Using EOSC Future public cloud adoption funding within SURF Research Cloud
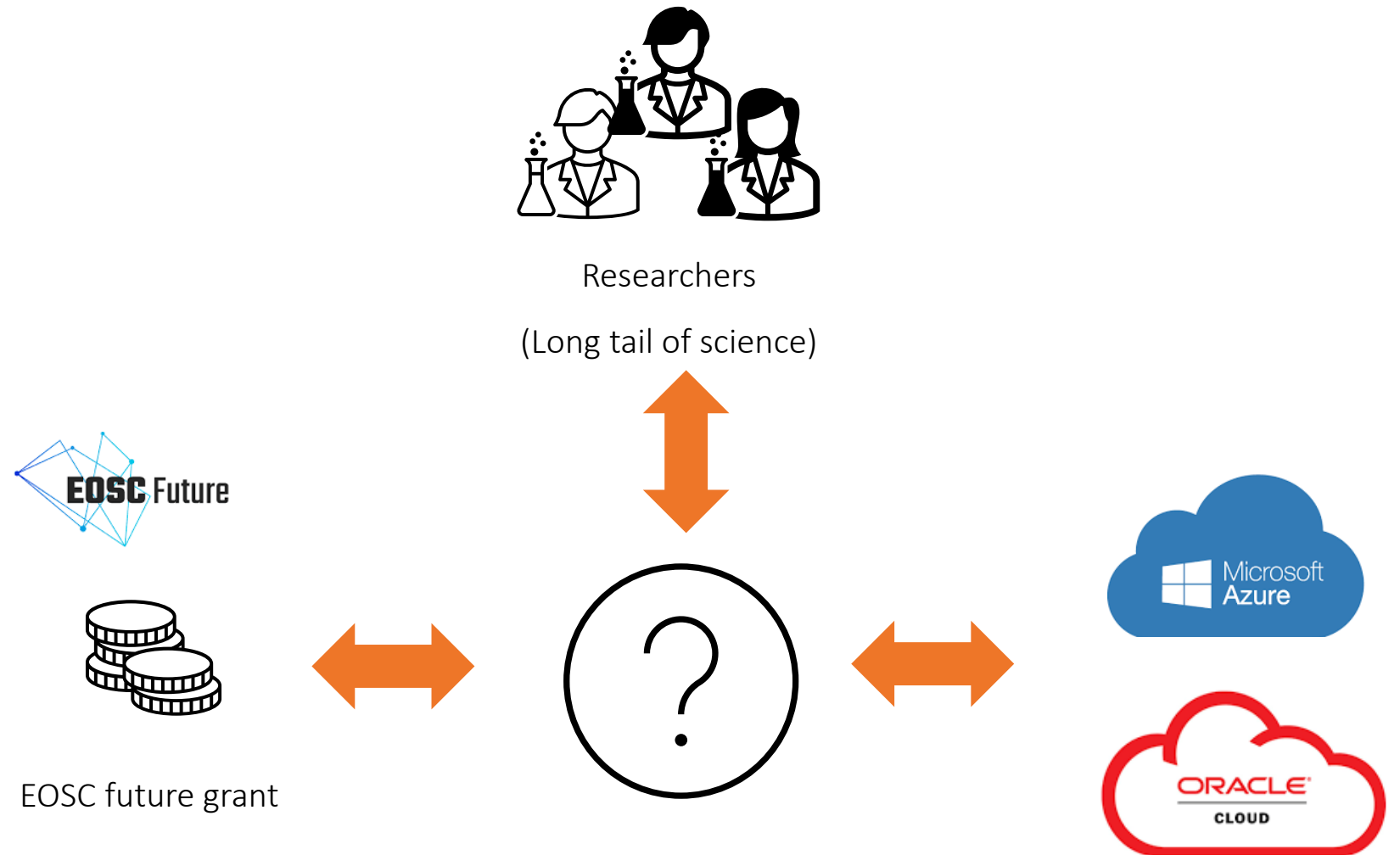
Martin Brandt

