



ESCAPE

European Science Cluster of Astronomy &
Particle physics ESFRI research Infrastructures

ESAP - Training workshop Deploying ESAP

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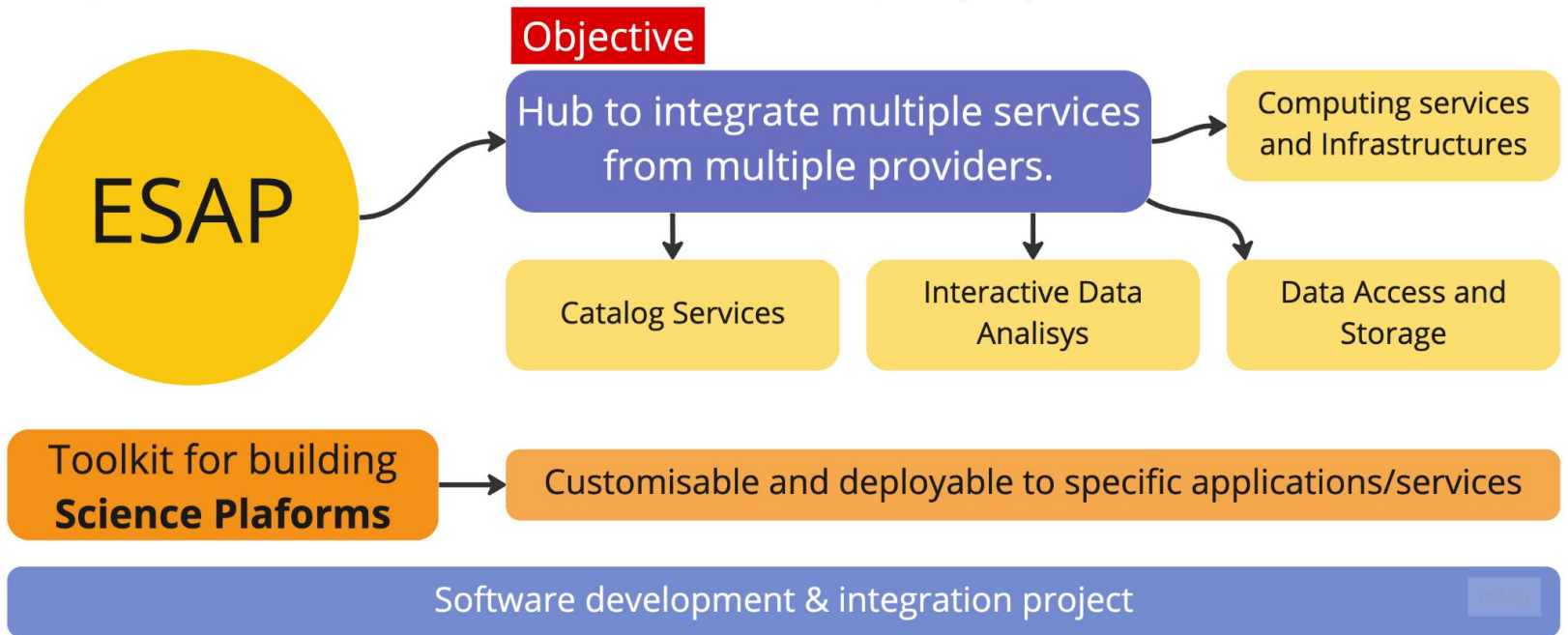


