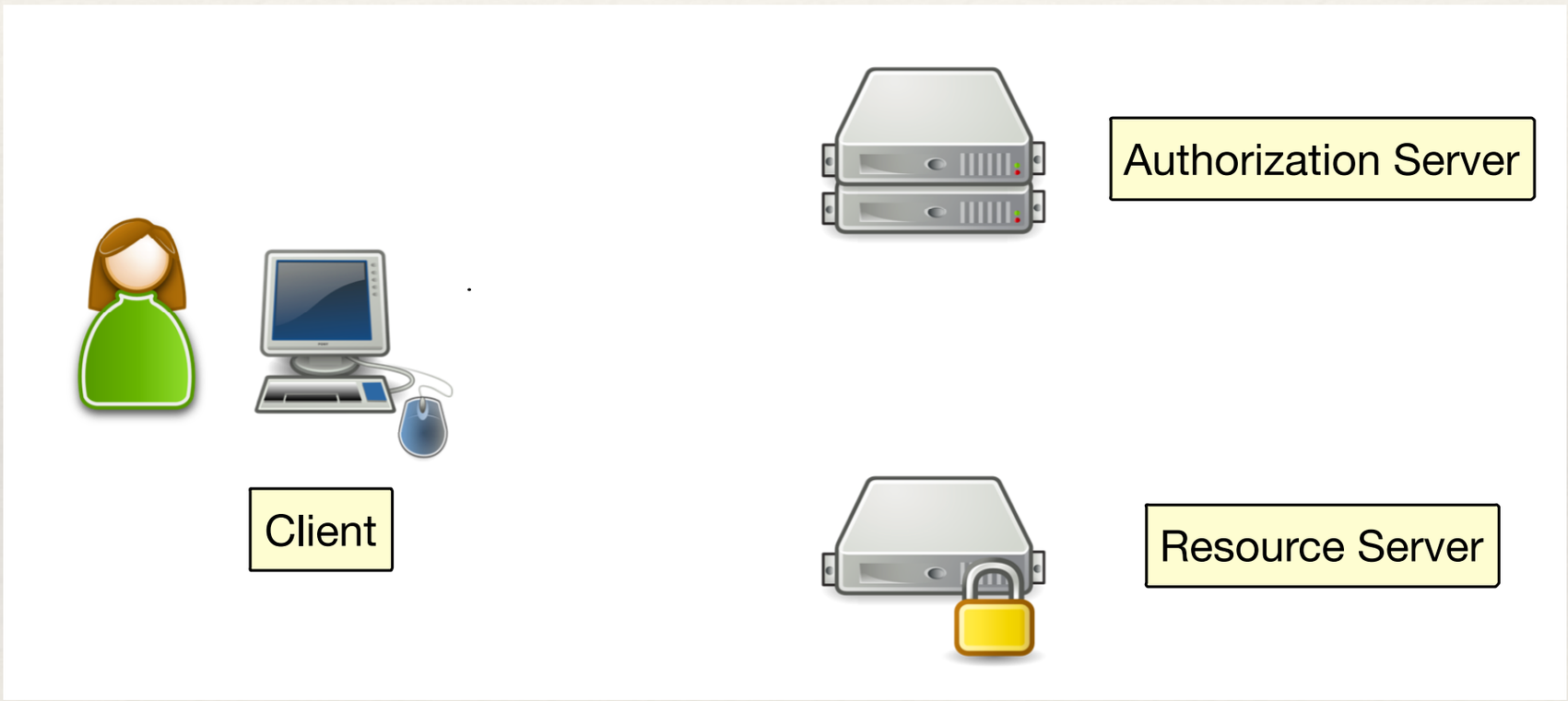
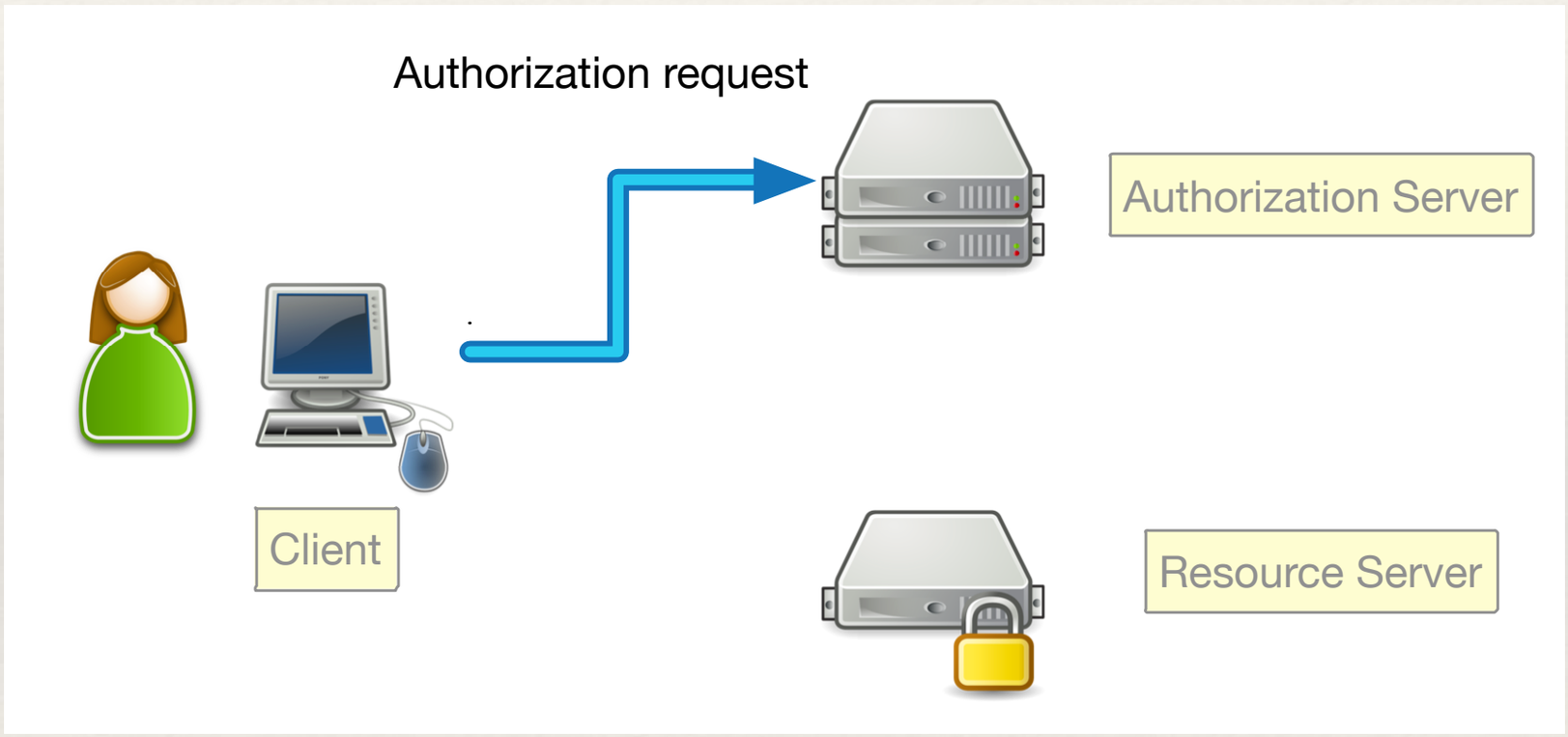
OAuth2

- The OAuth 2.0 authorization framework enables a third-party application to obtain limited access to an HTTP service,
  - either on behalf of a resource owner by orchestrating an approval interaction between the resource owner and the HTTP service,
  - or by allowing the third-party application to obtain access on its own behalf.

