

CNES Cloud Support for SWOT project hosting



What would you get?

- **Free hosting** of SWOT Projects on CNES HPC infrastructure in Toulouse
- **High processing power** connected to data
- **Integrated SWOT data** and **specialized Tools**
- **Access to additional resources/data**
- **Technical support** for smooth sailing (Helpdesk)
- **Restricted (if necessary/required) Cloud environment**

How to apply?

Complete this form on **AVISO website***



CNES High-Performance Computing (HPC) and Cloud services

Your SWOT Science Team Project can be hosted on the CNES HPC/Cloud infrastructure.

How to apply:

Please complete the following form to submit your SWOT project application for consideration by the CNES HPC/Cloud support team. We will promptly review your submission and will be in touch at the earliest opportunity.

Début : 1 / 2

Contact information

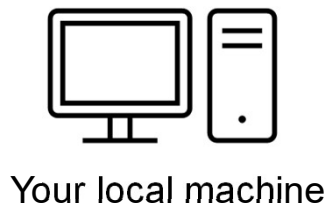
Name *

Institution/Organization *

Contact email *

Country *

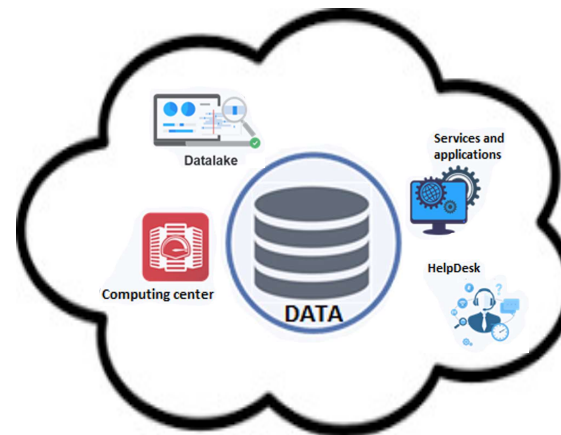
Your project



Your local machine



No cost



*<https://www.aviso.altimetry.fr/en/missions/current-missions/swot/utilizing-cnes-hpc-infrastructure-for-swot-project-hosting.html>



Environment

- Research-orientated python librairies
- SWOT-dedicated toolbox
- Processing power
- Simplified parallel computing
- Remote Desktop...



Data

- SWOT ocean data (L2/L3)
- Easy access to other data sets
- Catalog requests & download tools...



Documentation

- Dedicated use case examples
- Documentation
- Tutorials...



User Support

- SWOT data training
- Cluster working methods
- Code optimization
- FAQ & Helpdesk...

How to access?



Interactive access through web browser <https://jupyterhub.cnes.fr>



Home

Token

germinc

Logout

Server Options

Select the environment:

You can select a Virtual Research Environment (VRE) for starting your Jupyterlab instance.

It usually provides domain or project software and libraries packaged together and ready to use.

Be aware that you can only run VRE if you belong to the associated user group, you will get an error if not.

If you've never heard of VREs, just use the default environment.

For help please contact [HPC support](#)

Check to use latest version of VRE (might be unstable)

[HPC6G - LATEST] VRECESWOT (swotce_exp, swotce_guest groups only)

Select a job profile:

[HPC6G] VRECESWOT - Batch g2022 (RH8/AMD) - 1 core, 8 GB, 12 Hours

CNES HPC hardware resources

Start

CNES JupyterLab Interface



The screenshot displays the JupyterLab interface with several components:

