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EarthSelf service

The AI and EO-ready Cloud agnostic and highly scalable environments for service development and exploitation

www.snapearth.eu

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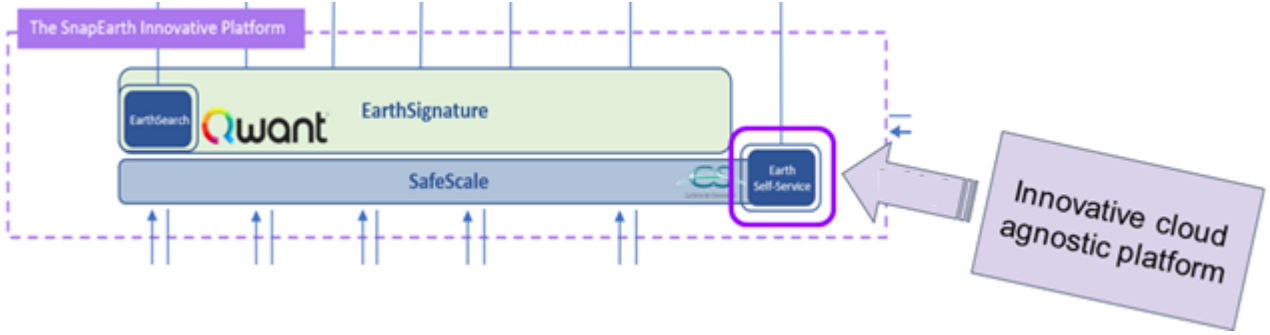
What is EarthSelf ?



EarthSelf Service is the proposed service enabling any service providers and the 4 SnapEarth Pilot projects to create new value-added services by offering them:

- ✓ The ability to deploy AI and EO-ready Cloud agnostic and highly scalable environments thanks to SafeScale solution
- ✓ To exploit the results of the EarthSignature database
- ✓ Additional services, as: dedicated web portal for hardware resource reservation, cloud comparator service, helpdesk portal and support, etc.

EarthSelf use case (the need)

- A service provider wants to develop a new service or exploit an existing one. For that, he wants to benefit from cloud technologies to:
  - avoid expensive infrastructure Investments;
  - optimise its costs throughout its product lifecycle;
  - be able to face significant traffic ramp up.
- But he is not familiar with Cloud technologies, Cloud offers, Cloud architecture, Cybersecurity etc. and has neither time nor money to dig in,
- And he is scared of an asymmetrical relationship between the big Cloud providers and its company (vendor lock-in, IP grabbing etc.).

EarthSelf offer

- Independent comparison of Cloud providers for cost optimisation and time saving;
- Deployment of cloud development/production environments with:

  - ✓ No vendor-lock-in (the environments are cloud agnostic);
  - ✓ Guaranteed service-level agreement;
  - ✓ Built-in infrastructure monitoring;
  - ✓ Built-in Secure user environnements;
  - ✓ IT and EO thematic helpdesk.