The players



Authorization Request



Authorization Request - details

Parameters

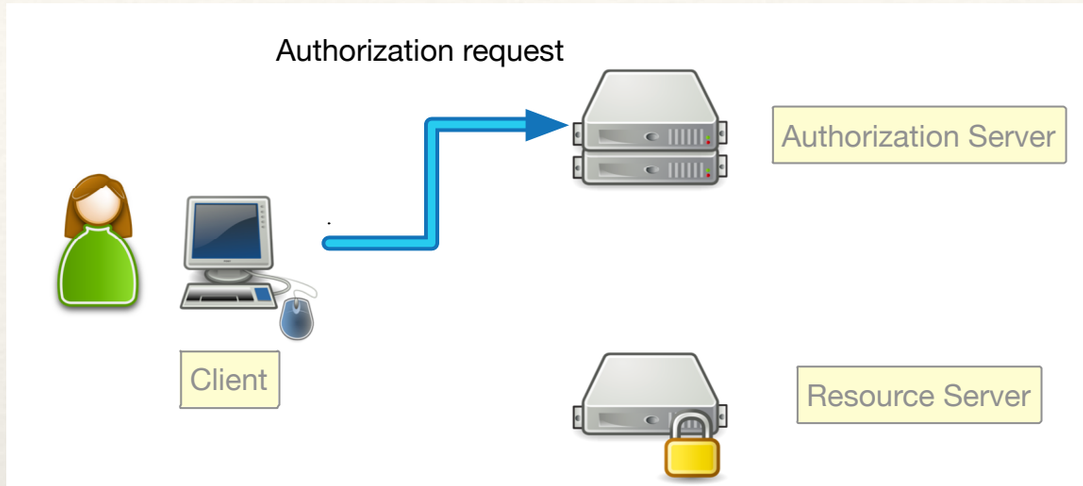
client_id

redirect_uri

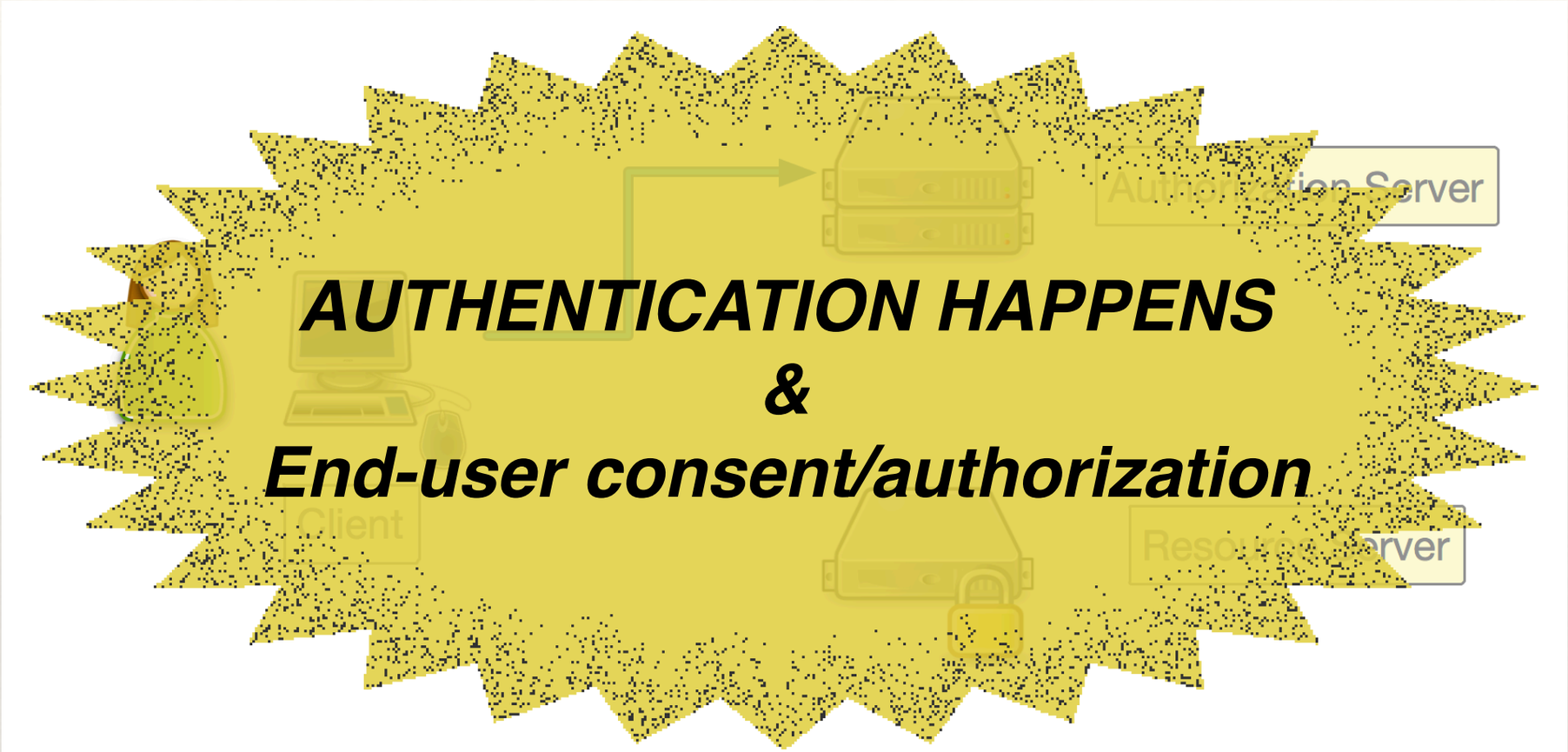
response_type

scope

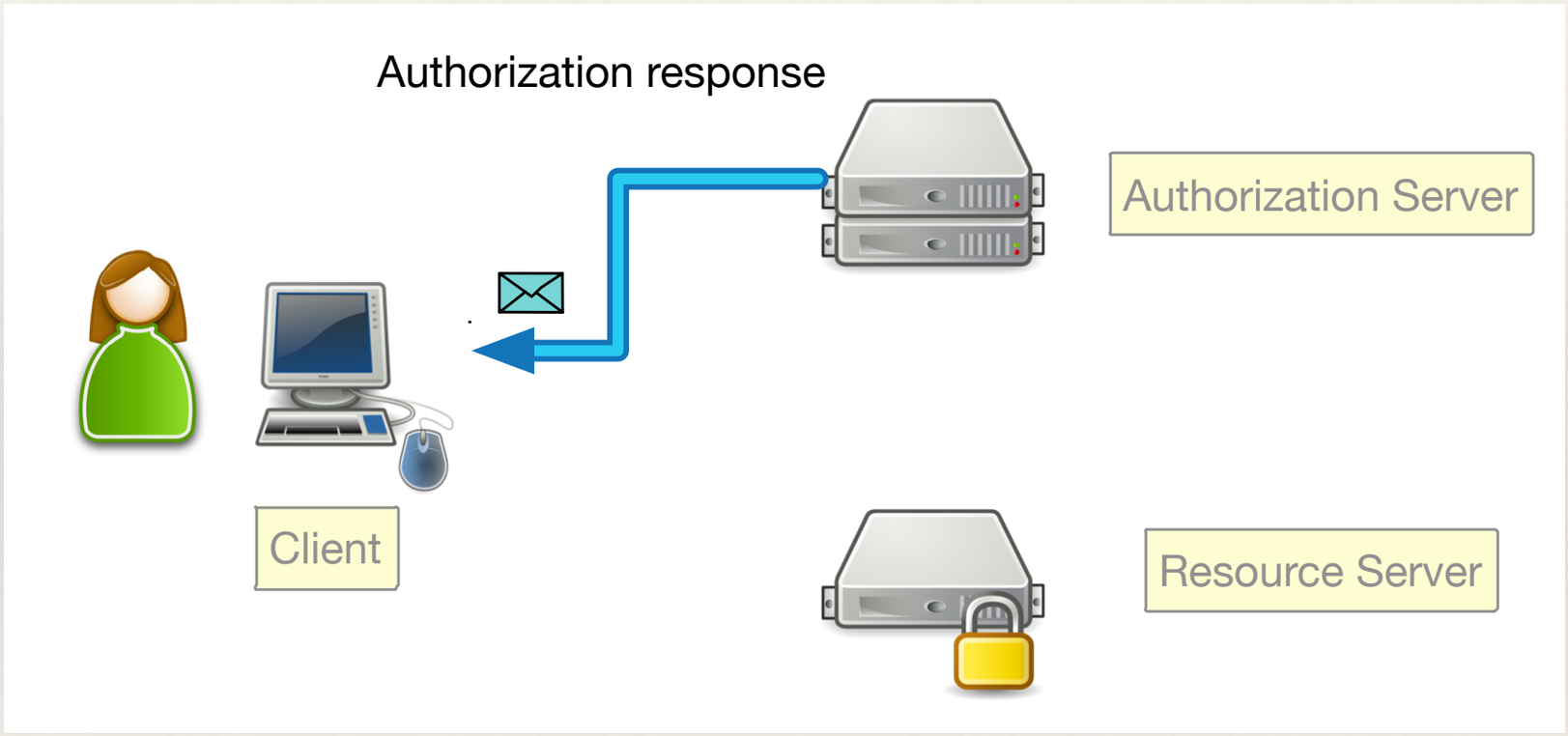
state



GET
http://example.com/authorization?state=152167198031680203 5&
redirect_uri=https://example.org/authz_cb&
response_type=code&
client_id=SFEBuhC7sp3a


