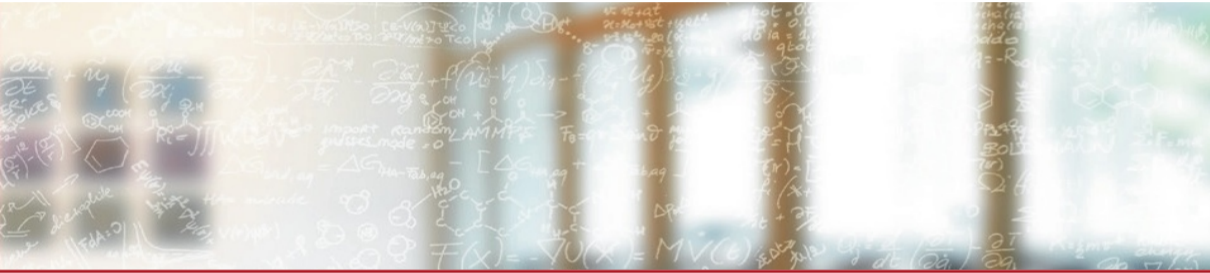




**CSCS**

Centro Svizzero di Calcolo Scientifico  
Swiss National Supercomputing Centre

**ETH** zürich



## Computing Platforms and Infrastructure Final Update

Victor Holanda, CSCS  
Darren Reed, UZH  
January 27th, 2025

# New CSCS Service Manager

Dedicated to SKACH and CTAOCH



# Salvatore Di Nardo



**CSCS**

Centro Svizzero di Calcolo Scientifico  
Swiss National Supercomputing Centre

**ETH** zürich

## Computing Resources

---

# Computing Platforms and Infrastructure updates

## Computing resources updates

- We are accepting requests for few Small projects or extensions



# Computing Platforms and Infrastructure updates

## Computing resources updates

- We are accepting requests for few Small projects or extensions
  - We are counting on SERI - allocation needs to be discussed
  - Requests can be made via the same [Google Form](#)



# Computing Platforms and Infrastructure updates

## Computing resources updates

- We are accepting requests for few Small projects or extensions
  - We are counting on SERI - allocation needs to be discussed
  - Requests can be made via the same **Google Form**
- We are still participating in the SDC3b - 3 teams



# Computing Platforms and Infrastructure updates

## Computing resources updates

- We are accepting requests for few Small projects or extensions
  - We are counting on SERI - allocation needs to be discussed
  - Requests can be made via the same **Google Form**
- We are still participating in the SDC3b - 3 teams
  - Hlstorians\_LCDM-Bayesian (India)
  - Modern\_SEarCH (Switzerland)
  - Traditional\_SEarCH (Switzerland)



# Computing Platforms and Infrastructure updates

## Computing resources updates

- We are accepting requests for few Small projects or extensions
  - We are counting on SERI - allocation needs to be discussed
  - Requests can be made via the same **Google Form**
- We are still participating in the SDC3b - 3 teams
  - Hlstorians\_LCDM-Bayesian (India)
  - Modern\_SEarCH (Switzerland)
  - Traditional\_SEarCH (Switzerland)
- Most projects ended in Dec 31st 2024 (23 out of 29)





# Computing Platforms and Infrastructure updates

## Computing resources updates

- We are accepting requests for few Small projects or extensions
  - We are counting on SERI - allocation needs to be discussed
  - Requests can be made via the same **Google Form**
- We are still participating in the SDC3b - 3 teams
  - Hlstorians\_LCDM-Bayesian (India)
  - Modern\_SEarCH (Switzerland)
  - Traditional\_SEarCH (Switzerland)
- Most projects ended in Dec 31st 2024 (23 out of 29)
  - 2 Teams for the SDC3b are still active
  - 1 Request to extend a small project
  - 2 New small project requests
  - 1 pending request for a small project



# Computing Platforms and Infrastructure updates

## Computing resources updates

- Remaining projects were migrated to Alps



# Computing Platforms and Infrastructure updates

## Computing resources updates

- Remaining projects were migrated to Alps
  - Single stage move
  - With minimal resource allocation - allocation values need to be defined
  - Projects were first granted access to the TÖDI platform



# Computing Platforms and Infrastructure updates

## Computing resources updates

- Remaining projects were migrated to Alps
  - Single stage move
  - With minimal resource allocation - allocation values need to be defined
  - Projects were first granted access to the TÖDI platform
- Piz Daint XC50 has been decommissioned





**CSCS**

Centro Svizzero di Calcolo Scientifico  
Swiss National Supercomputing Centre

**ETH** zürich

## New Daint vCluster

---

# New Daint vCluster

What has changed?