Introduction



Deploying ESAP: Introduction

>> ESAP → ESFRI Science Analysis Platform



>> Flexible, extensible and robust

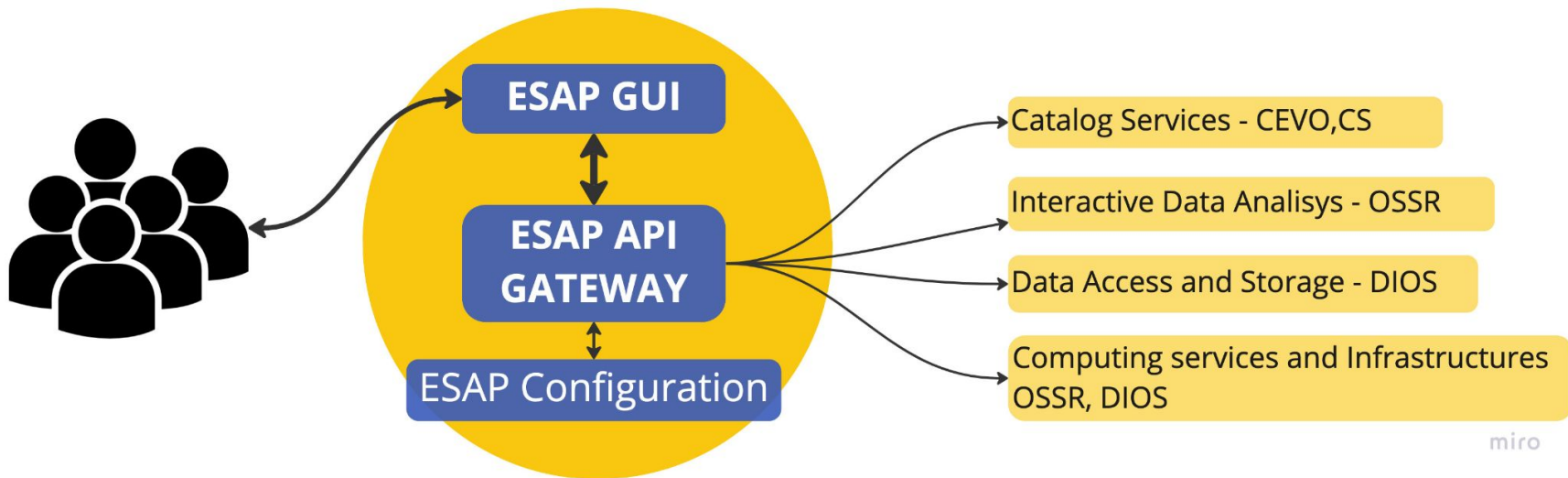


Architecture and structure of ESAP



Deploying ESAP: Architecture of ESAP

- >> Two main services
 - >> Web User Interface → frontend
 - >> API Gateway → backend