AUTHENTICATION HAPPENS
&
End-user consent/authorization

Authorization Response



Authorization Response - details

Parameters

code

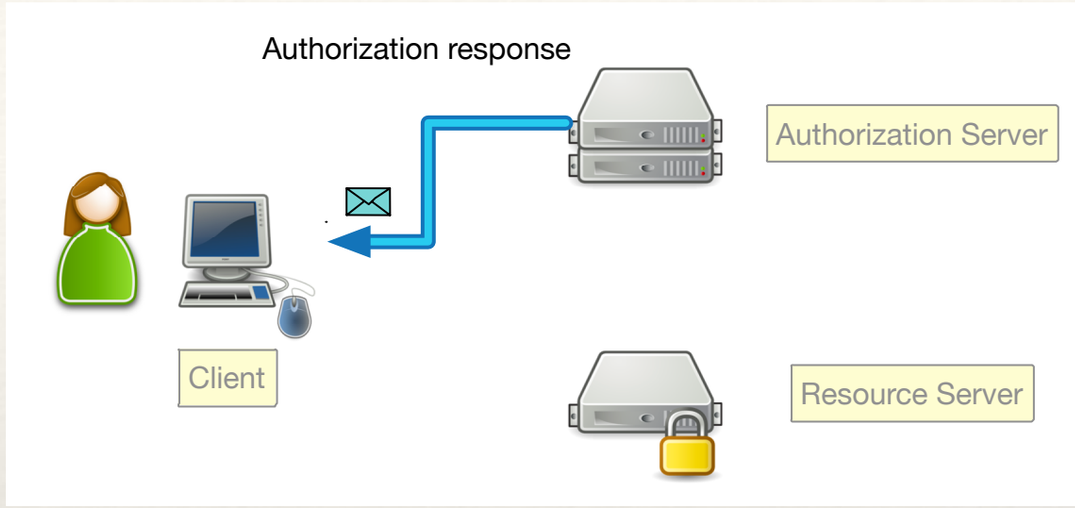
state

access_token

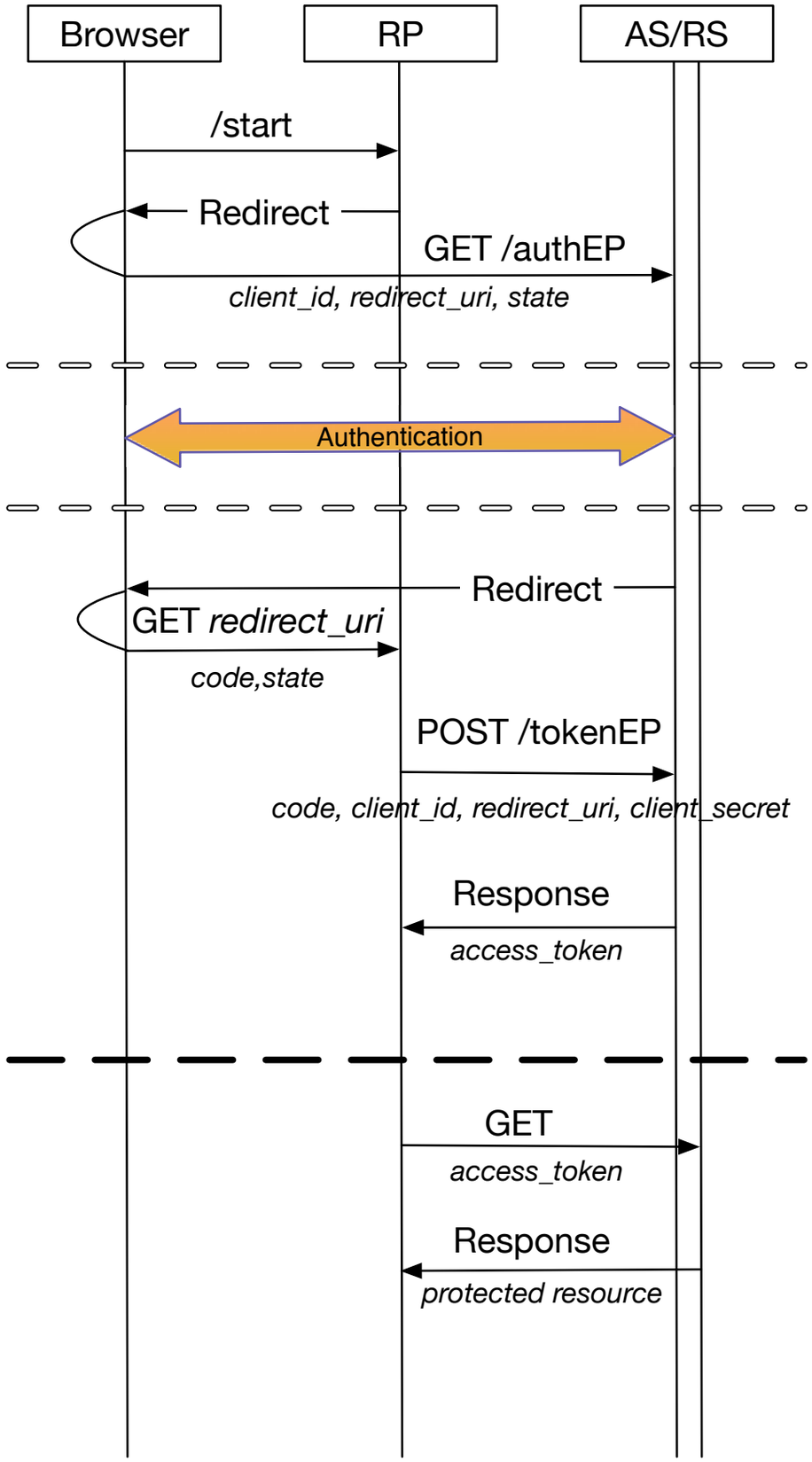
token_type

expires_in

scope



GET
https://example.org/authz_cb?state=15216719803168020 35&
code=s87BT60pp2UbNX2HnkWpZ9YhPVHRZaoTuU9XJul6JMuQaKUidUM6y1Boab6


Browser
RP
AS/RS
/start
Redirect
GET /authEP
client_id, redirect_uri, state
Authentication
Redirect
