



oauth_protocol

Protocol Elements

- Roles
 - Service Provider (Resource Provider)
 - Consumer (Resource Consumer)
 - User (Resource Owner)
- Consumer Workflow
 - Obtain Request-Token from Provider
 - Redirect User to Authorize Request-Token
 - (User Redirected Back to Consumer)
 - Exchange Request-Token for Access-Token
 - (Access Resource)
- Out-of-Band Configuration
 - Consumer Credentials (Key, Secret, PK)
 - OAuth Endpoints (Request, Authorize, Access)
 - Signatures Method (HMAC-SHA1, RSA-SHA1, PLAINTEXT)

OAuth Challenge

- Request

```
GET /photos?size=original&file=vacation.jpg HTTP/1.1
Host: photos.example.net:80
```

- Response

```
HTTP/1.1 401 UNAUTHORIZED
WWW-Authenticate: OAuth realm=http://photos.example.net/
```

- OAuth Request

```
GET /photos?size=original&file=vacation.jpg HTTP/1.1
Host: photos.example.net:80
Authorization: OAuth realm="http://photos.example.net/"
    oauth_consumer_key="dpf43f3p214k3l03"
    oauth_token="nnch734d00s12jdk"
    oauth_nonce="k11o9940pd9333jh"
    oauth_timestamp="1191242096"
oauth_signature_method="HMAC-SHA1"
    oauth_version="1.0"
    oauth_signature="tR3%2BTy81lMeYAr%2FFid0kMTYa%2FWM%3D"
```

Delegation Workflow

- Obtain Request-Token

```
GET /oauth/request HTTP/1.1
Host: photos.example.net
Authorization: OAuth realm="http://photos.example.net/"
    oauth_consumer_key="dpf43f3p214k3l03"
    oauth_token=""
    oauth_nonce="t39ojf40pd9533jh"
    oauth_timestamp="1191242098"
oauth_signature_method="HMAC-SHA1"
    oauth_signature="tTFyqivhutHiglPvmyilZlHm5Uk%3D"
```

```
HTTP/1.1 200 OK
```

```
oauth_token=hh5s93j4hdidpola&oauth_token_secret=hdhd0244k9j7ao03
```

- Redirect User

```
http://photos.example.net/oauth/authorize?oauth_token=hh5s93j4hdidpola&oa
uth_callback=http%3A%2F%2Fconsumer.example.com%2Foauth%2Fready
```

Delegation Workflow (cont.)

- Exchange Request-Token for Access-Token

```
GET /oauth/access HTTP/1.1
Host: photos.example.net
Authorization: OAuth realm="http://photos.example.net/"
    oauth_consumer_key="dpf43f3p214k3103"
    oauth_token="hh5s93j4hdidpola"
    oauth_nonce="7dh83hdhh838dhd8"
    oauth_timestamp="1191242099"
oauth_signature_method="HMAC-SHA1"
    oauth_signature="bd7pDSiCAgRu05hmYrD8M69eyYQ%3D"
```

```
HTTP/1.1 200 OK
```

```
oauth_token=nnch734d00sl2jdk&oauth_token_secret=pfkkdhi9sl3r4s00
```

- Access Resources

Signature Base String

```
GET /photos?size=original&file=vacation.jpg HTTP/1.1
Host: photos.example.net:80
Authorization: OAuth realm="http://photos.example.net/"
    oauth_consumer_key="dpf43f3p214k3l03"
    oauth_token="nnch734d00sl2jdk"
    oauth_nonce="k1lo9940pd9333jh"
    oauth_timestamp="1191242096"
oauth_signature_method="HMAC-SHA1"
    oauth_version="1.0"
    oauth_signature="tR3%2BTy81lMeYAr%2FFid0kMTYa%2FWM%3D"
```

```
GET&http%3A%2F%2Fphotos.example.net%2Fphotos&file%3Dvacation.jpg
%26oauth_consumer_key%3Ddpf43f3p214k3l03%26oauth_nonce%3Dk1lo994
0pd9333jh%26oauth_signature_method%3DHMAC-
SHA1%26oauth_timestamp%3D1191242096%26oauth_token%3Dnnch734d
00sl2jdk%26oauth_version%3D1.0%26size%3Doriginal
```