21 September 2023

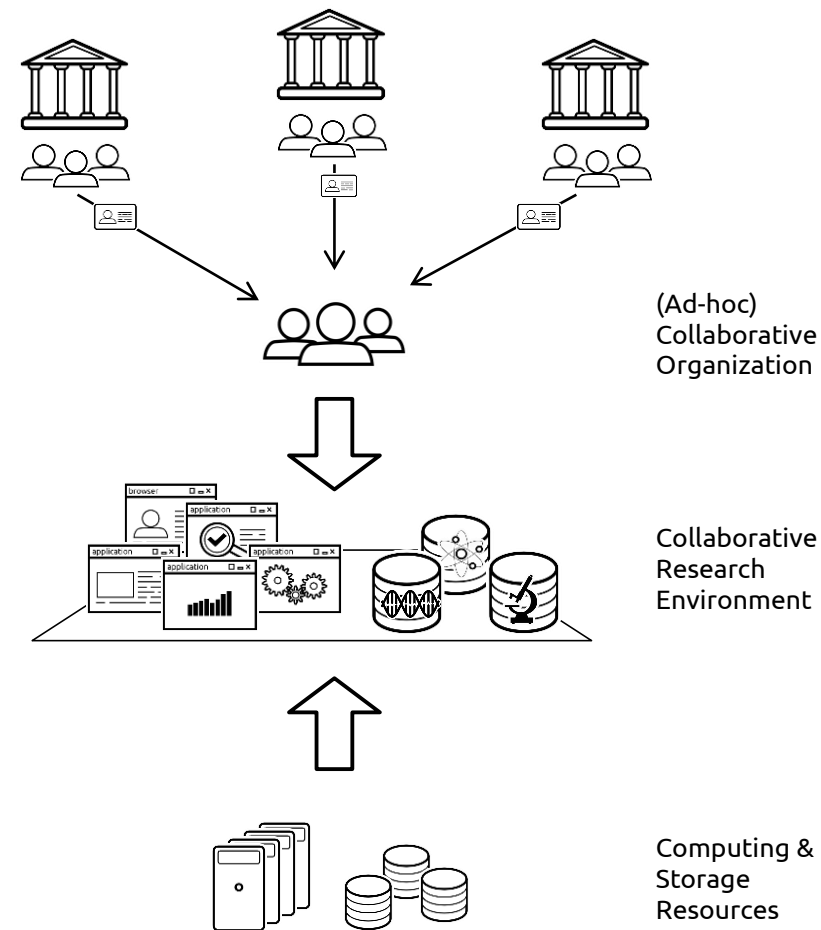# Challenge

How can long tail of science researchers use EOSC Future granted resources to do their work using Microsoft Azure or Oracle cloud.

Researchers

(Long tail of science)

EOSC Future

EOSC future grant

?

Microsoft Azure

ORACLE CLOUD

SURF

SURF Research Cloud

SURF Research Cloud is a portal for building virtual research workspaces efficiently.

- Use preconfigured workspaces and datasets

- Or add your own. ..

- Connect to your data

- Start working, together

(Ad-hoc) Collaborative Organization

Collaborative Research Environment

Computing & Storage Resources

https://www.surf.nl/en/surf-research-cloud-collaboration-portal-for-research

SURF Research Cloud

Easily create <u>reproducible</u> research environments

- Create <u>workspaces</u> in an intuitive user interface

- Short and long lived cloud environments

- Directly use linked contracts and budgets at SURF

- (Including NWO funded SURF Infrastructure grants!)