GET redirect_uri
code,state
POST /tokenEP
code, client_id, redirect_uri, client_secret
Response
access_token
GET
access_token
Response
protected resource

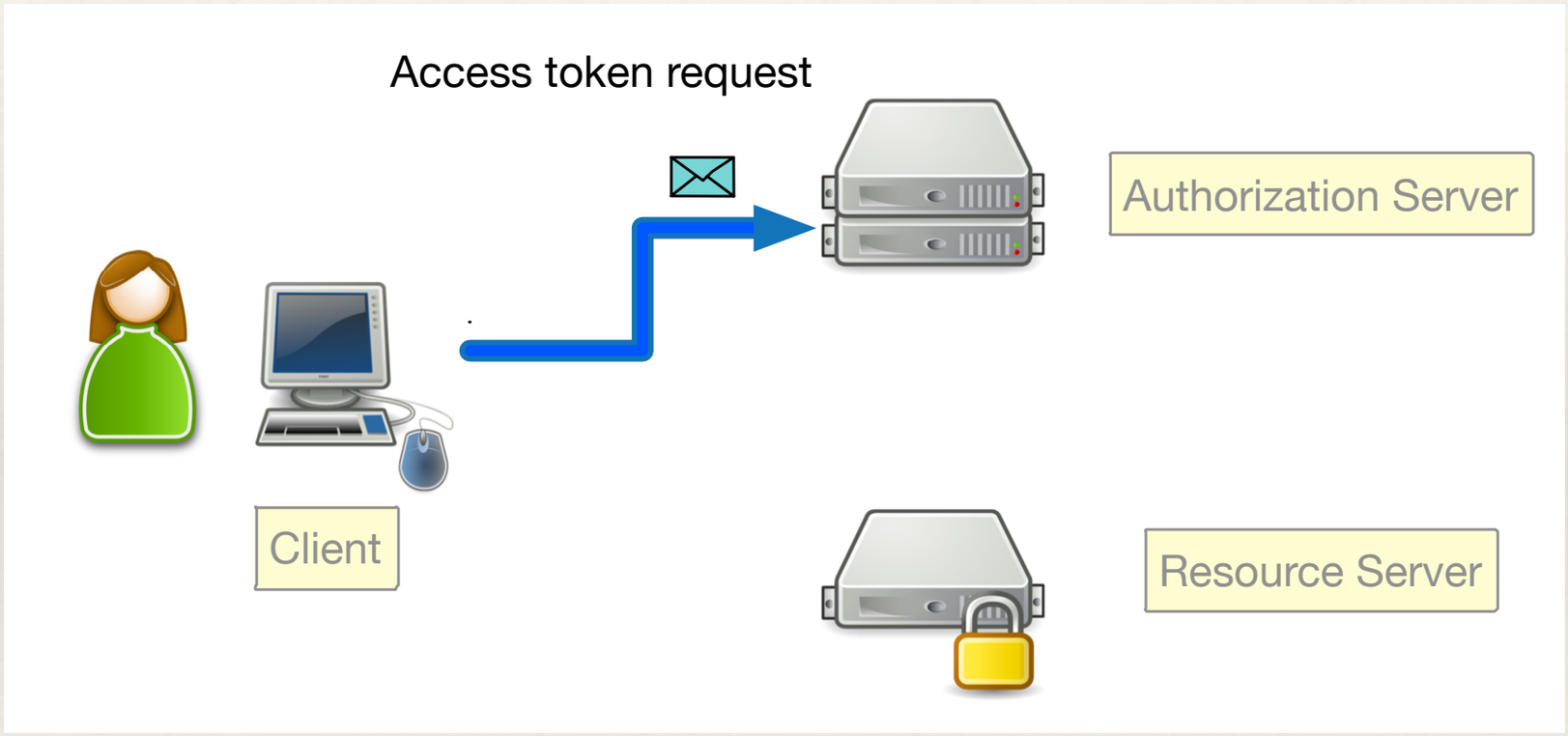
Access Token

A string representing an authorization issued to the client. The string is usually opaque to the client.

Bearer Token

’A security token with the property that any party in possession of the token (a "bearer") can use the token in any way that any other party in possession of it can.’

