OAuth WG, IETF 98 Chicago

OAuth JPoP

~ JWT PoP Token Usage ~

https://tools.ietf.org/html/draft-sakimura-oauth-jpop-02

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We were thinking that for the token usage, Token Binding will solve all problems

WRONG!

On some circumstances, it does not.

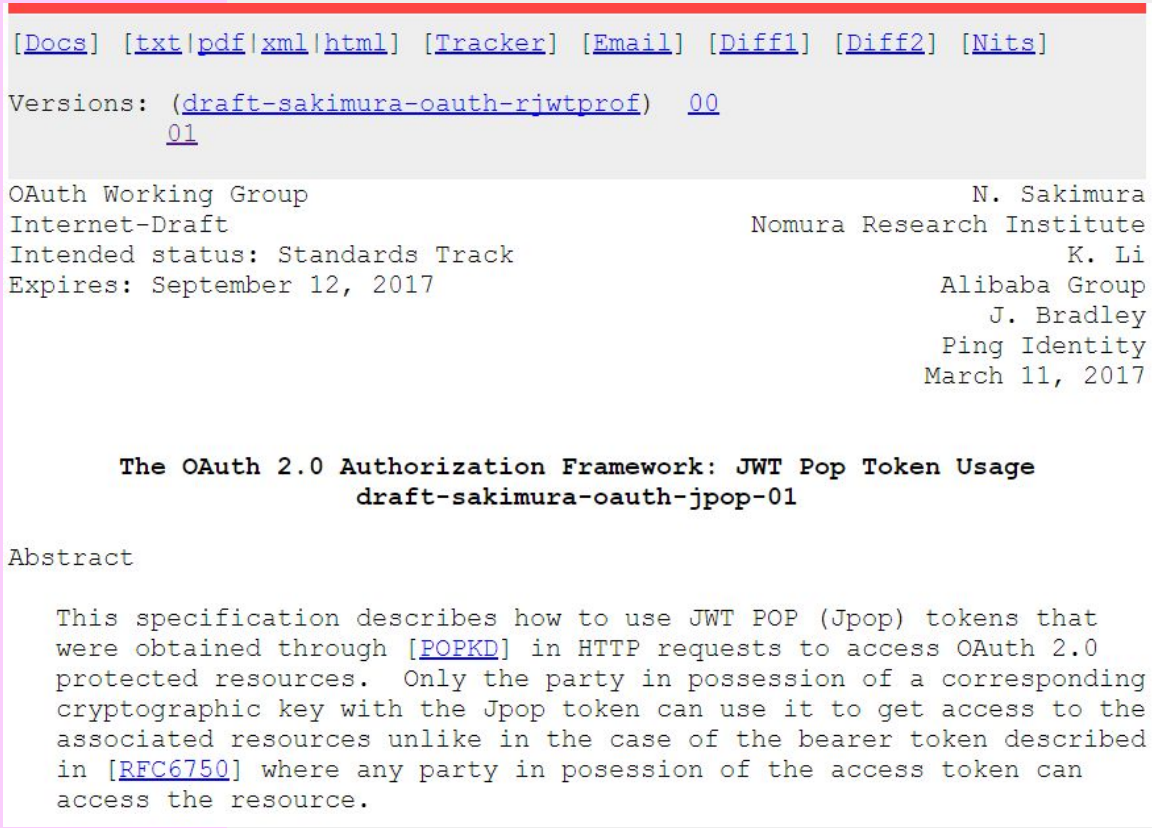
- Cannot touch the infrastructure. Everything has to be done at the application layer.
- Need somehow to tie back to the TLS client authn.
- Etc.

And they need it now.

E.g. UK Open Banking

Here comes the JPoP!

Parallel document to RFC6750.



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Versions: (draft-sakimura-oauth-rjwtprof) 00
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OAuth Working Group
Internet-Draft
Intended status: Standards Track
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The OAuth 2.0 Authorization Framework: JWT Pop Token Usage
draft-sakimura-oauth-jpop-01

Abstract

This specification describes how to use JWT POP (Jpop) tokens that were obtained through [POPKD] in HTTP requests to access OAuth 2.0 protected resources. Only the party in possession of a corresponding cryptographic key with the Jpop token can use it to get access to the associated resources unlike in the case of the bearer token described in [RFC6750] where any party in posession of the access token can access the resource.

The draft defines

JWT PoP Token looks like:

```
{
  "iss": "https://server.example.com",
  "aud": "https://resource.example.org",
  "iat": "1360189224",
  "exp": "1361398868",
  "cnf":{...}
 }
```

Replay protection. (It must only span a same administrative domain.)

All names are mandatory

CN cnf Method (CN Constrained Token)

```
{
   "iss": "https://server.example.com",
   "sub": "joe@example.com",
   "aud": "https://resource.example.org",
   "exp": "1361398824",
   "nbf": "1360189224",
   "cnf":{
     "cn": "client.example.com"
   }
}
```

The Common Name of the client certificate that the client used in the authorization request.