- Hardware is different



# New Daint vCluster

What has changed?

- Hardware is different
  - ARM based (NVIDIA Grace CPU)
  - New NVIDIA GPUs (NVIDIA Hopper GPU)



# New Daint vCluster

What has changed?

- Hardware is different
  - ARM based (NVIDIA Grace CPU)
  - New NVIDIA GPUs (NVIDIA Hopper GPU)
- Software installation has a different workflow





# New Daint vCluster

What has changed?

- Hardware is different
  - ARM based (NVIDIA Grace CPU)
  - New NVIDIA GPUs (NVIDIA Hopper GPU)
- Software installation has a different workflow
  - Based on Spack and Stackinator
  - Uses squashfs images



# New Daint vCluster

What has changed?

- Hardware is different
  - ARM based (NVIDIA Grace CPU)
  - New NVIDIA GPUs (NVIDIA Hopper GPU)
- Software installation has a different workflow
  - Based on Spack and Stackinator
  - Uses squashfs images
- Container workflow is different



# New Daint vCluster

What has changed?

- Hardware is different
  - ARM based (NVIDIA Grace CPU)
  - New NVIDIA GPUs (NVIDIA Hopper GPU)
- Software installation has a different workflow
  - Based on Spack and Stackinator
  - Uses squashfs images
- Container workflow is different
  - NVIDIA Pyxis
  - enroot as container engine



# New Daint vCluster

What has NOT changed?

- Data Backup for users



# New Daint vCluster

What has NOT changed?

- Data Backup for users
  - **/users** and **/store** are backed up (past 90 days)
  - Data in **/store** removed 3 months after end of project
  - Files under **/scratch** older than 30 days are deleted daily



# New Daint vCluster

What has NOT changed?

- Data Backup for users
  - **/users** and **/store** are backed up (past 90 days)
  - Data in **/store** removed 3 months after end of project
  - Files under **/scratch** older than 30 days are deleted daily
- If you have not backed up your data at CSCS, please do so



# New Daint vCluster

What has NOT changed?

- Data Backup for users
  - **/users** and **/store** are backed up (past 90 days)
  - Data in **/store** removed 3 months after end of project
  - Files under **/scratch** older than 30 days are deleted daily
- If you have not backed up your data at CSCS, please do so
- No data backup on scratch file systems **/scratch**



# New Daint vCluster

What has NOT changed?

- Data Backup for users
  - **/users** and **/store** are backed up (past 90 days)
  - Data in **/store** removed 3 months after end of project
  - Files under **/scratch** older than 30 days are deleted daily
- If you have not backed up your data at CSCS, please do so
- No data backup on scratch file systems **/scratch**
  - No recovery in case of accidental data loss
  - No recovery of data deleted due to the **cleaning policy**





# New Daint vCluster

What has NOT changed?

- Data Backup for users
  - **/users** and **/store** are backed up (past 90 days)
  - Data in **/store** removed 3 months after end of project
  - Files under **/scratch** older than 30 days are deleted daily
- If you have not backed up your data at CSCS, please do so
- No data backup on scratch file systems **/scratch**
  - No recovery in case of accidental data loss
  - No recovery of data deleted due to the **cleaning policy**
- Require Multi-factor authentication to login



# New Daint vCluster

What has NOT changed?

- Data Backup for users
  - **/users** and **/store** are backed up (past 90 days)
  - Data in **/store** removed 3 months after end of project
  - Files under **/scratch** older than 30 days are deleted daily
- If you have not backed up your data at CSCS, please do so
- No data backup on scratch file systems **/scratch**
  - No recovery in case of accidental data loss
  - No recovery of data deleted due to the **cleaning policy**
- Require Multi-factor authentication to login
- We still provide non SSH-based computing



# New Daint vCluster

What has NOT changed?

- Data Backup for users
  - **/users** and **/store** are backed up (past 90 days)
  - Data in **/store** removed 3 months after end of project
  - Files under **/scratch** older than 30 days are deleted daily
- If you have not backed up your data at CSCS, please do so
- No data backup on scratch file systems **/scratch**
  - No recovery in case of accidental data loss
  - No recovery of data deleted due to the **cleaning policy**
- Require Multi-factor authentication to login
- We still provide non SSH-based computing
  - FirecREST
  - JupyterLab





**CSCS**

Centro Svizzero di Calcolo Scientifico  
Swiss National Supercomputing Centre

**ETH** zürich

## SRCNet Development

---

# The CHSRC

What have we done?

- Decommissioning OpenStack

# The CHSRC

What have we done?

- Decommissioning OpenStack
  - This has been delayed to around June
  - Reduced (by half) infrastructure

# The CHSRC

What have we done?