Access Token Request



Access Token Request - details

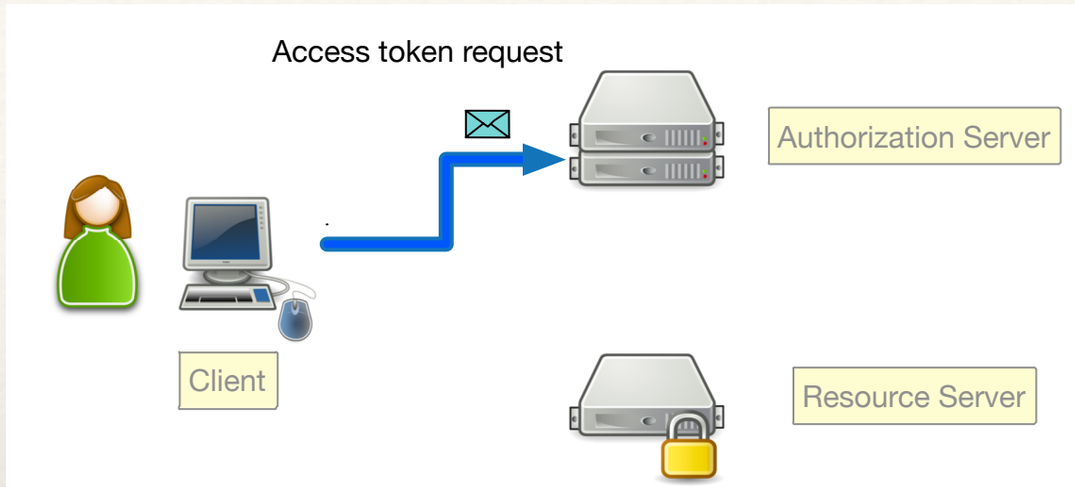
Parameters

client_id

code

grant_type

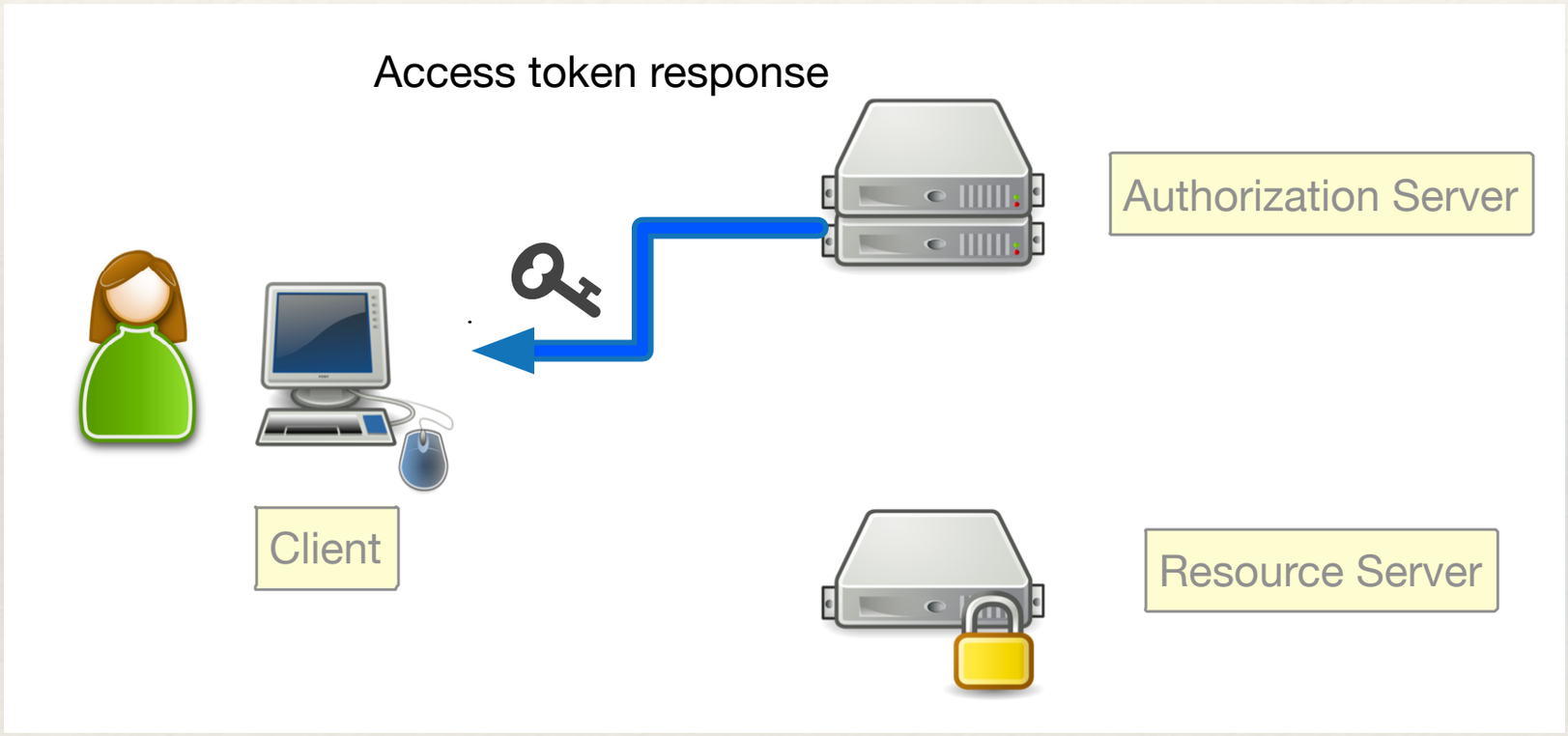
redirect_uri



POST
http://example.com/token

code=s87BT60pp2UbNX2HnkWpZ9YhPVHRZaoTuU9XJul6JMuQaKUidUM6y1Boab6&
grant_type=authorization_code&
redirect_uri=https://example.org/authz_cb