- Use <u>catalog items</u> as recipes for configuration

- The platform sets up cloud infrastructure
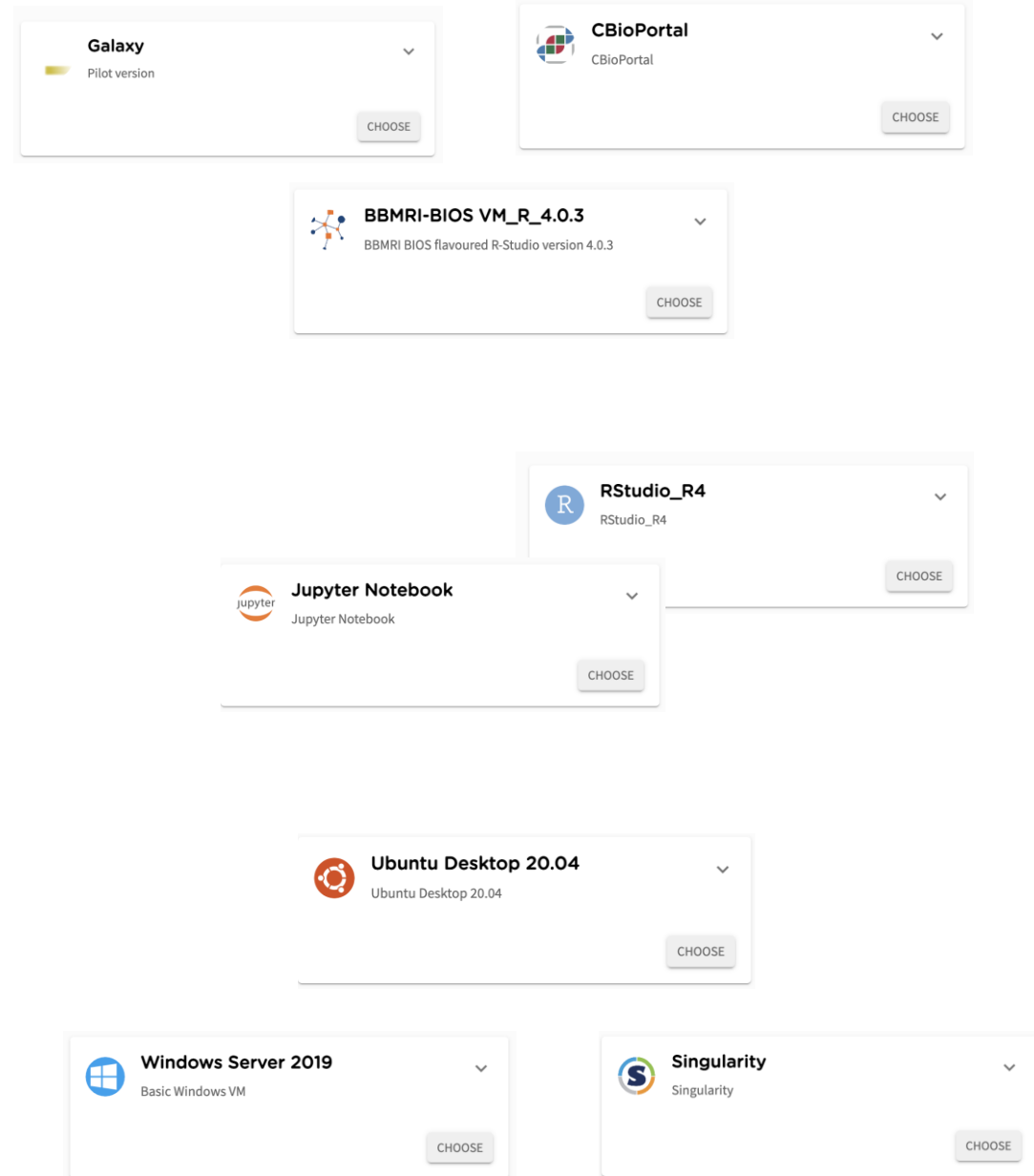
SURF Research Cloud

Use the best resources for your research

- Use cloud resources at SURF infrastructure, or commercial cloud with OCRE

- Special compute resources like: GPUs, High memory VMs etc.

- Connect to datasets with ResearchDrive or iRods

- Use tools and applications offered by SURF and created by research communities and supporters