- Decommissioning OpenStack
  - This has been delayed to around June
  - Reduced (by half) infrastructure
- New Kubernetes cluster for SKACH with Alps nodes

# The CHSRC

What have we done?

- Decommissioning OpenStack
  - This has been delayed to around June
  - Reduced (by half) infrastructure
- New Kubernetes cluster for SKACH with Alps nodes
  - Plot twist - we performed a mistake in the deployment
  - Engineers are working on it as we speak
  - This is required for the v0.1 compute pledge



# The CHSRC

What have we done?

- Decommissioning OpenStack
  - This has been delayed to around June
  - Reduced (by half) infrastructure
- New Kubernetes cluster for SKACH with Alps nodes
  - Plot twist - we performed a mistake in the deployment
  - Engineers are working on it as we speak
  - This is required for the v0.1 compute pledge
- 400 TB allocated to SKACH

# The CHSRC

What have we done?

- Decomissioning OpenStack
  - This has been delayed to around June
  - Reduced (by half) infrastructure
- New Kubernetes cluster for SKACH with Alps nodes
  - Plot twist - we performed a mistake in the deployment
  - Engineers are working on it as we speak
  - This is required for the v0.1 compute pledge
- 400 TB allocated to SKACH
  - Partially enabled on old and new Kubernetes
  - Partially enabled on dCache
  - This is required for the v0.1 storage pledge

# The CHSRC

What have we done?

- Decommissioning OpenStack
  - This has been delayed to around June
  - Reduced (by half) infrastructure
- New Kubernetes cluster for SKACH with Alps nodes
  - Plot twist - we performed a mistake in the deployment
  - Engineers are working on it as we speak
  - This is required for the v0.1 compute pledge
- 400 TB allocated to SKACH
  - Partially enabled on old and new Kubernetes
  - Partially enabled on dCache
  - This is required for the v0.1 storage pledge
- Create a dedicated dCache instance fo SKACH

# The CHSRC

What have we done?

- Decommissioning OpenStack
  - This has been delayed to around June
  - Reduced (by half) infrastructure
- New Kubernetes cluster for SKACH with Alps nodes
  - Plot twist - we performed a mistake in the deployment
  - Engineers are working on it as we speak
  - This is required for the v0.1 compute pledge
- 400 TB allocated to SKACH
  - Partially enabled on old and new Kubernetes
  - Partially enabled on dCache
  - This is required for the v0.1 storage pledge
- Create a dedicated dCache instance for SKACH
  - Missing POSIX mount to Gornergrat
  - SKAO IAM integration is not final



**CSCS**

Centro Svizzero di Calcolo Scientifico  
Swiss National Supercomputing Centre

**ETH** zürich

## MWA Project

---

# The MWA project

What have we done?

- Pawsey cannot deploy vCluster technology at their center, yet

# The MWA project

What have we done?

- Pawsey cannot deploy vCluster technology at their center, yet
- Test MWA workflow at CSCS

# The MWA project

What have we done?

- Pawsey cannot deploy vCluster technology at their center, yet
- Test MWA workflow at CSCS
  - We have access to different storage types
  - We have NVIDIA GPUs



# The MWA project

What have we done?

- Pawsey cannot deploy vCluster technology at their center, yet
- Test MWA workflow at CSCS
  - We have access to different storage types
  - We have NVIDIA GPUs
- Creation of a vCluster for Software Porting

# The MWA project

What have we done?

- Pawsey cannot deploy vCluster technology at their center, yet
- Test MWA workflow at CSCS
  - We have access to different storage types
  - We have NVIDIA GPUs
- Creation of a vCluster for Software Porting
  - Pawsey supercomputer has AMD GPUs
  - Gornergrat can have the same GPUs
  - Porting the code to NVIDIA GPUs

# The MWA project

What have we done?

- Pawsey cannot deploy vCluster technology at their center, yet
- Test MWA workflow at CSCS
  - We have access to different storage types
  - We have NVIDIA GPUs
- Creation of a vCluster for Software Porting
  - Pawsey supercomputer has AMD GPUs
  - Gornergrat can have the same GPUs
  - Porting the code to NVIDIA GPUs
- Signature of MWA MoU for remote data analysis