Access Token Response



Access Token Response - details

Parameters

access_token

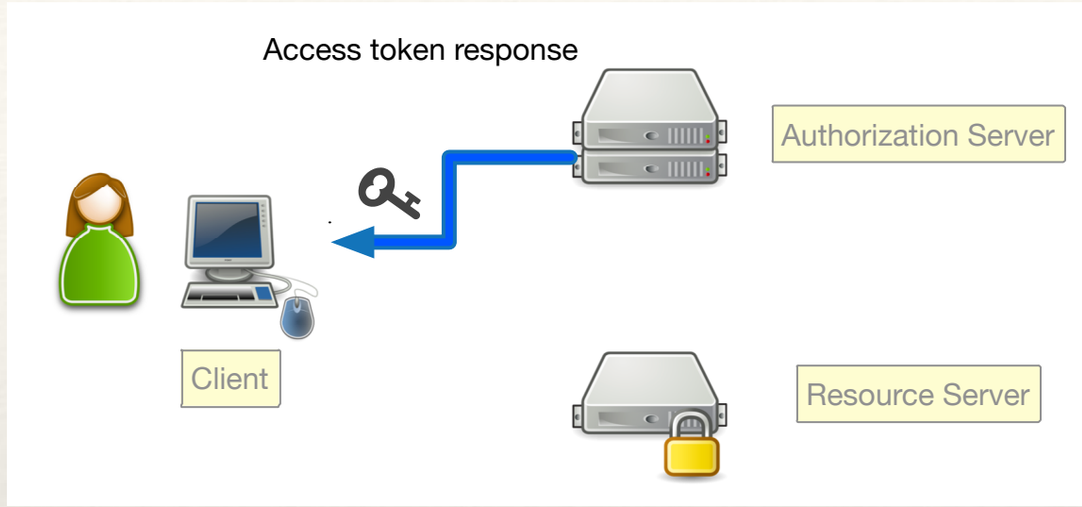
expires_in

refresh_token

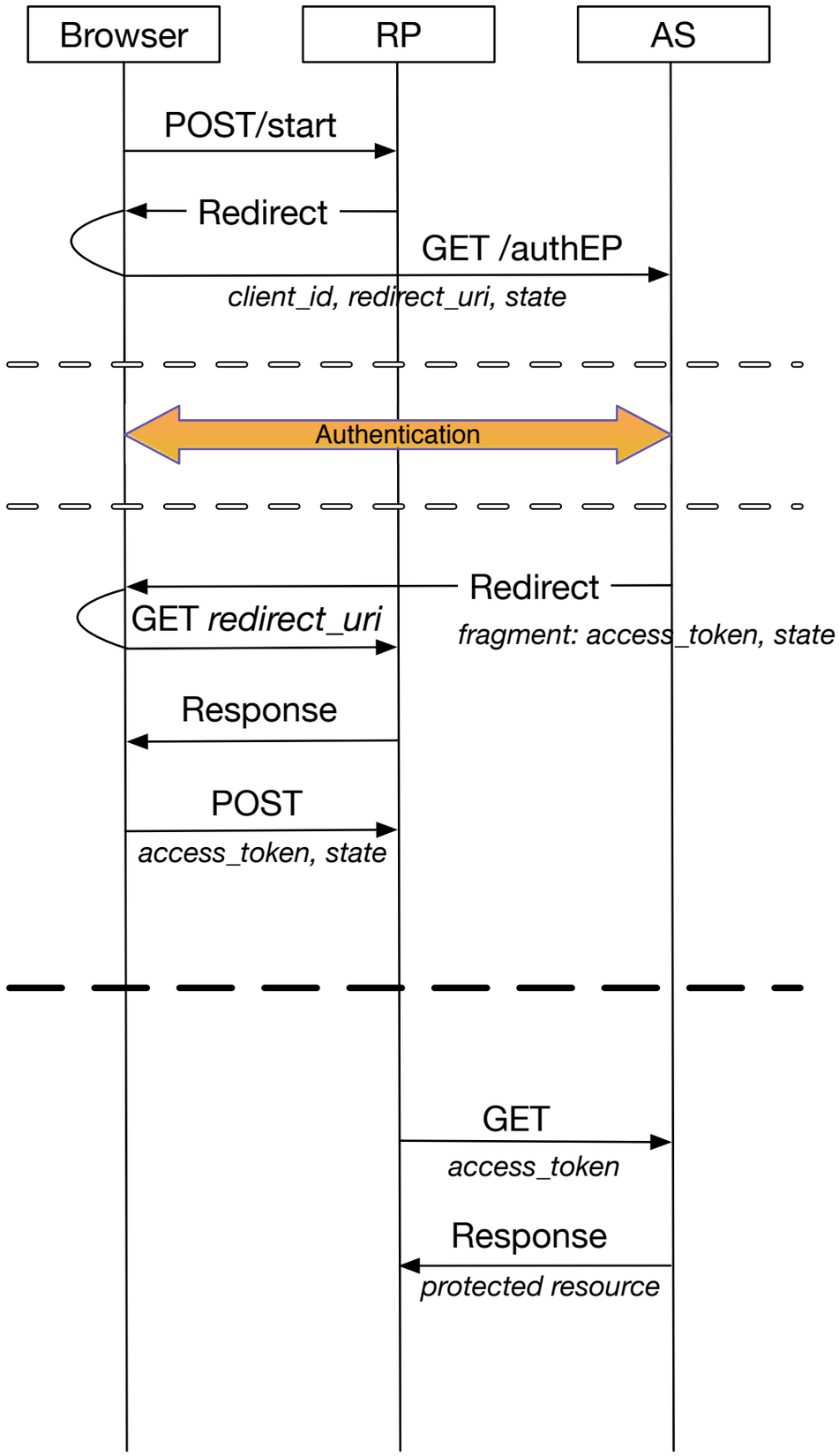
scope

token_type

state




```
{
    'access_token': ’s87BT60pp2UbNX2HnkWpfPfWNo9Gi7chACuWoa2IDND',
    'expires_in': 3600,
    'refresh_token': ’s87BT60pp2U+bNX2HnkWpVCnDYPsy8EOpI’
    'state': ’STATE0’,
    'token_type': 'Bearer',
}
```


Browser
RP
AS
POST/start
Redirect
GET /authEP
client_id, redirect_uri, state
Authentication
Redirect
GET redirect_uri
fragment: access_token, state
Response
POST
access_token, state
GET
access_token
Response
protected resource

Refresh Token

Refresh tokens are issued to the client by the authorization server and are used to obtain a new access token when the current access token becomes invalid or expires, or to obtain additional access tokens with identical or narrower scope.