Client ID cnf Method (cid Constrained Token)

```
{
   "iss": "https://server.example.com",
   "sub": "joe@example.com",
   "aud": "https://resource.example.org",
   "exp": "1361398824",
   "nbf": "1360189224",
   "cnf":{
     "cid": "client-id-used-in-the-token-request"
   }
}
```

jku cnf Method (jku Constrained Token)

```
{
  "iss": "https://server.example.com",
  "sub": "joe@example.com",
  "aud": "https://resource.example.org",
  "exp": "1361398824",
  "nbf": "1360189224",
  "cnf":{
    "jku": "https://client.example.com/keys/client123-jwks",
    “Kid”: “2017-03-31”
        }
  }
```

JWK URI from which one can retrieve the keys used to

In addition,

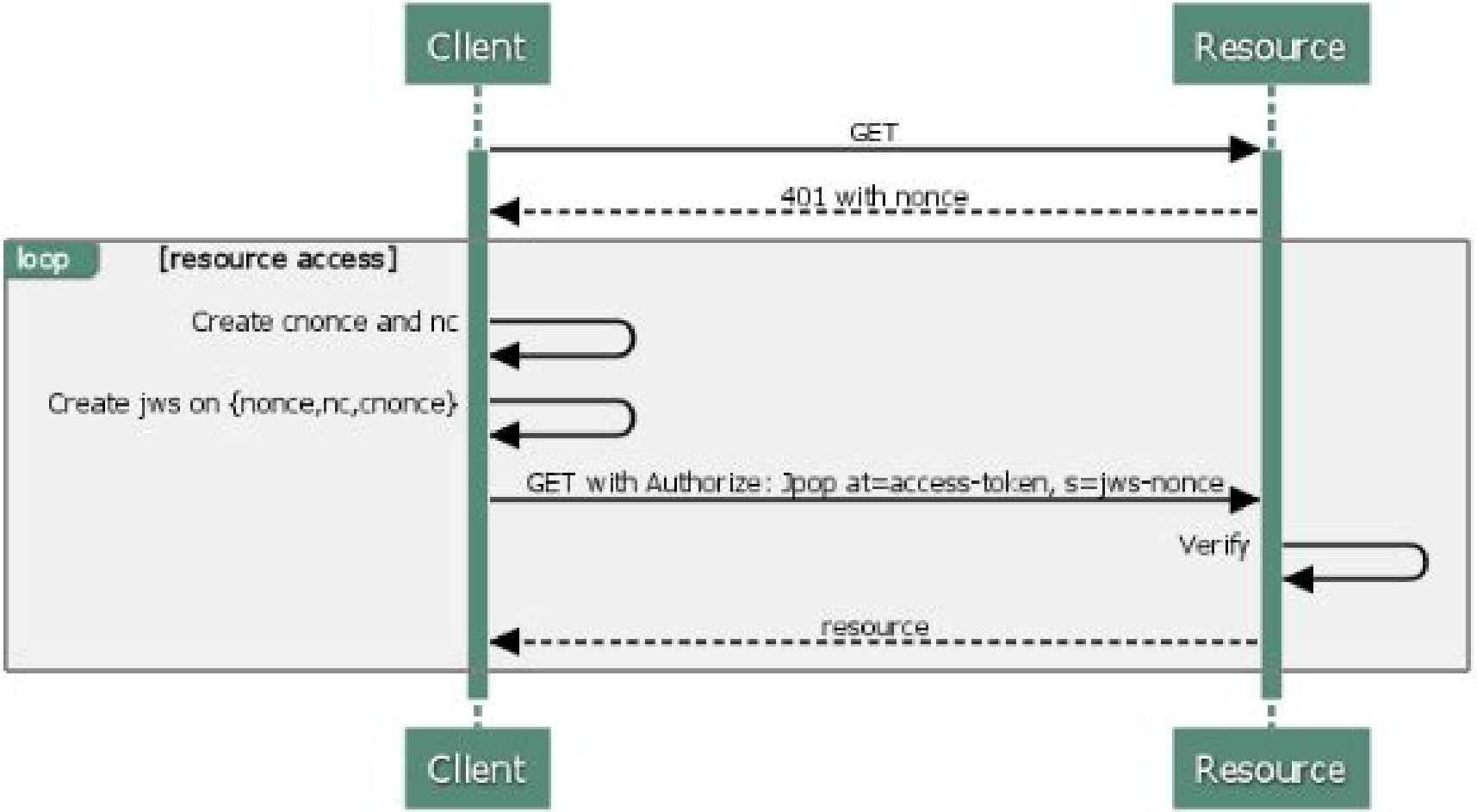
- jwk JSON Web Key Representing a Public Key
- jwe Encrypted JSON Web Key
- jwkt#s256 [RFC7638] Thumbprint of a JWK using the SHA-256 hash Function.
- x5t#s256 [RFC7515] X.509 Certificate SHA-256 Thumbprint

are defined.

Resource Access Methods

- Mutual TLS access method
  - CN cnf Method
  - x5t#s256 cnf method
  - jku cnf method
- Signature Method
  - See next slide

OAuth JPOP: Signature Method



Downside of us not standardizing it now:

- Groups like OBS are likely to start deploying a proprietary solution and will not be replaced by a standard for a long time.

Please adopt the draft as a WG item!