Cloud/Data providers comparator

Infrastructure management

Network & Service securing

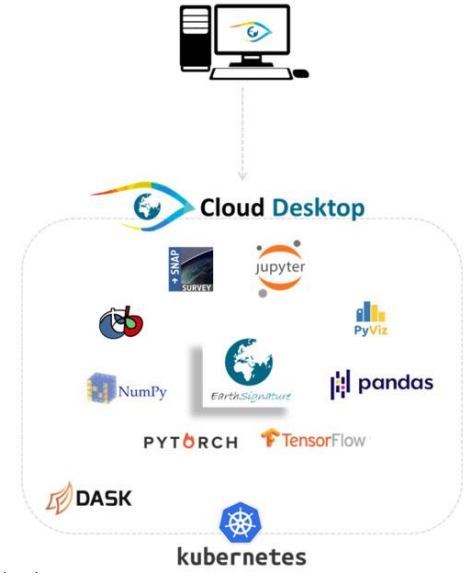
Multi-Cloud

EarthSelf offer - Service Extension

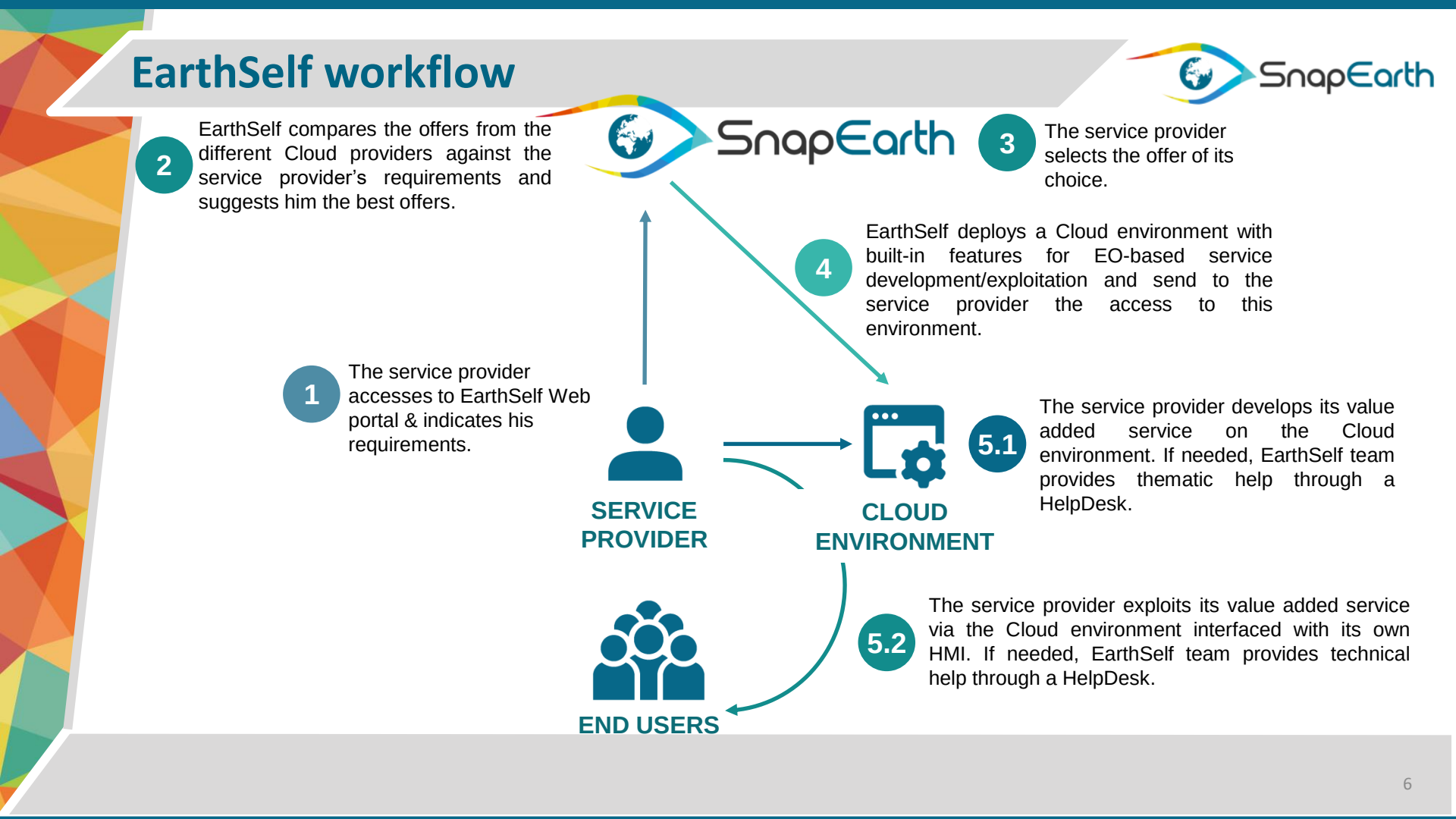
Cloud Desktop

SnapEarth offers optional Cloud Desktop service (if agreements) to provide users with a graphical environment:

- ✓ A Jupiter desktop to integrate several ready to use tools, such as EO image processing libraries
- ✓ Scientific data visualization to make data visualizations easier to use, learn and more powerful
- ✓ Datamining features for automatically searching large stores of data to discover patterns and trends that go beyond simple analysis
- ✓ Distributed computing with dask, for parallel and distributed computing
- ✓ More automatized deployment on cloud.
- ✓ AI / machine learning tools
- ✓ Human helpdesk with a support with qualified teams to help to build up European EO cloud projects



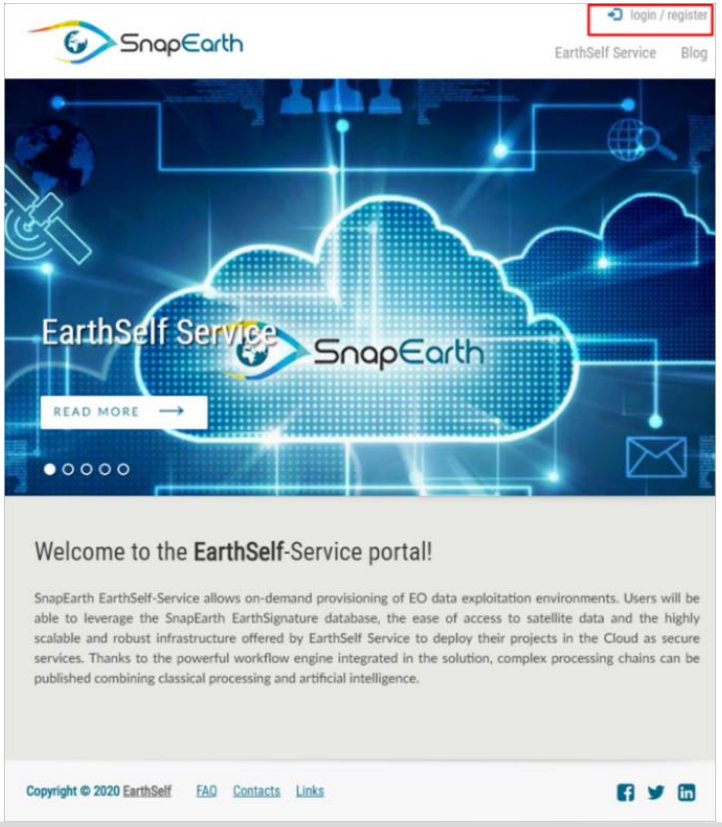
EarthSelf workflow



EarthSelf Portal

What is EarthSelf Portal ?