- Launcher:** A row of icons for different environments and tools, including Python 3 (ipykernel), CESWOT, CESWOT methods, Confluence documentation, Desktop, Documentation, Gitlab, MLFlow, R, and VS Code IDE.
- Console:** A section for running code in different kernels, showing Python 3 (ipykernel), CESWOT, and R.
- Other:** A section for other file types, including Terminal, Diagram, Text File, Markdown File, Tensorboard, CSV File, Python File, and R File.
- Code Editor:** A window showing a Python script named `compare_netcdf.py` with the following code:

```
1 #!/usr/bin/env python
2
3 import sys
4 import argparse
5 import logging
6 #import numpy as np
7 import xarray
8 import netCDF4 as nc
9
10 def compare_list(refList,testList):
11
12     missingItems = [x for x in refList if x not in testList]
13     newItems = [x for x in testlist if x not in refList]
14     return missingItems, newItems
15
16
17
18 def main():
19
20     parser = argparse.ArgumentParser()
```
- Jupyter Notebooks:** A window showing a Jupyter Notebook with the title "Data on land have bad values. Mask seems not to be properly applied". The notebook contains the following code:

```
[3]: import panel
import vador
import collection
import numpy as np
panel.extension()

[4]: zcoll = "/work/scratch/duacs_proto_karin/duacs_swot/20230414_010004/zcoll/"

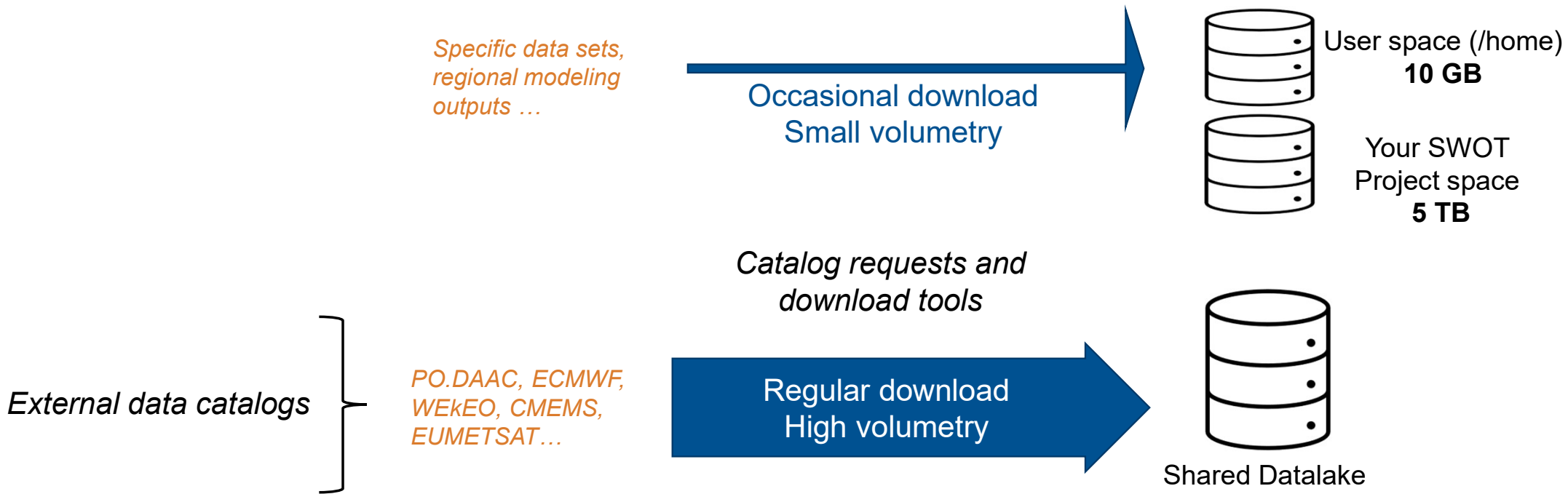
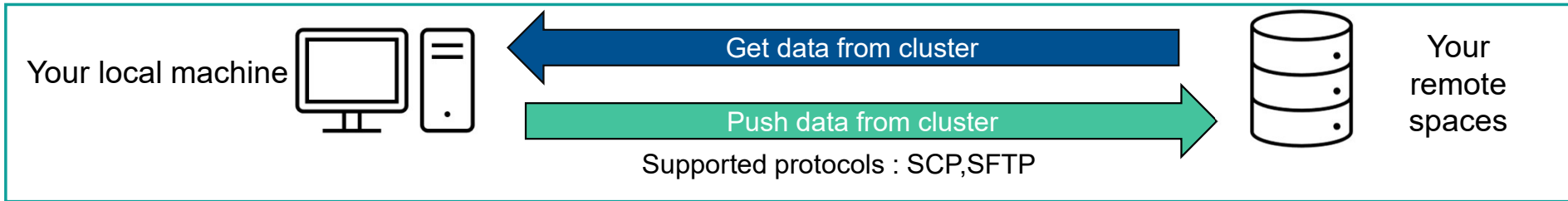
[5]: widgets, params = vador.ZcSwath.widgets(zcoll)

[6]: sw = vador.ZcSwath(
    [ssh_karin_2'], **params.options(clim_percentile=5, cmap='Spectral_r', show_grid=True, colorbar=True
panel.Row(sw, widgets)

[7]: ssh_karin_2
```

The notebook also displays a world map with a color scale and a legend.
- Remote desktop:** A window showing a remote desktop session with the text "Remote desktop" and "QGIS 3.26 Buenos Aires".

External data retrieval – Data access from other catalogs



CNES Cloud support

- SWOT ST projects
- Application form

Getting started

- Cluster working methods
- HPC training
- SWOT data training
- Documentation, examples and tutorials

Work on your project

- HPC support
- Code optimization
- FAQ & Helpdesk



SWOT Project set up

- Creating the Project Workspace
- Account creation
- ACL (Access Control List) management
- Code installation / coding environment installation
- Upskilling tools