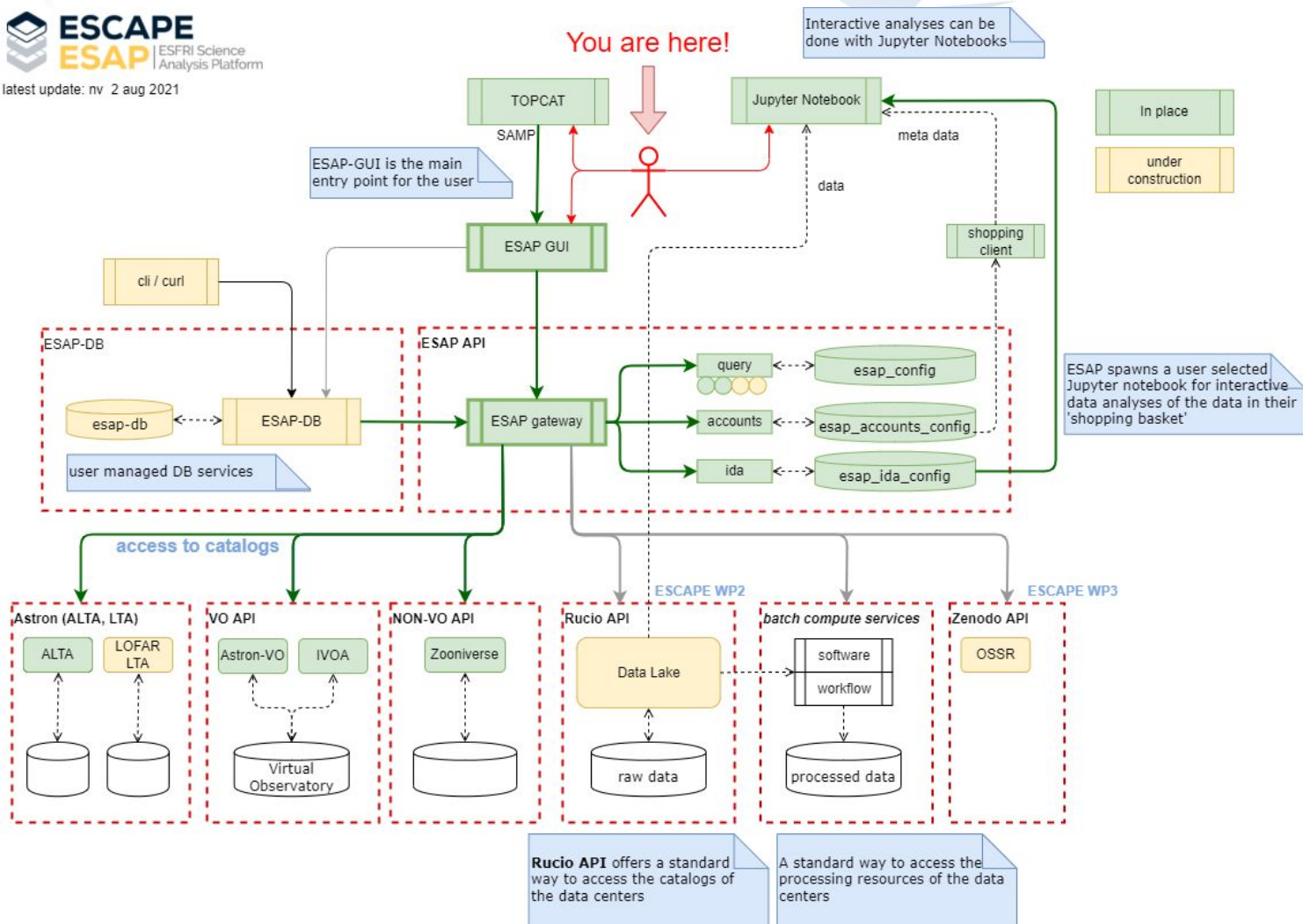


miro



Deploying ESAP: Architecture of ESAP

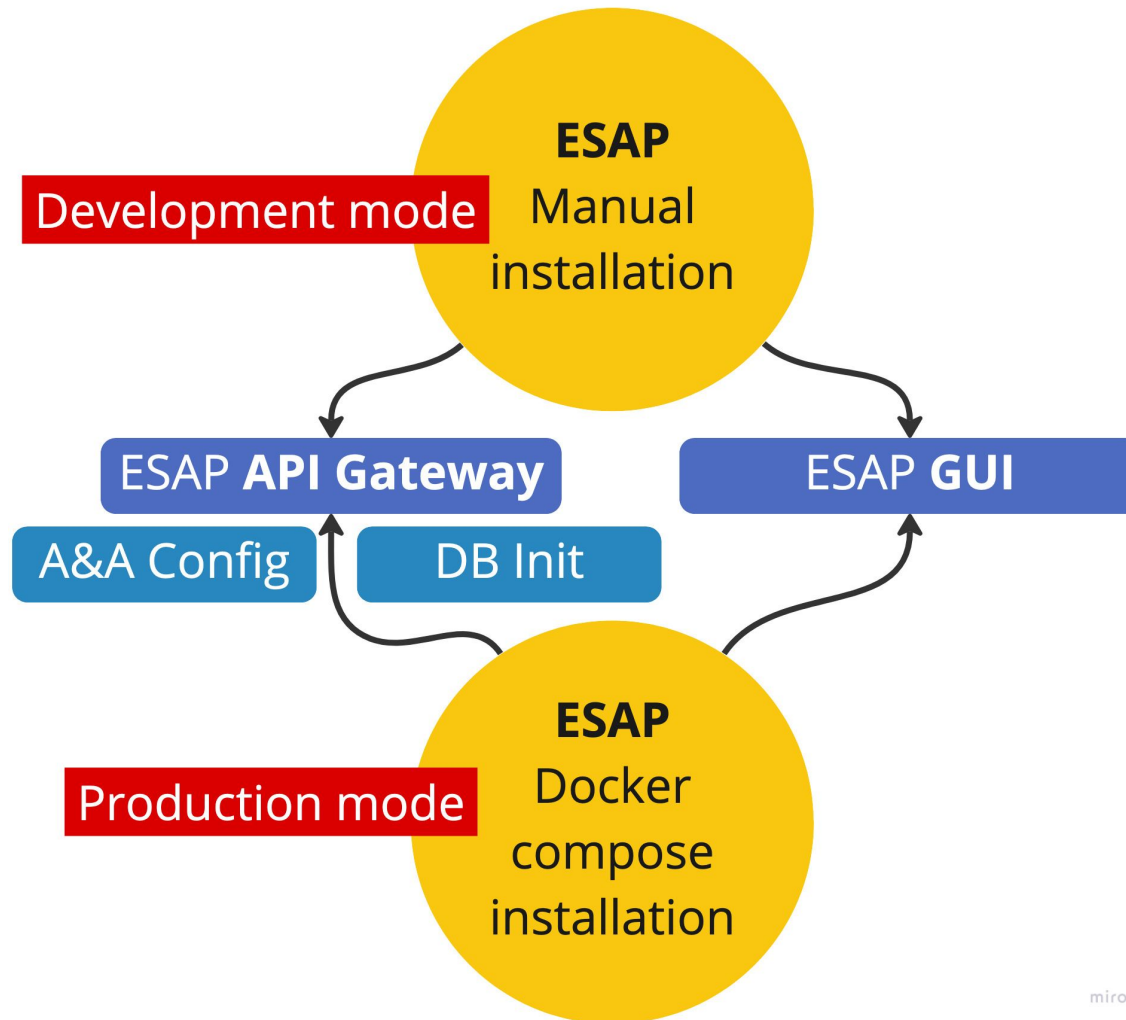
ESCAPE
ESAP ESFRI Science
 Analysis Platform
 latest update: nv 2 aug 2021



Modes of installation and deployment



Modes of installation and deployment



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Modes of installation and deployment

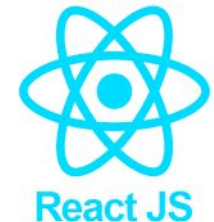
Manual installation

>> Requirements:

- Backend:
 - Python ≥ 3.8
 - Django ≥ 4.0
- Frontend:
 - NodeJS ≥ 12
 - ReactJS $\geq X$



django



Modes of installation and deployment

Manual installation

- >> ESAP API Gateway Installation
 - >> Download repository