Refresh Access Token Request - details

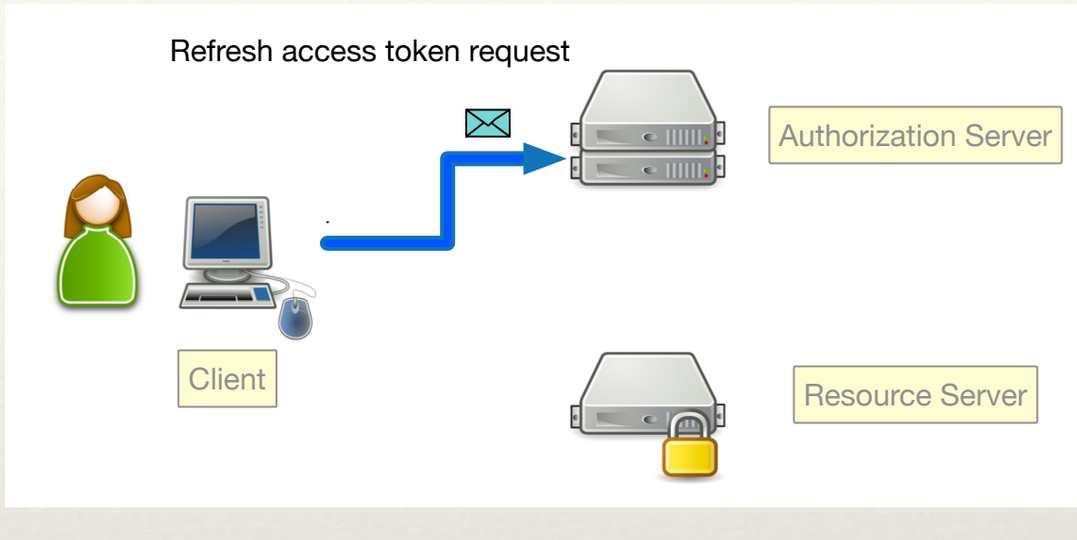
Parameters

client_id

grant_type

scope

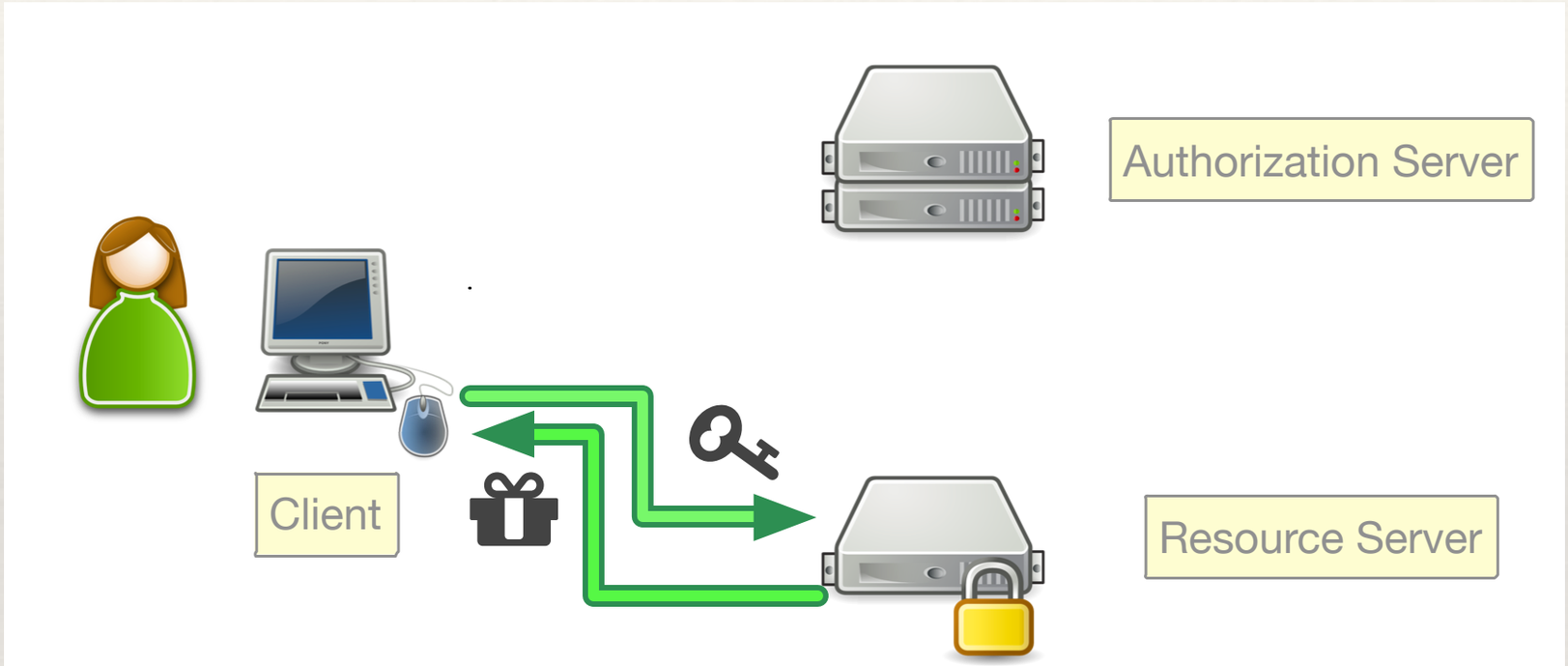
refresh_token



POST
http://example.com/token

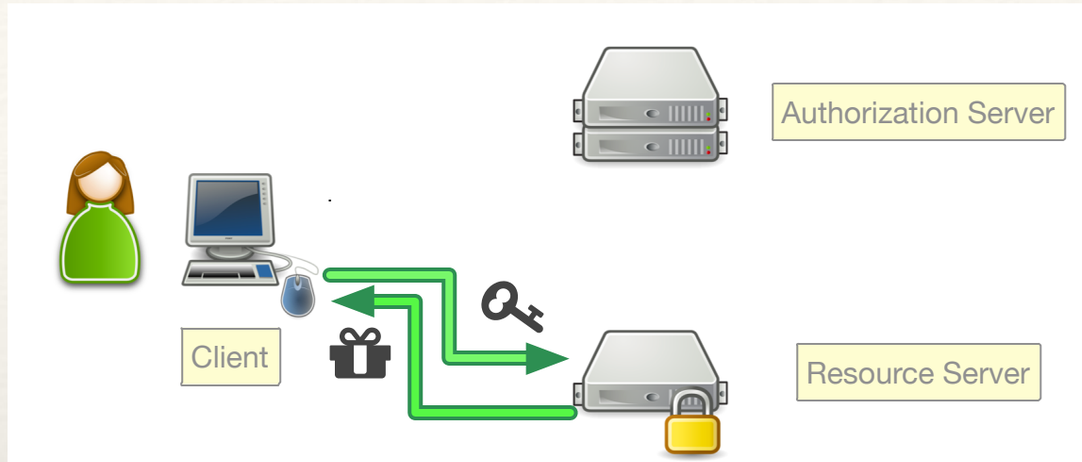
refresh_token=s87BT60pp2U+bNX2HnkWpVCnDYPsy8EOpI&
grant_type=authorization_code

Resource Access



Resource request/response

Resource Access - details



Resource request/response

GET
https://example.com/resource

Header:

Authorization: ’Bearer s87BT60pp2UbNX2HnkWpfPfWNo9Gi7chACuWoa2IDND’

Authorized Requests

- Authorization Request Header Field

```
POST /resource HTTP/1.1
Host: server.example.com
Authorization: Bearer mF_9.B5f-4.1JqM
```

- Form-encoded body part

```
POST /resource HTTP/1.1
Host: server.example.com
Content-Type: application/x-www-form-urlencoded

access_token=mF_9.B5f-4.1JqM
```

