

# B2STAGE HTTP-API

GitHub: <https://github.com/EUDAT-B2STAGE/http-api>

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# B2STAGE HTTP-API: *Objectives*

The primary goal is to allow users to ingest and retrieve data via a standard RESTful HTTP interface in order to:

- **hide the underlying technology** (discourage the use of native iRODS clients),
- **lower the entry barrier** to using EUDAT services (HTTP is a widely adopted protocol),
- **simplify integration** into existing workflows,
- allow **direct access to data assets** held with the EUDAT CDI.

The *beta* release is focused on the interaction with **B2SAFE**, **B2ACCESS** and **B2HANDLE**, allowing users to transfer and manage data on the "registered" data domain.

# Available endpoints

- ***/auth/askauth*** (*B2ACCESS OAuth2*)
- ***/api/registered*** (*B2SAFE*)
- ***/api/pids*** (*B2HANDLE*)



# Available endpoints: */api/registered*

- CRUD operations on the *registered* domain (**B2SAFE**):
  - **GET**: obtain file metadata, download a file, list directory
  - **PUT**: upload an entity (and optionally return PID)
  - **POST**: create a directory
  - **DELETE**: delete a file, delete empty directory
  - **PATCH**: Rename file, rename directory
- Resources identified by full path directory namespace:

```
curl -H "Authorization: Bearer <auth_token>" \  
<http_server:port>/api/registered/path/to/directory/filename.txt
```

# Available endpoints: */api/pids*

- PID resolution (**B2HANDLE**)
  - **GET**: resolve PID and get **URL** and **EUDAT/CHECKSUM**
  - **GET ?download=true**: resolve PID and download object

Example:

```
curl -H "Authorization: Bearer <auth_token>" <http_server:port>/api/pids/<PID>
```

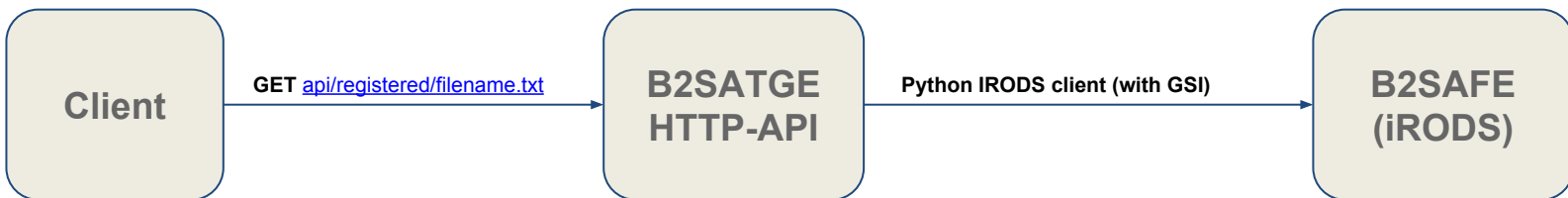
[...]

```
"Response": {  
  "data": {  
    "EUDAT/CHECKSUM": '123456789',  
    "URL": "<http_server:port>/api/registered/tempZone/home/guest/test.txt"  
  },  
  "errors": null  
}
```

# Sending a request

Using the **authentication token** in a request:

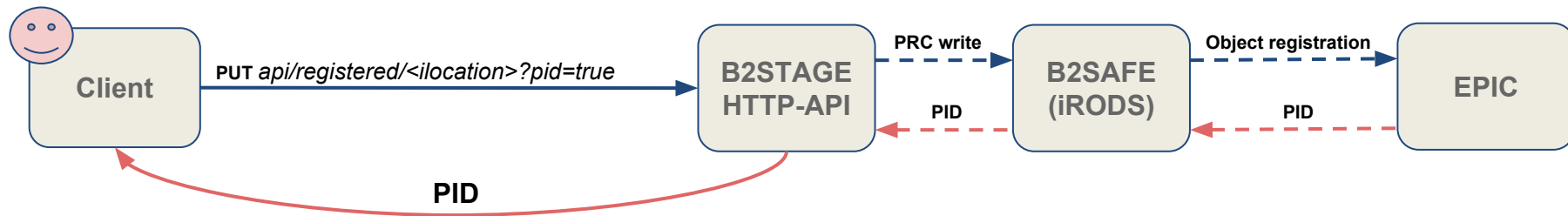
```
$ curl \
  -H "Authorization: Bearer
  eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJ1c2VyX2lkIjoiaZTQyYTE2OTI0NGZMc0Y2E5LTgwY2U0tNThkYjk
  4MmI5M2EwIiwianRpIjoiaZG5ZGFmOTQtYWJkNS00ZTdiLTNmNzgtMzAyMjAxY2FhNWlxIn0.pCeRmFry7-q6h0vaeCR
  7HQdBMLKuZxQEqi6Manvx9jk" https://b2stage.cineca.it/api/registered/path/to/directory/filename.txt
```