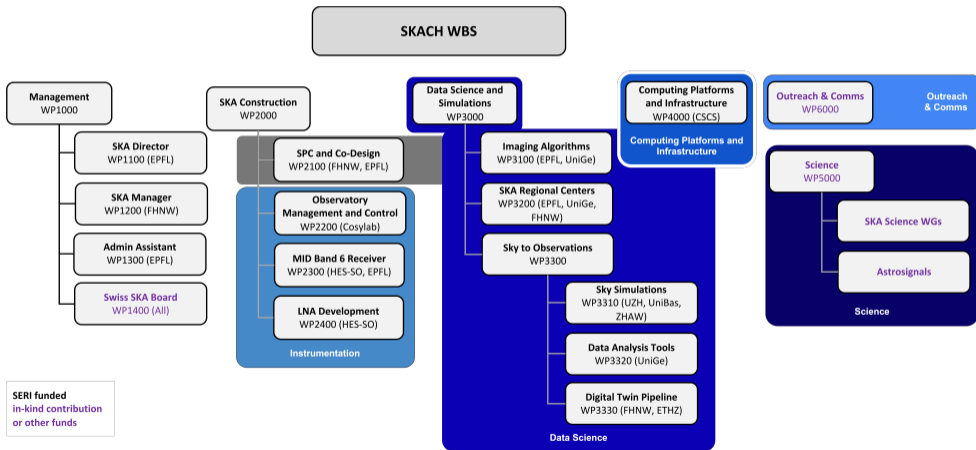
## Why final update?

---

# The SKACH organization

2021-2024

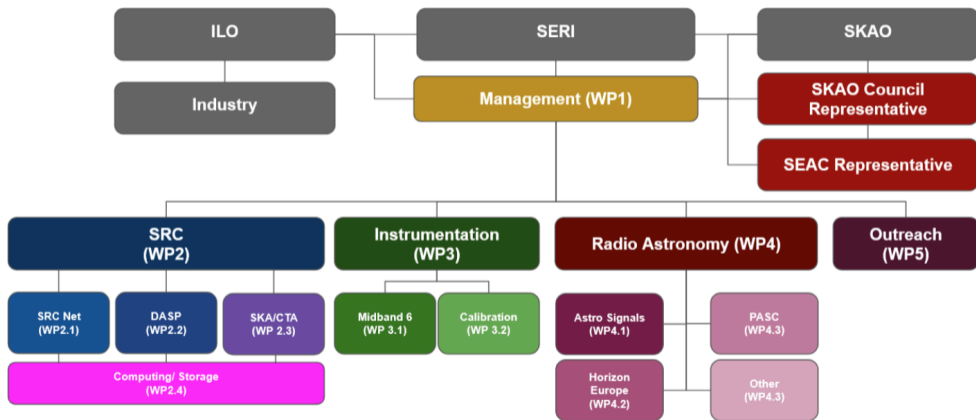
- The old SKACH used to be like



# The SKACH organization

2025-2028

- The new SKACH is like





**CSCS**

Centro Svizzero di Calcolo Scientifico  
Swiss National Supercomputing Centre

**ETH** zürich

**We still have a lot to do!**

---

# What are working in 2025?

The initial plans are:

- Working on v0.1
  - Fix the missing gaps
  - Adapt the SCRNet Security Policy



# What are working in 2025?

The initial plans are:

- Working on v0.1
  - Fix the missing gaps
  - Adapt the SCRNet Security Policy
- Preparing for v0.2
  - Capacity planning at CSCS to be done

# What are working in 2025?

The initial plans are:

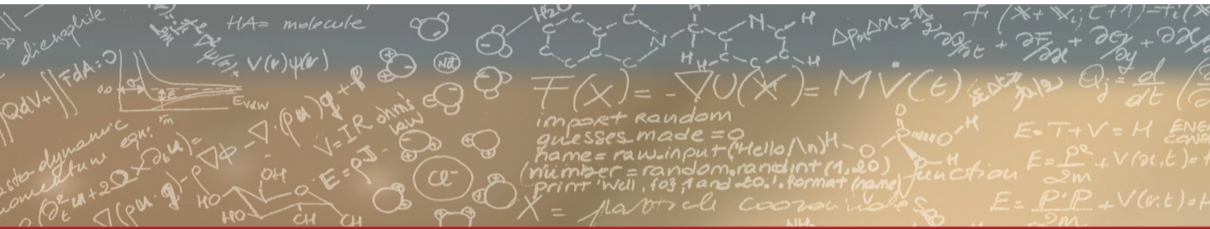
- Working on v0.1
  - Fix the missing gaps
  - Adapt the SCRNet Security Policy
- Preparing for v0.2
  - Capacity planning at CSCS to be done
- MWA collaboration
  - Enable Remote Data Analysis
  - Deploy the porting vCluster



CSCS

Centro Svizzero di Calcolo Scientifico  
Swiss National Supercomputing Centre

ETH zürich



Thank you!





**CSCS**

Centro Svizzero di Calcolo Scientifico  
Swiss National Supercomputing Centre

**ETH** zürich