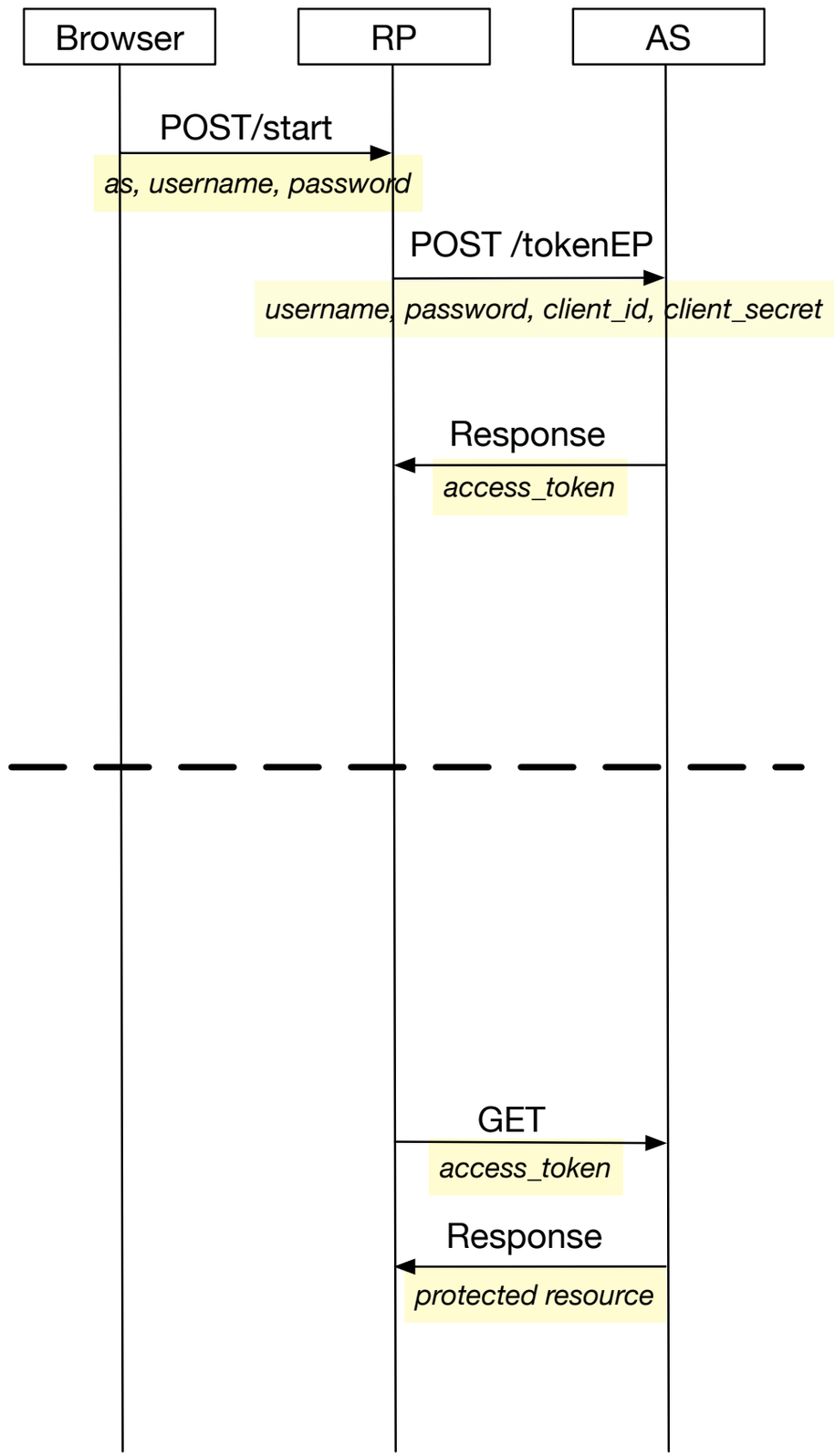
- Uri query parameter

```
GET /resource?access_token=mF_9.B5f-4.1JqM HTTP/1.1
Host: server.example.com
```

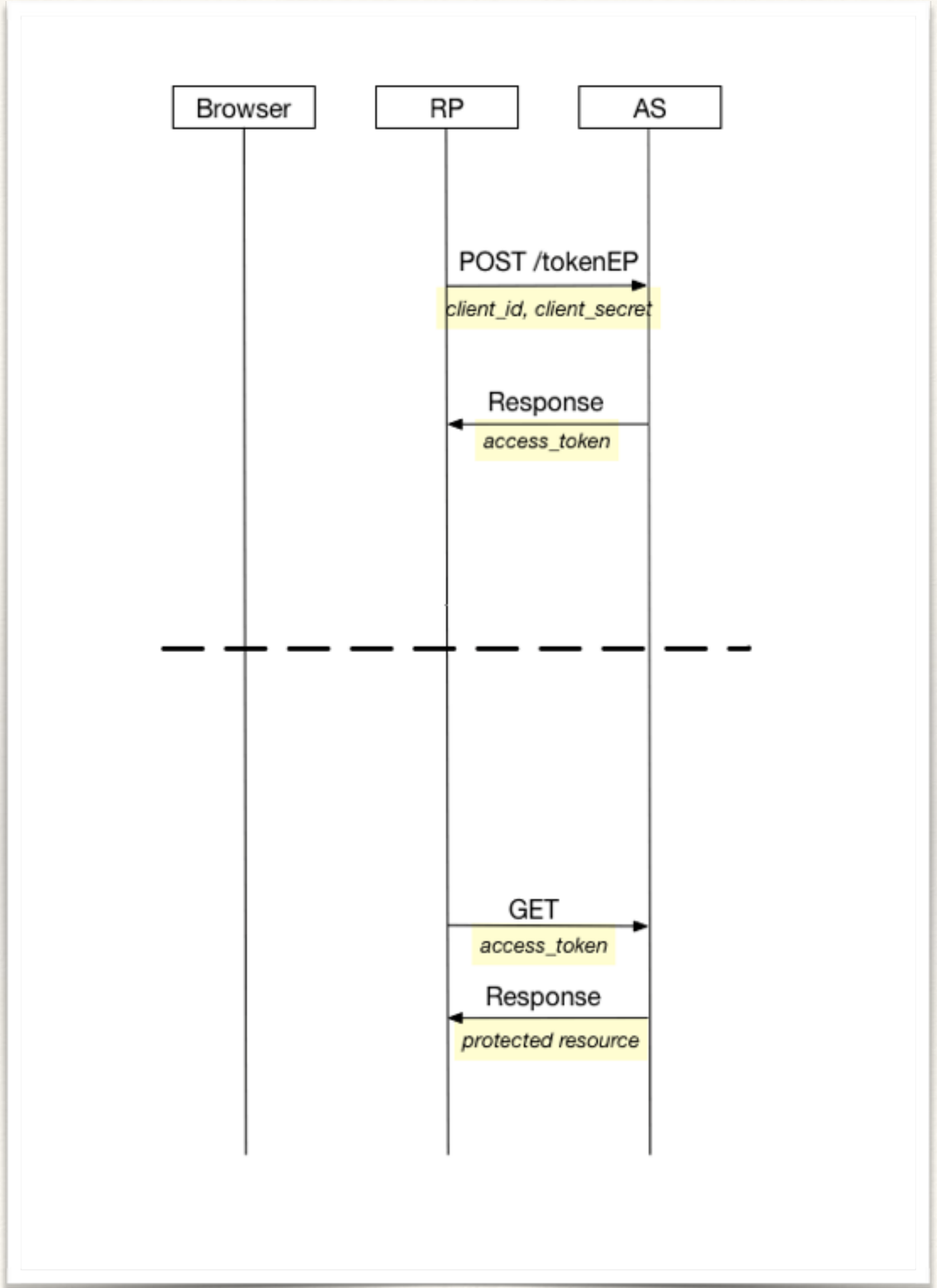
Flows

- Authorization Code Grant
- Implicit Grant
- Resource Owner Password Credentials Grant
- Client Credentials Grant

Password Credentials



Client Credentials



Links to documents

- The OAuth 2.0 Authorization Framework (RFC6749)
- The OAuth 2.0 Authorization Framework: Bearer Token Usage (RFC6750)