- Share your own tools and data in self-maintained catalog items
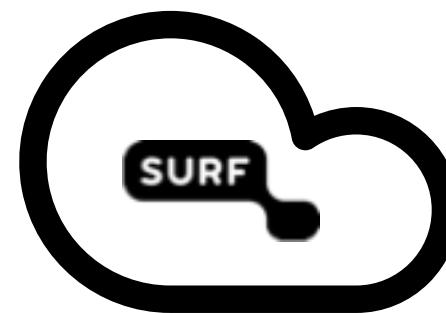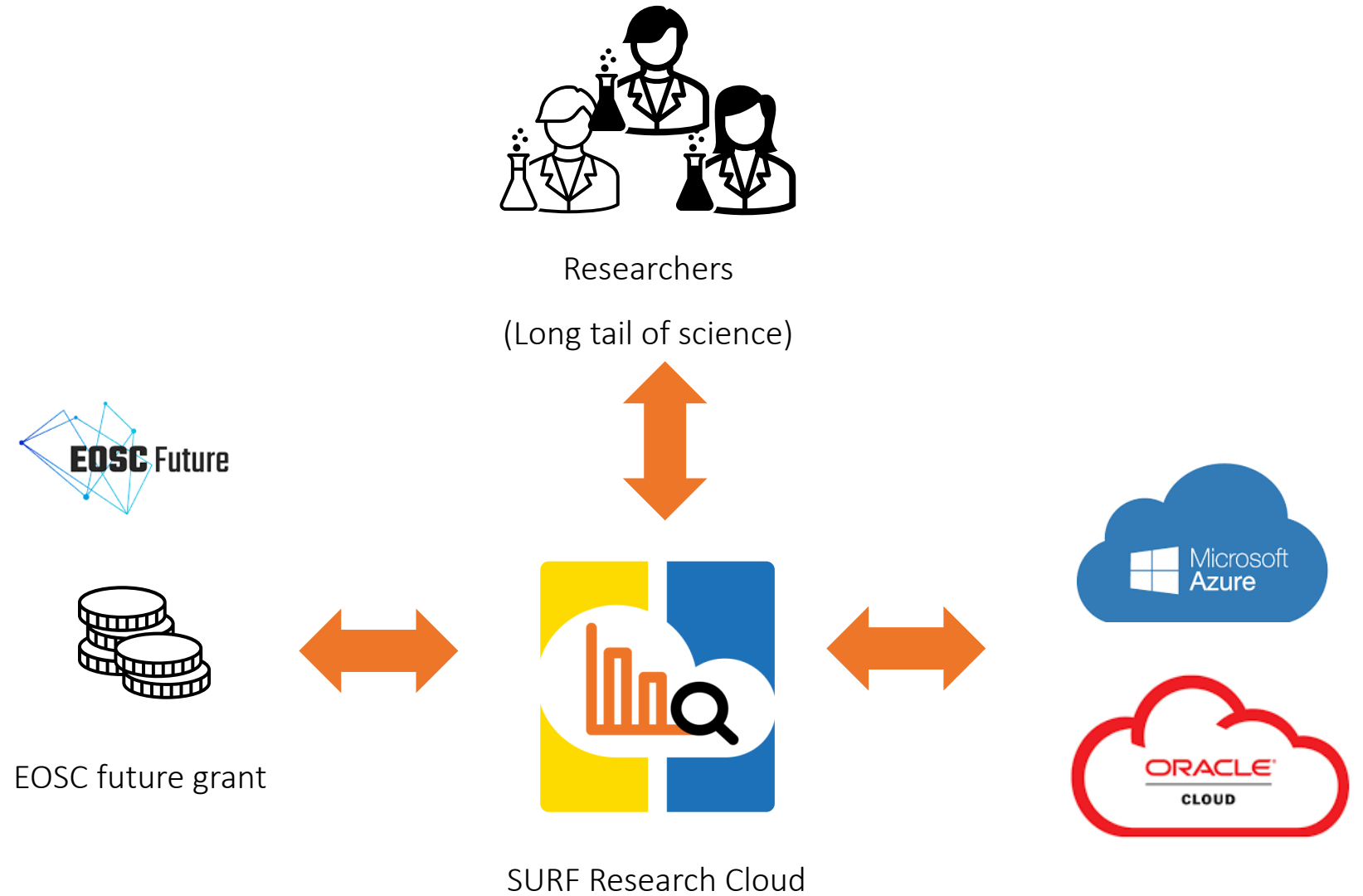
SURF Research Cloud

Work together securely

- SURF Research Cloud is integrated with SURF Research Access Management.

Authentication & Authorisation Infrastructure-as-a-Service which is based on the The European AARC-project architecture.

- Groups can be created based on users federated institute identity called Collaborative Organisations (CO)

- COs are used for access to catalog items, and all members of a CO will be users in workspaces started for that CO

Solution

SURF Research Cloud as platform to give researchers access to Azure and Oracle cloud using EOSC future funding is an user friendly way.

Researchers

(Long tail of science)

EOSC future grant

SURF Research Cloud

Budget + Access

SURF is the aggregator between the grants, credits, vouchers and contracts of the researchers and the budget in the public cloud.

