draft-ietf-privacypass-auth-scheme-extensions
  - Adds an **extensions** parameter of PrivateToken:
    Authorization: PrivateToken token="abc..." extensions="def..."
- draft-ietf-privacypass-public-metadata-issuance
  - Defines privately (POPRF) and publicly (PBRSA) verifiable public metadata mechanisms

# Status

RSA Signatures with Public Metadata

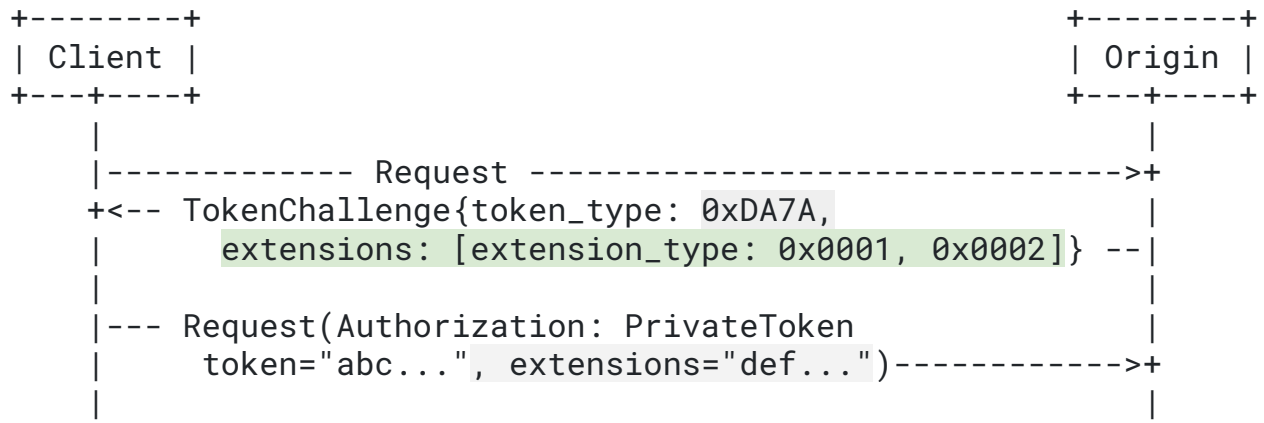
- Chrome IP Protection Authentication (including Expiration Extension)
- Pixel VPN Authentication
- Third-party audit of Cryptography

# Extension Flow




- `token_type` defines cryptographic protocol used
  - standardized in draft-ietf-privacypass-public-metadata-issuance
- `extensions="..."`
  - content is not yet standardized (example: Expiration Extension)
  - negotiation is not yet standardized
    - consider a TokenChallenge extension?
    - see auth-scheme-extensions sec 4 discussion

# Proposal: Extension Negotiation




- Image starts from draft-ietf-privacypass-auth-scheme-extensions
- adds a set of extensions requested by origin
- client can choose to present a subset
- reminder: the extensions presented add more entropy

# Path to WGLC

- Partially Blind RSA adoption
  - Presenting again at CFRG (Thursday session)
  - Prior adoption call requested privacypass draft usage
- Negotiate extensions, or not (previous slide)

\+ Bonus: Adopt Expiration Extension in Privacy Pass?

# Thank you!

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# ExpirationTimestamp

- Expiration and key rotation are interchangeable
- Key rotation is difficult to perform quickly
- draft spec

```
struct ExpirationTimestamp {
  uint64_t timestamp_precision;
  uint64_t timestamp;
}
```

all readers should verify safe rounding