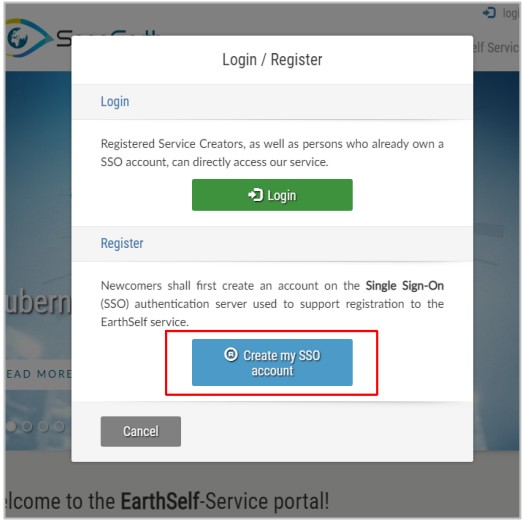
- Is an online system that Service Providers can use to manage their own EO value-added services using personal accounts.
- Enables them to submit customized requests based on their needs and to gain access to necessary information concerning cluster accessibility.

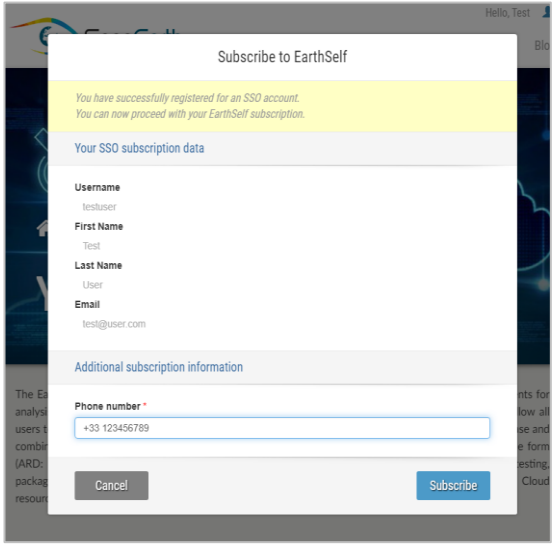


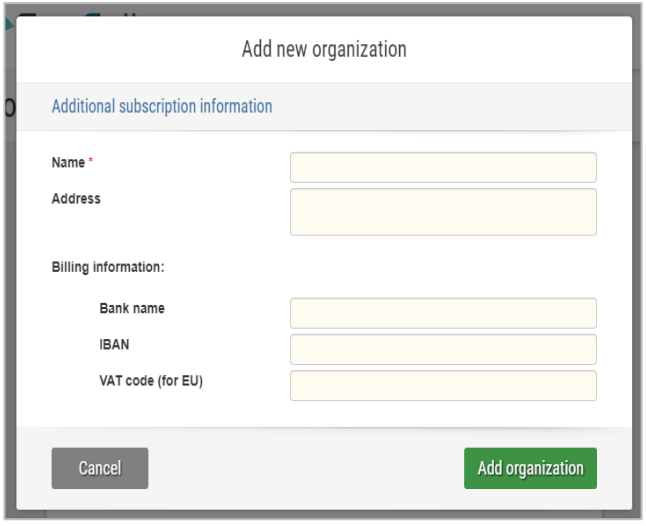
Managing EarthSelf account

Accessing the EarthSelf Portal

EarthSelf Portal is a restricted area, the user must first register for an SSO account and then subscribe to EarthSelf services.