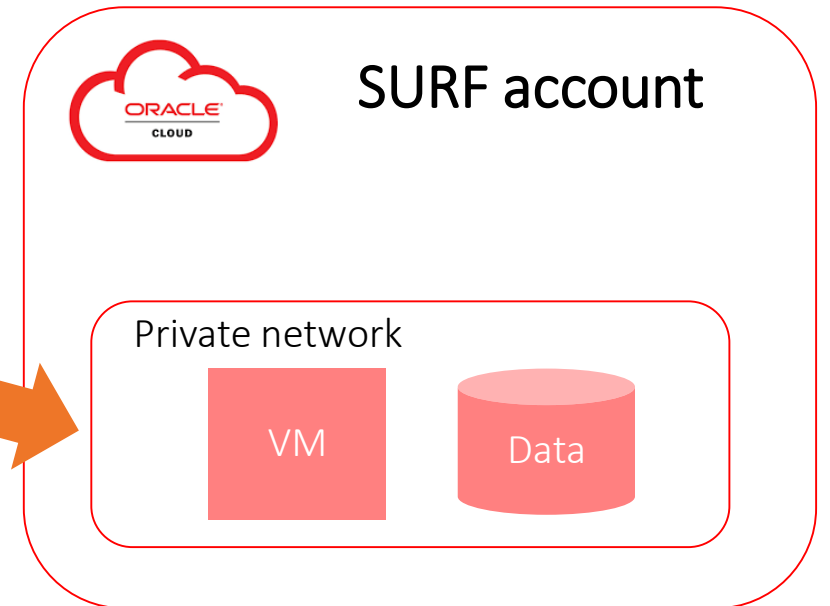We link the researchers federated identity in SURF Research Access Management (SRAM) to SURF contract and accounting system. (CBA)

SURF CBA

SURF Research Access Management

SURFResearch Cloud

Deploying
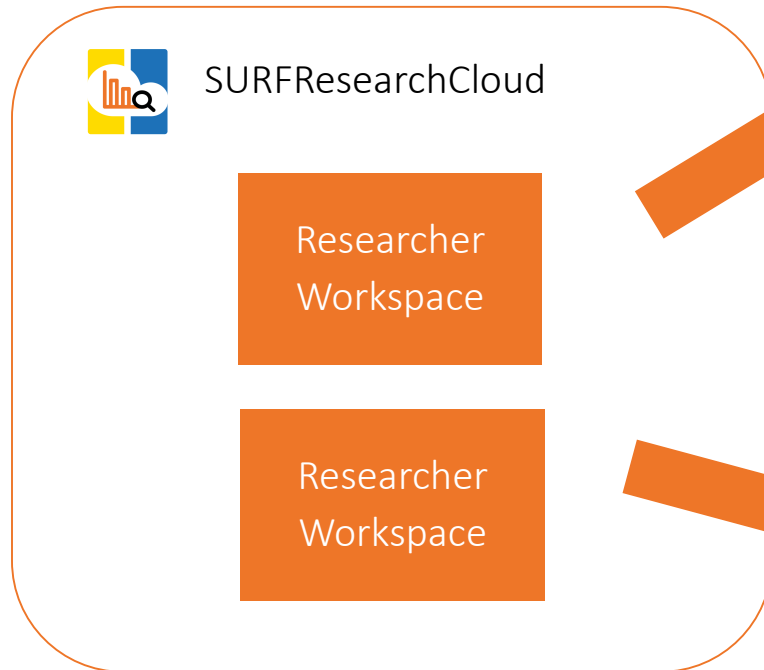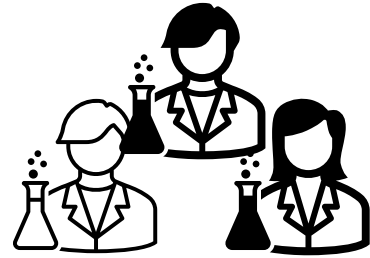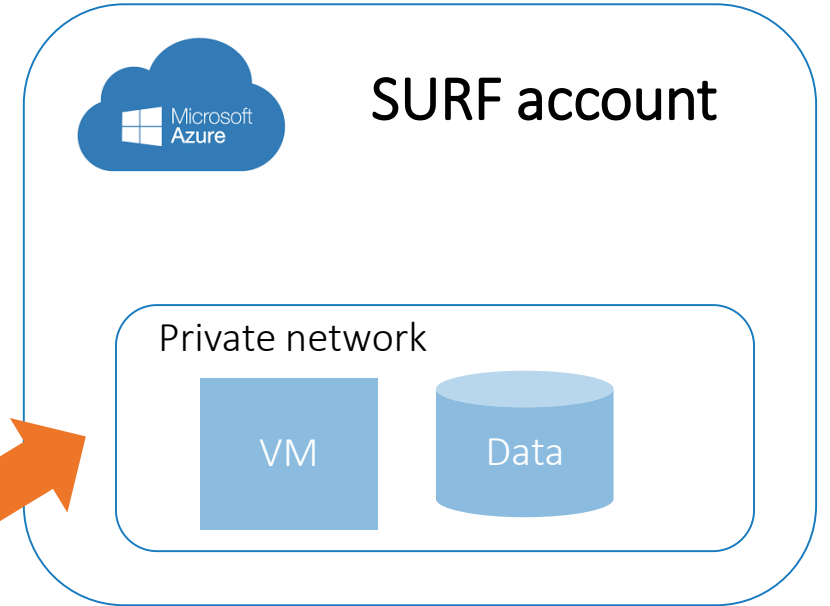
Accounting

