

ESAP DB on Demand

- Through ESAP, users would be able to
 - Use the ESAP platform in notebooks through a Python package (the ESAP python client)
 - Create datasets (=databases) and Tables inside these datasets. This DB service, would be offered by the ESAP platform (local to the institution first, with the long-term goal of being managed by EOSC)
 - Query ESCAPE datalake, VO and csv files using SQL and store the results in a Table (temporary or persistent) managed by ESAP.
 - Use these tables to perform SELECT or JOIN with other tables
 - Export these tables as csv or JSON or pandas dataframes.

```
CREATE TABLE `project-id.dataset-id.query-id` AS
SELECT
  RA,
  dec,
  source_id,
  flux,
  CAST(source_class AS string) AS source_class
FROM
  `eosc-public-data.dataset-id.table-id`
WHERE
  flux > 10
  AND RAND() < 0.001
```

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- Examples of methods

```
from esap import ESAP
client = ESAP(...credentials..., project-id)
dataset = client.create_dataset("mydataset-id")
table = client.query(sql_query, persistent=True)
table = client.get_table(dataset_id, table_id) # Lazy loading
for row in table:
    do_stuff_with(row)
data = table.aspandas()
```