 - >> Install ESAP API Gateway
 - >> A&A OIDC configuration
 - >> DB population
 - >> Run ESAP API Gateway service



Modes of installation and deployment

Manual installation

>> ESAP GUI Installation

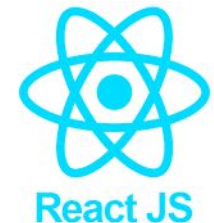
>> Download repository

>> Install ESAP API Gateway

>> Run ESAP GUI

>> Validate installation of

ESAP API Gateway and ESAP GUI



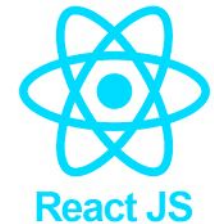
Modes of installation and deployment

Manual installation

>> Hands-on ESAP



django



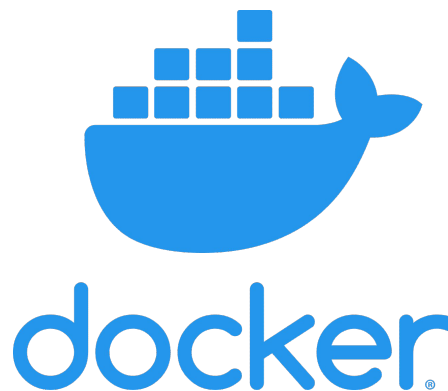
Modes of installation and deployment

Docker-based installation

>> Recommended for production environments

>> Requirements:

- `docker version >= 18.0`
- `docker-compose` installed



Modes of installation and deployment

Docker-based installation

>> Components of the docker-compose installation

Backend

```
20  esap_api:
21     container_name: esap_api
22     image: git.astron.nl:5000/astron-sdc/escape-wp5/esap-api-gateway:latest
23     expose:
24         - "80000"
25     networks:
26         - esap_network
27     ... ..
```

Frontend

```
74  esap_gui:
75     image: git.astron.nl:5000/astron-sdc/escape-wp5/esap-gui:latest
76     restart: always
77     expose:
78         - "80"
79     networks:
80         - esap_network
81     ... ..
```



Modes of installation and deployment

Docker-based installation

>> Components of the docker-compose installation

Worker

```
89  esap_worker:
90     image: git.astron.nl:5000/astron-sdc/escape-wp5/esap-worker:latest
91     restart: always
92     networks:
93         - esap_network
```

Load balancer - Rev. Proxy

```
3  traefik:
4     image: traefik:2.8 # or any later version
5     ports:
6         - "8080:8080" # http
7         - "8081:8081" # Traefik Dashboard
8     volumes:
9         - $PWD/traefik/local.yml:/etc/traefik/traefik.yml
10        - /var/run/docker.sock:/var/run/docker.sock # see Security considerations
11     networks:
```



Modes of installation and deployment

Docker-based installation

>> Components of the docker-compose installation

MQ Broker

```
99     rabbitmq:  
100     container_name: esap_api_rabbitmq_queue  
101     image: rabbitmq:3.9-alpine
```

>> A&A configuration - environment vars (.env file)

```
...  
OIDC_OP_JWKS_ENDPOINT=https://iam-escape.cloud.cnaf.infn.it/jwk  
OIDC_OP_AUTHORIZATION_ENDPOINT=https://iam-escape.cloud.cnaf.infn.it/author  
OIDC_OP_TOKEN_ENDPOINT=https://iam-escape.cloud.cnaf.infn.it/token  
OIDC_OP_USER_ENDPOINT=https://iam-escape.cloud.cnaf.infn.it/userinfo  
...
```



Modes of installation and deployment

Docker-based installation

>> Running ESAP from docker compose

```
docker compose -f docker-compose-local.yml up -d
```

>> Stopping ESAP from docker compose

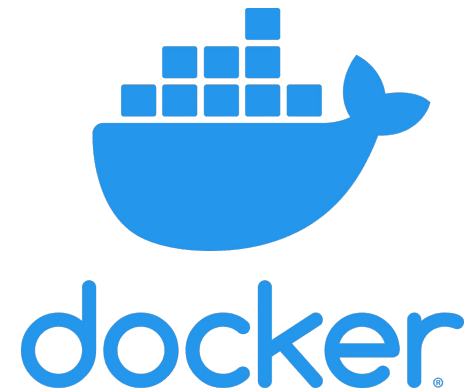
```
docker compose -f docker-compose-local.yml down
```



Modes of installation and deployment

Docker-based installation

>> Hands-on ESAP



Repositories and documentation



Repositories and documentation

>> Repositories

ESAP Deployment - docker containers

<https://git.astron.nl/astron-sdc/escape-wp5/esap-deployment>

ESAP API Gateway

<https://git.astron.nl/astron-sdc/escape-wp5/esap-api-gateway>

ESAP GUI

<https://git.astron.nl/astron-sdc/escape-wp5/esap-gui>

>> Documentation

<https://git.astron.nl/astron-sdc/escape-wp5/esap-api-gateway/-/wikis/home>



Final remarks and future developments



Final remarks and future developments

- >> Flexible, robust and very extensible
- >> Different types of installation:
local development and
container-based production deployment.
- >> Ready to be scaled
- >> Deployment on HELM in progress