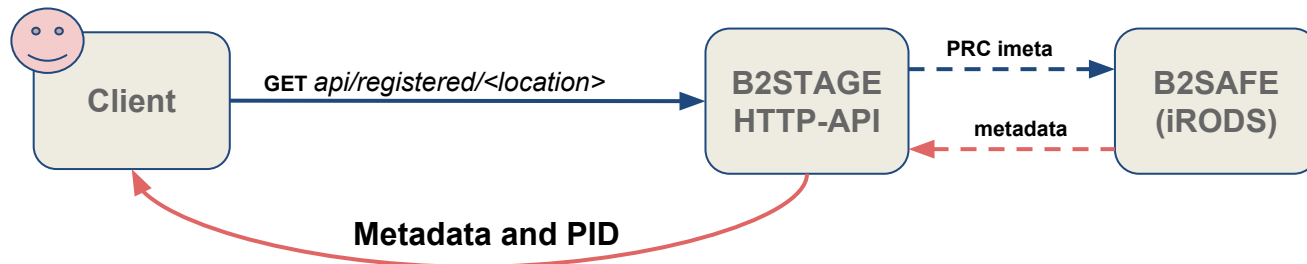
\*Authentication token refresh is not supported by B2ACCESS yet. When the token expires a new one has to be requested, visiting the endpoint `/auth/askauth` via a web browser

# Typical workflows with PID (1)

- Upload a file and get the PID (synchronous)



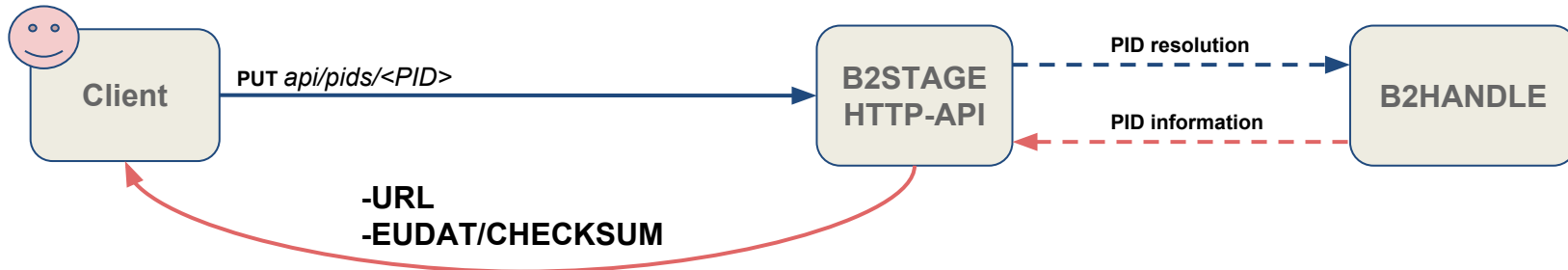
- Get object metadata (with PID, asynchronous)