SURF Research Cloud uses the accounting API of the cloud providers to get the resources used by the researcher started components.

The components are tagged to the cost can be taken from the researchers budget in the SURF central budgetting and accounting service

Cloud accounting API

SURF CBA

SURFResearch Cloud
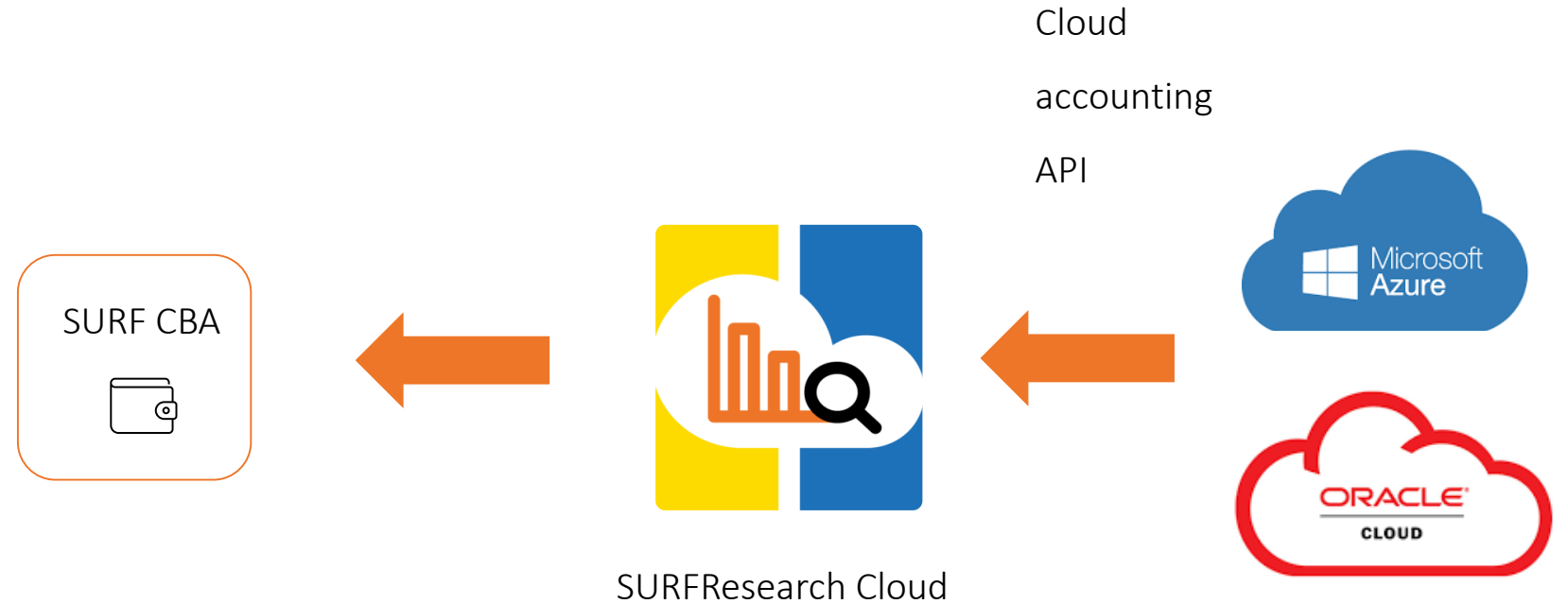
Cloud linking components