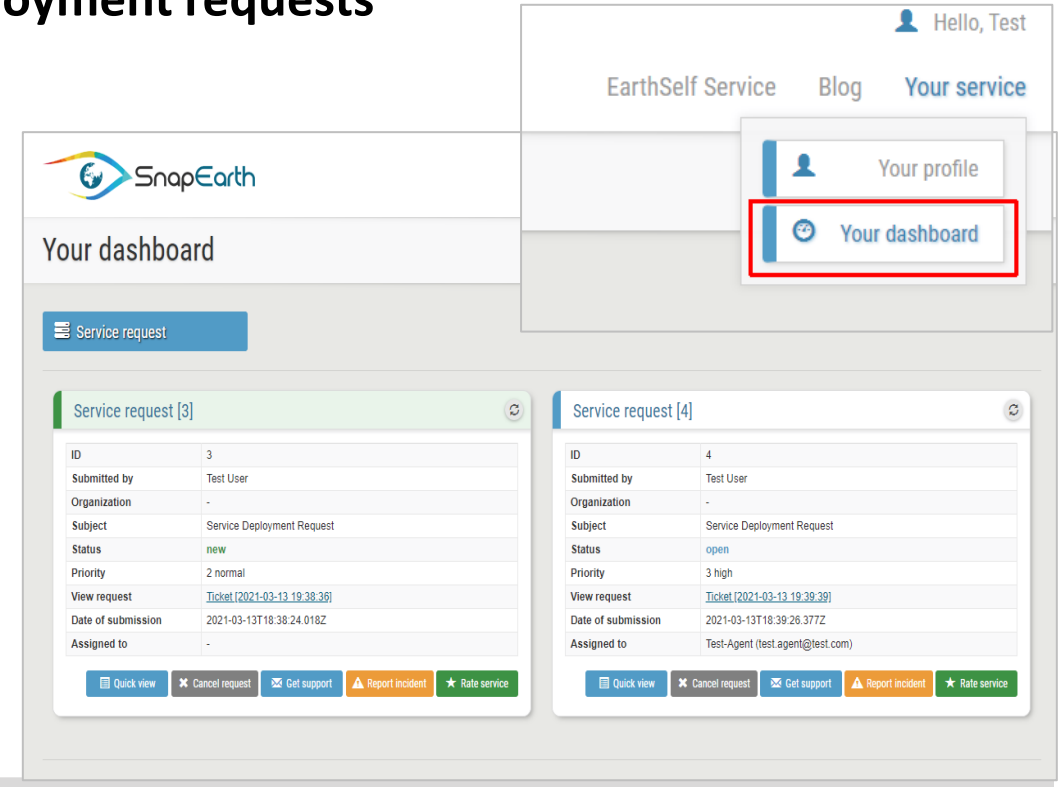




Managing EarthSelf service environment

Service deployment requests

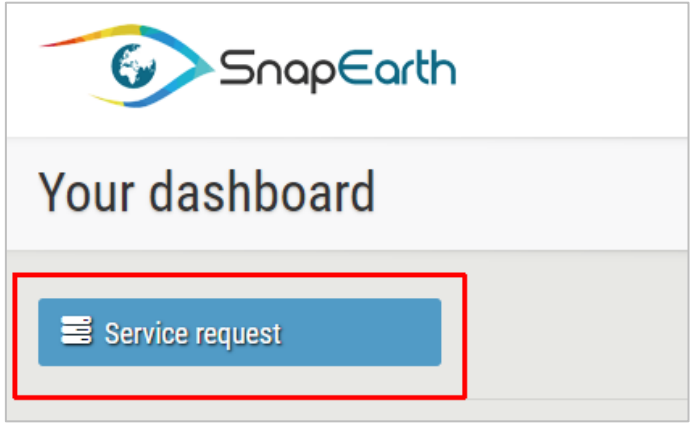
- Authenticated users have access to their service environment through “Your dashboard” portal section.
- Users can then manage their requests, get information about their status, request additional information or raise an issue if necessary.



Managing EarthSelf service environment

Request a new service deployment

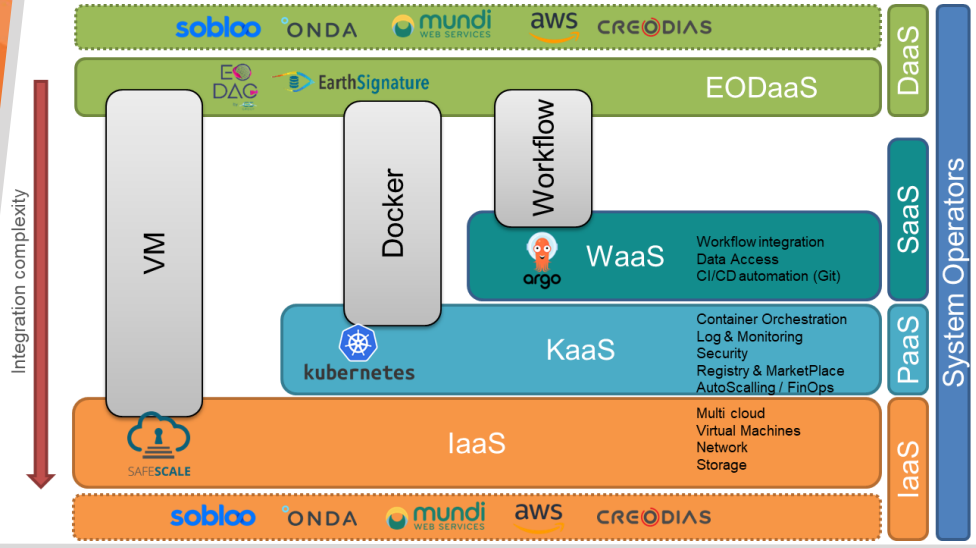
- User can access the Service Deployment Request and is guided through several steps:
    1. Choose the deployment type
    2. Set up your deployment type
    3. EO data information
    4. Customize search
    5. Select provider and machine configurations
    6. Review and submit the service deployment request

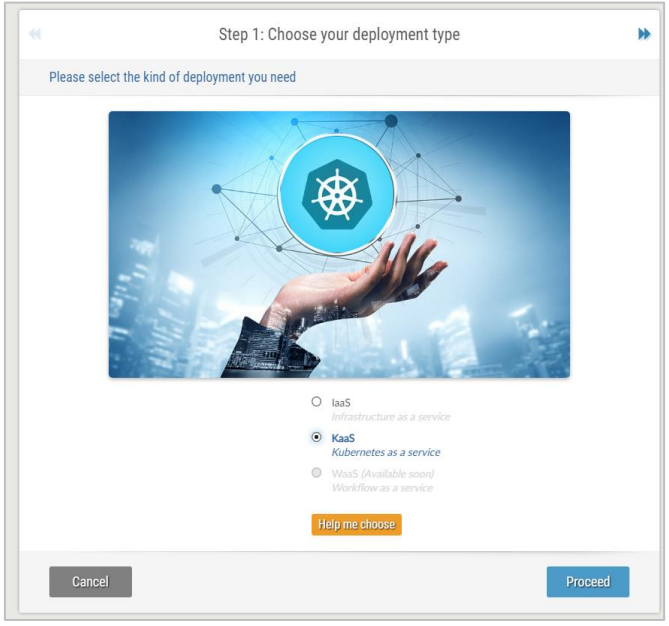


Managing EarthSelf service environment

1. Choose the deployment type

- User should choose the type of deployment: Infrastructure as service “IaaS” (Virtual Machines), or Kubernetes as a service “KaaS” (Docker) , or Workflow as service ”WaaS” (Workflow) ?