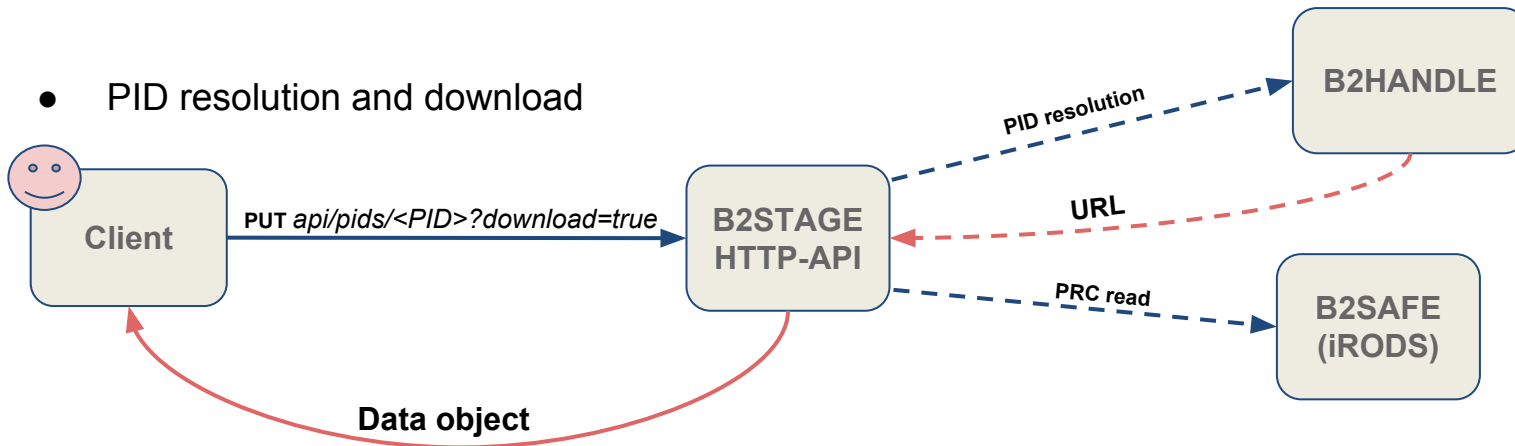


# Typical workflows with PID (2)

- PID resolution



- PID resolution and download



# For the users

- **Documentation** with example (cURL):  
<https://github.com/EUDAT-B2STAGE/http-api/blob/master/docs/user/user.md>
- Online **prototype**, currently connected to Cineca B2SAFE devel and B2ACCESS devel:  
<https://b2stage.cineca.it/api/status>
- SWAGGER UI (test and interactive documentation):  
<http://petstore.swagger.io/?url=https://b2stage.cineca.it/api/specs>

# HTTP-API ROADMAP

ALPHA v0.1 - 11/2016	BETA - 03/2017	PRODUCTION - 06/2017	Future development
<ul style="list-style-type: none"> <li>- B2SAFE interface;               <ul style="list-style-type: none"> <li>- upload,download, list, delete</li> </ul> </li> <li>- B2ACCESS integration               <ul style="list-style-type: none"> <li>- both dev and prod</li> </ul> </li> <li>-Prototype deployed</li> <li>-Few test users</li> <li>- Unittest and CI</li> <li>- Python3.5               <ul style="list-style-type: none"> <li>- core generalization</li> <li>- pluggable services</li> </ul> </li> <li>- Container deployment</li> <li>- Dockerized B2SAFE               <ul style="list-style-type: none"> <li>- iRODS 4.1.8</li> <li>- GSI plugin 1.3</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- <b>B2ACCESS flow w/o browser</b></li> <li>- Alternative to iCommands wrapping</li> <li>- <b>Start a data pilot</b></li> <li>- Biweekly releases with changelog</li> <li>- Connecting to B2SAFE               <ul style="list-style-type: none"> <li>- dev</li> <li>- prod</li> </ul> </li> <li>- Deploy docs with Docker</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Benchmarks/profile</b> <ul style="list-style-type: none"> <li>- Celery tasks?</li> </ul> </li> <li>- Get the PID of an uploaded file</li> <li>- PID endpoint (PID resolution)</li> <li>- <b>Deploy docs w/o docker</b></li> <li>- Improve coverage               <ul style="list-style-type: none"> <li>- <b>B2ACCESS mocking</b></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Metadata management with GraphDB (&lt;-&gt;B2SAFE)</li> <li>- workspace domain               <ul style="list-style-type: none"> <li>- posix volume / users</li> </ul> </li> <li>- internal endpoints</li> <li>- OS support               <ul style="list-style-type: none"> <li>- Packaging</li> <li>- Python2</li> </ul> </li> </ul>