For adding a new cloud to the deployment options we only need to develop two main components:

- Terraform based component for deployer

- Accounting API reader

Terraform deployer

API Reader

Commercial
or institute cloud

SURF

Starting a workspace

Starting a workspace

Create your workspace

↺ Restart workspace creation

⬤ Collaborative organisation ── 🔲 Wallet ── ▦ Catalog item ── ▦ Dataset(s) ── ☁ Cloud provider ── ⚙ Options ── 🪪 Name

Choose the wallet you want to use

The following wallets are available for workspace creation.

Do you need help?

View documentation and read how to add a wallet in steps

🔲 **Account for internal project for RSC opex & devops** ⌄

CHOOSE

🔲 EOSC future – SURF mbrandt ⌄

CHOOSE

SURF

Starting a workspace

Create your workspace

↻ Restart workspace creation

👥 Collaborative organisation —— 📇 Wallet —— ▦ Catalog item —— ▦ Dataset(s) —— ☁ Cloud provider —— ⚙ Options —— 🪪 Name

Choose the catalog item you want to use

These are the catalog items you can launch. Which catalog items are available to you depends on your collaborative organisation memberships. (see 'Profile')

Do you need help?

View documentation and read how to add a catalog item in steps

🔍 cuda ✕ ↻

jupyter **Jupyter Notebook with CUDA** ⌄	R **RStudio_R4** ⌄	⊞ **Windows Server 2019** ⌄
NEW! Access with SRAM: https://edu.nl/c7g9d	RStudio_R4	Basic Windows VM
CHOOSE	CHOOSE	CHOOSE

SURF

Starting a workspace

Create your workspace

● Collaborative organisation —— ▣ Wallet —— ⠿ Catalog item —— ⊞ Dataset(s) —— ☁ Cloud provider —— ⚙ Options —— Name

Select cloud provider and flavours

Please select the cloud provider and flavours you prefer.

Do you need help?

View documentation and read how to add a cloud provider in steps

1. Choose the cloud provider that best fits your needs

SURF Azure	SURF HPC Cloud	Surf Oracle VM
SURF Azure	SURF HPC Cloud	Surf Oracle VM
Ubuntu 20.04 server	Ubuntu 20.04	Ubuntu 20.04
GPU 24 Core - 220 GB - 1x A100	A10 - 1 GPU	GPU 15 Core - 240 GB - 1x A10
GPU 36 Core - 880 GB - 1x A10	A10 - 2 GPU	GPU 30 Core - 480 GB - 2x A10
GPU 48 Core - 440 GB - 2x A100	RTX2080 - 1 GPU	
GPU 72 Core - 880 GB - 2x A10	RTX2080 - 2 GPU	
Jupyter Notebook with CUDA	Jupyter Notebook with CUDA	Jupyter Notebook with CUDA
SELECTED ✓	**CHOOSE**	**CHOOSE**

SURF

Starting a workspace

Starting a workspace

Starting a workspace

Jupyter Notebook with CUDA ✏️   →| State: running ^

Id
d1fd3e43-b811-4fb8-a04b-1a9379ef2c23

Hostname
jupyternoteboo

Owner
Martin Brandt

Collaborative Organisation
SURF Research Cloud Live CO

Research Drive
https://researchdrive.surfsara.nl/remote.php/nonshib-webdav

Date Created
18-09-2023 (12:25)

Will be removed
23-09-2023 (12:25) ✏️

Wallet
Account for internal project for RSC opex & devops

Catalog item
Jupyter Notebook with CUDA

Cloud provider
Surf Oracle VM

Flavour(s)
Ubuntu 20.04
GPU 30 Core - 480 GB - 2x A10

IP address
130.61.147.239

URL
https://jupyternoteboo.surfresearchclo.src.surf-hosted.nl

SUPPORT ? | LOGS ↓ | DELETE 🗑 | PAUSE ⏸ | ACCESS →|

SURF

Thank you for your attention!

📍 Address

✉ Mail address

📞 Phone number

SURF