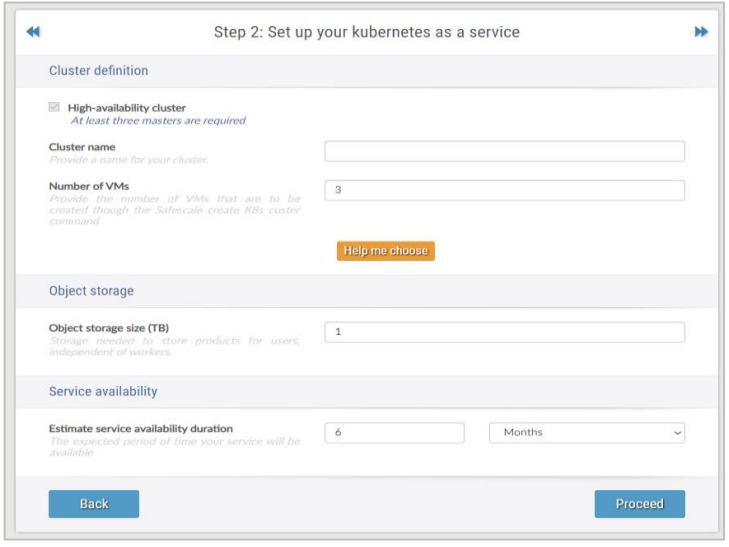
EarthSelf deployment type selection

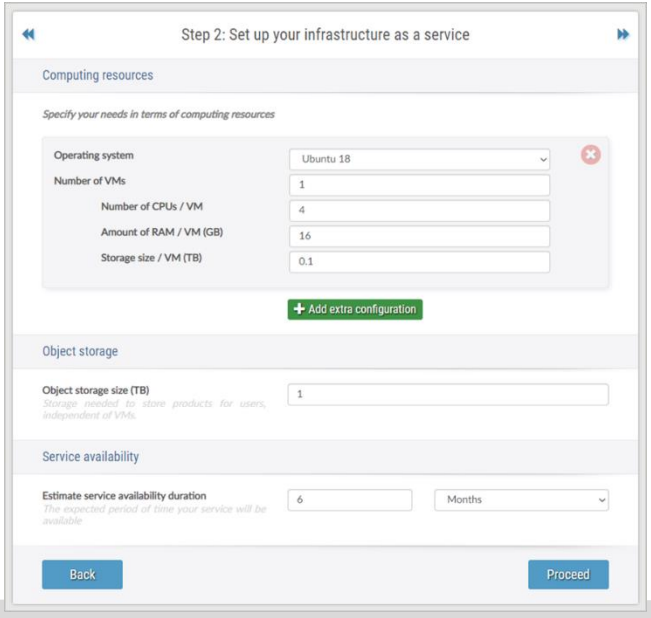
Note: the WaaS option is not yet available for the moment

Managing EarthSelf service environment

2. Set up your deployment type

- User can choose one of these two options (IaaS and KaaS) and be redirected to set up process according to the selected deployment type.

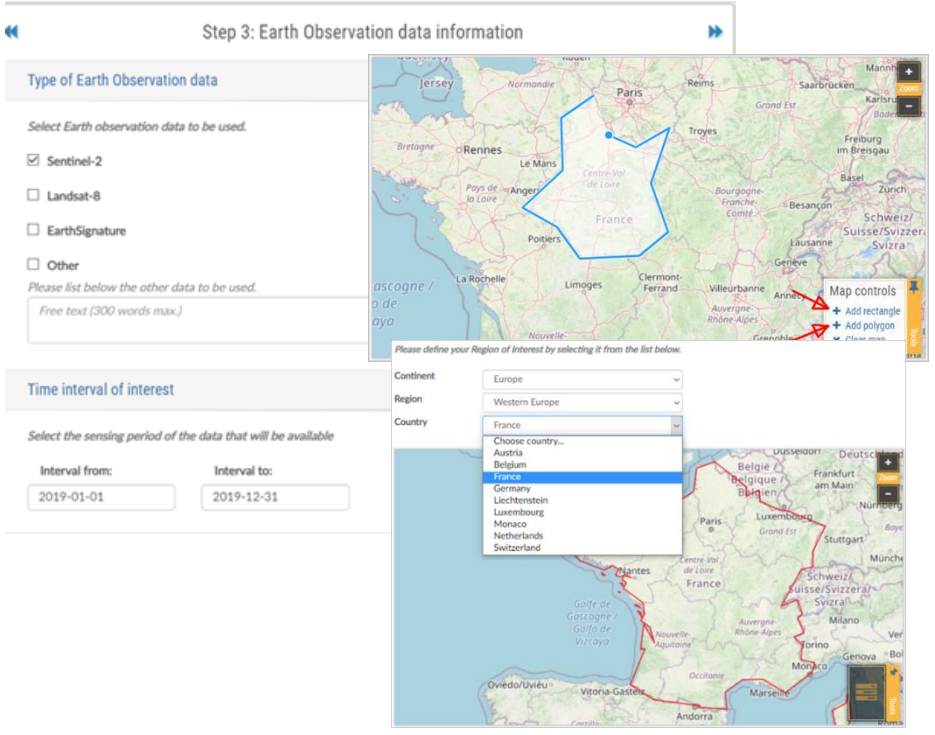




Managing EarthSelf service environment

3. EO data information

- User must provide information about:
  - **EO data to be used**: can select:
    - ❑ Sentinel-2
    - ❑ Landsat-8
    - ❑ EarthSignature database
  - **Time interval of interest**: can provide an interval of time defining the sensing period of the data that will be available.
  - **Region of interest**: can define the region of interest for the EO data, using an interactive map

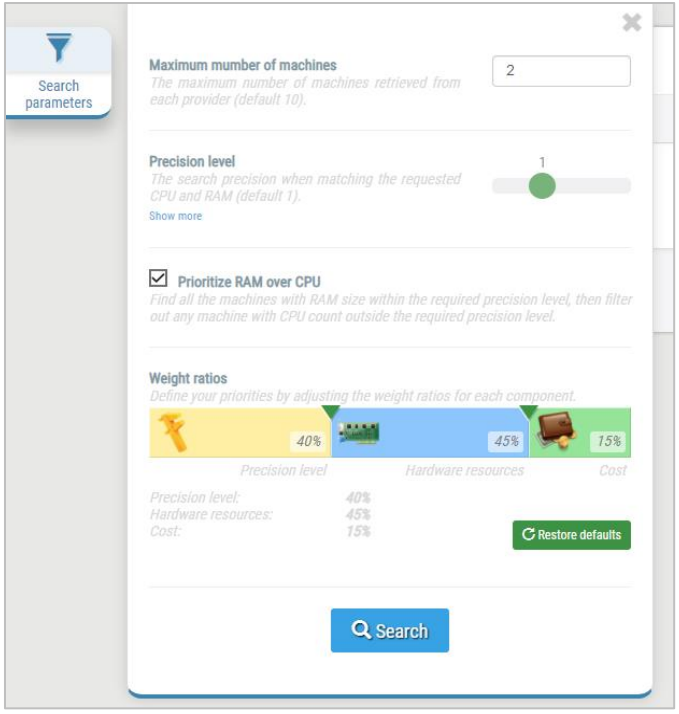


Managing EarthSelf service environment

4. Customize search

- User can configure the Suggest Engine search algorithm and select a provider from the returned list

The Suggest Engine is an algorithm that searches for virtual machines from several cloud providers, machines that satisfy the configuration requirements defined by the user.



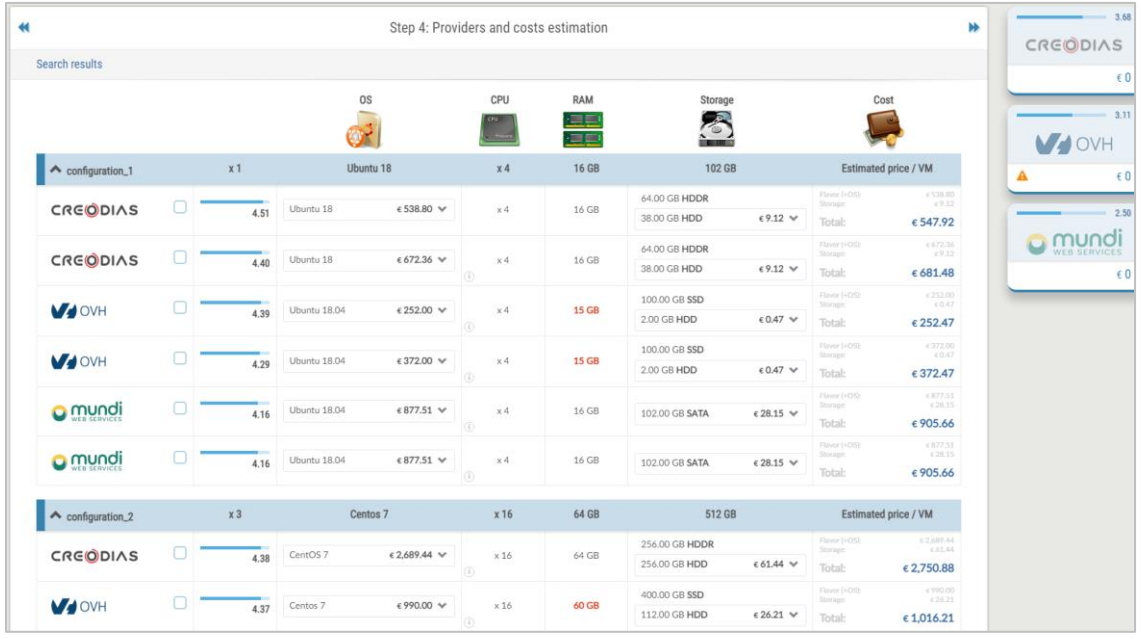
Managing EarthSelf service environment

5. Select provider and machine configurations (1/3)

The Suggest Engine results are grouped in two categories:

i. Cloud providers
ii. Virtual machines

Each provider in the returned list is depicted as a container which functions as a shopping cart



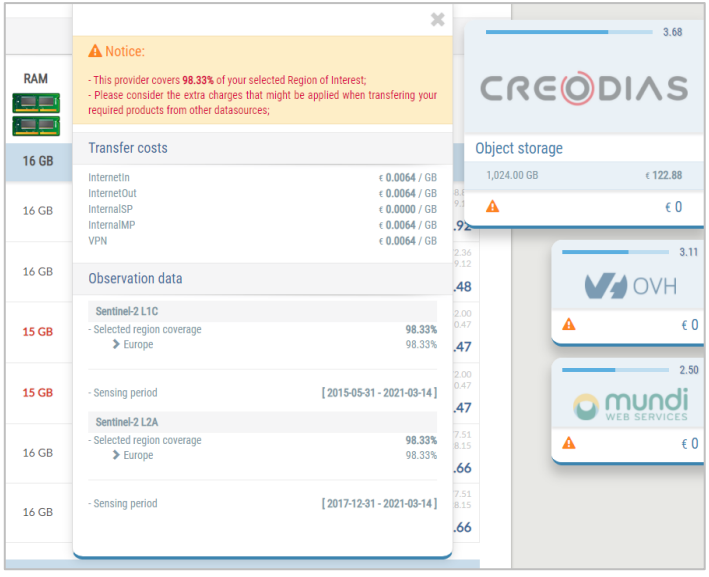
Managing EarthSelf service environment

5. Select provider and machine configurations (2/3)

i. Cloud providers

- The provider details panel displays information related to EO data request:
  - ✓Region coverage, sensing period requirement not being satisfied or extra costs due to certain provider limitations.
  - ✓Transfer costs.

The user must take into consideration these extra costs, which are not reflected in the final estimation cost for the request.



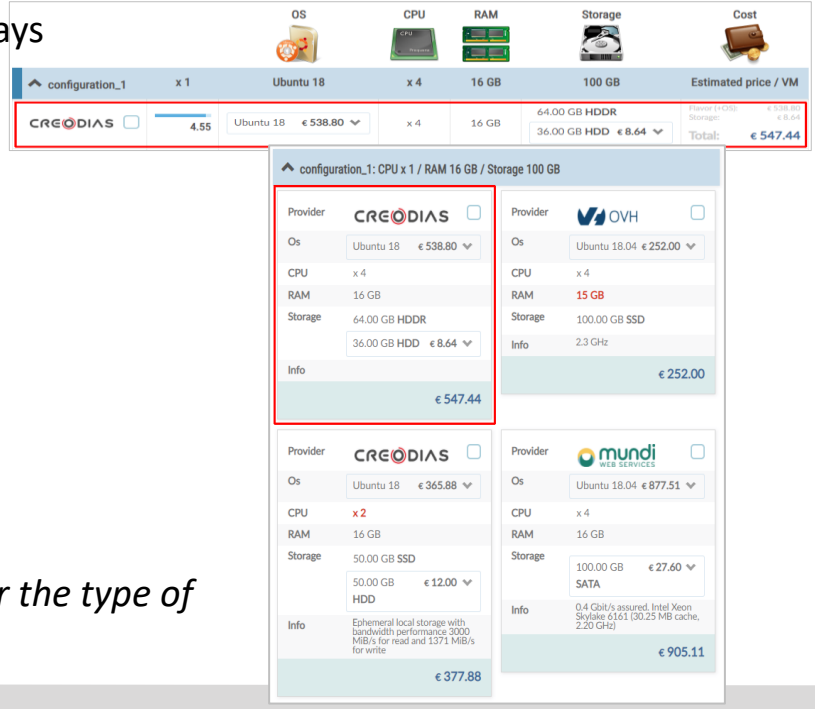
Managing EarthSelf service environment

5. Select provider and machine configurations (3/3)

ii. Virtual machines

- Virtual machines can be displayed in two different ways
- Each row/card provides information about:
  - ✓ Cloud provider logo/name;
  - ✓ Suggest Engine score;
  - ✓ Operating system;
  - ✓ CPUs count;
  - ✓ Additional hardware information;
  - ✓ Amount of RAM;
  - ✓ Storage;
  - ✓ Estimated cost for selection;

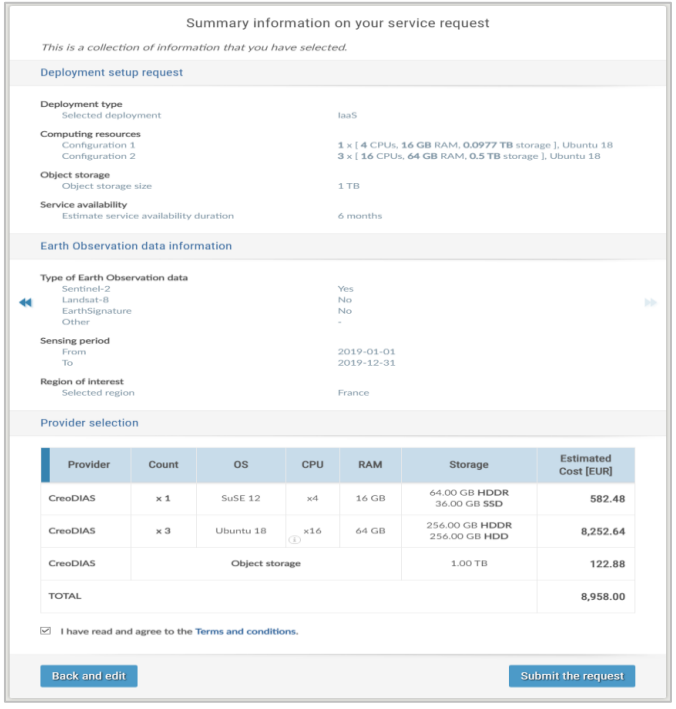
If necessary, the user can change the operating system or the type of extra storage



Managing EarthSelf service environment

6. Review and submit the request form

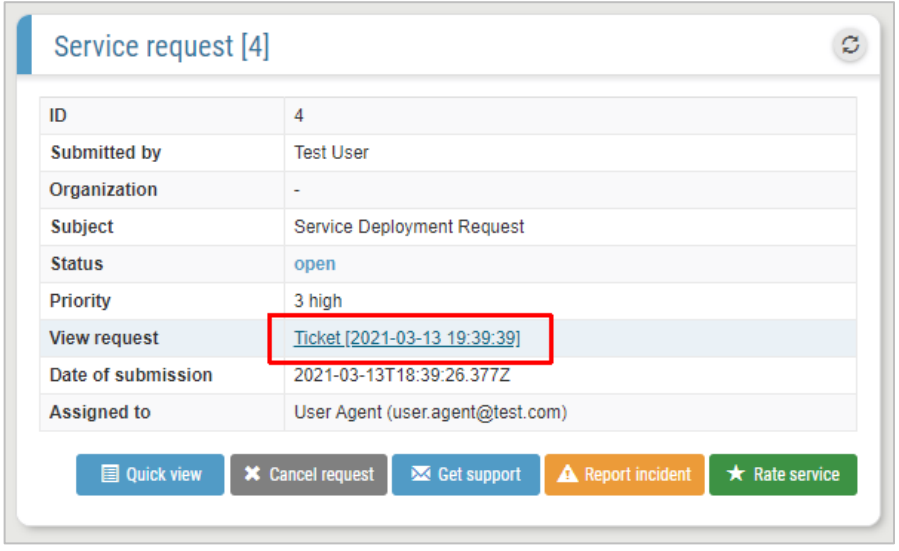
- If the user is satisfied with the selection, he/she can move to the last step, reviewing and submitting the request, after the agreement with the Terms and conditions



Managing EarthSelf service environment

Follow the service request (1/2)

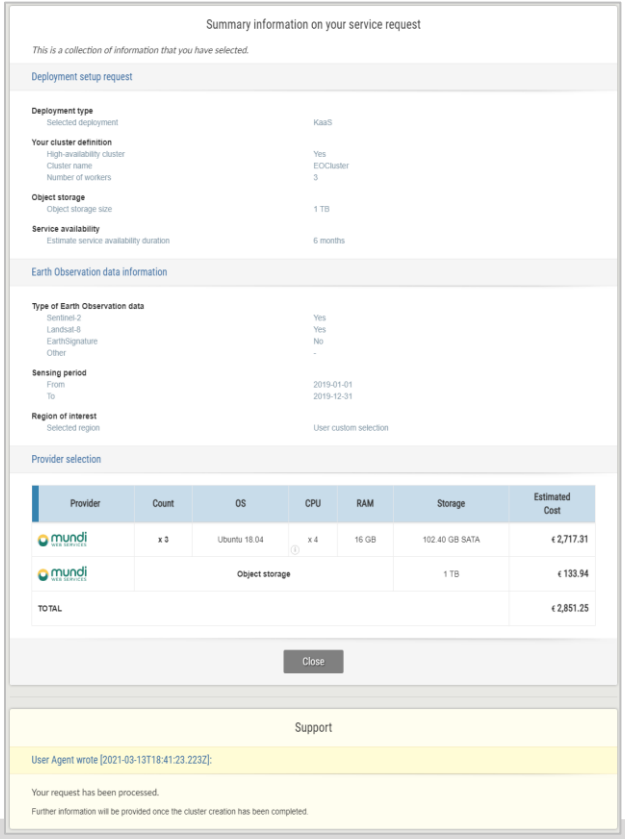
- Following the link provided in each card on the dashboard, the user can inspect each request status and the responses from helpdesk service.



Managing EarthSelf service environment

Follow the service request (2/2)

- The service request page is similar to the summary information page on the request form.
- Any help provided by the helpdesk service is displayed at the bottom of the page.



Various links for EarthSelf

- EarthSelf web portal public link will be available soon:
  https://snapearth.csgroup.space

- The user manual of EarthSelf service “D4.2 EarthSelf Service Portal V1”:
  https://snapearth.eu/resources/deliverables

- EarthSelf Video:
  https://www.youtube.com/watch?v=tiwNm8qZvio&feature=emb_title

Contact

- Project website: https://snapearth.eu/
- EarthSelf website: https://snapearth.csgroup.space
- Newsletter: https://snapearth.eu/resources/newsletters
- Social Media:
  - Facebook: https://www.facebook.com/SnapEarth-101390444737532/
  - Twitter: https://twitter.com/Snap_Earth
  - LinkedIn: https://www.linkedin.com/showcase/snapearth/
- General questions: contact@snapearth.eu
- Specific solutions:
  - EarthSelf CS GROUP France team: yasmine.boulfani@csgroup.eu & sebastien.besombes@csgroup.eu
  - EarthSelf CS GROUP Romania team: nicu.stancioi@c-s.ro & kraftek@c-s.ro & cosmin.udroiu@c-s.ro

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Thank you

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