



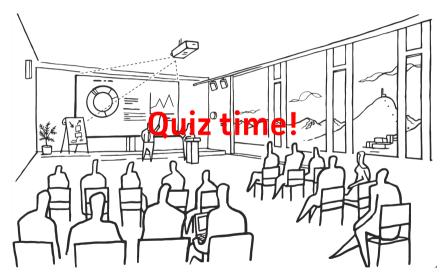


#### **Computing Platforms and Infrastructure Program Update**

Victor Holanda, CSCS Darren Reed, UZH June 10th, 2024

# **Computing Platforms and Infrastructure Program**



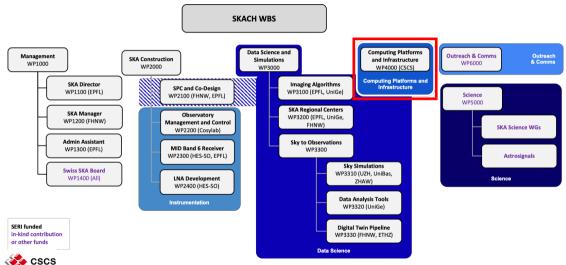




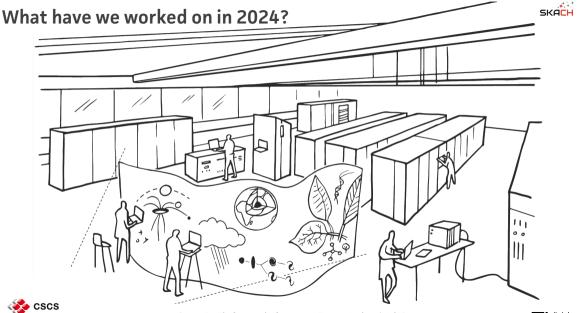
#### Who are we?



Just a tiny box











The "daily business" updates

Kubernetes infrastructure for SKACH







- Kubernetes infrastructure for SKACH
  - Extended offering to a development platform (SKACH-TDS) done







- Kubernetes infrastructure for SKACH
  - Extended offering to a development platform (SKACH-TDS) done
  - Integrating Kubernetes and Alps nodes in progress







- Kubernetes infrastructure for SKACH
  - Extended offering to a development platform (SKACH-TDS) done
  - Integrating Kubernetes and Alps nodes in progress
- Followed the SRCNet v0.1 node requirements discussions







- The "daily business" updates
  - Kubernetes infrastructure for SKACH
    - Extended offering to a development platform (SKACH-TDS) done
    - Integrating Kubernetes and Alps nodes in progress
  - Followed the SRCNet v0.1 node requirements discussions
    - Gornergrat is being deployed as a Kubernetes cluster in progress







- Kubernetes infrastructure for SKACH
  - Extended offering to a development platform (SKACH-TDS) done
  - Integrating Kubernetes and Alps nodes in progress
- Followed the SRCNet v0.1 node requirements discussions
  - Gornergrat is being deployed as a Kubernetes cluster in progress
  - Converted the Slurm deployment into a Kubernetes one done







- Kubernetes infrastructure for SKACH
  - Extended offering to a development platform (SKACH-TDS) done
  - Integrating Kubernetes and Alps nodes in progress
- Followed the SRCNet v0.1 node requirements discussions
  - Gornergrat is being deployed as a Kubernetes cluster in progress
  - Converted the Slurm deployment into a Kubernetes one done
- Working on the feasibility of the v0.1 Swiss SRC in progress







- Kubernetes infrastructure for SKACH
  - Extended offering to a development platform (SKACH-TDS) done
  - Integrating Kubernetes and Alps nodes in progress
- Followed the SRCNet v0.1 node requirements discussions
  - Gornergrat is being deployed as a Kubernetes cluster in progress
  - Converted the Slurm deployment into a Kubernetes one done
- Working on the feasibility of the v0.1 Swiss SRC in progress
- Participated as a facility partner in the SDC3a data challenge done







- Kubernetes infrastructure for SKACH
  - Extended offering to a development platform (SKACH-TDS) done
  - Integrating Kubernetes and Alps nodes in progress
- Followed the SRCNet v0.1 node requirements discussions
  - Gornergrat is being deployed as a Kubernetes cluster in progress
  - Converted the Slurm deployment into a Kubernetes one done
- Working on the feasibility of the v0.1 Swiss SRC in progress
- Participated as a facility partner in the SDC3a data challenge done
- Participating as a facility partner in the SDC3b data challenge in progress







- Kubernetes infrastructure for SKACH
  - Extended offering to a development platform (SKACH-TDS) done
  - Integrating Kubernetes and Alps nodes in progress
- Followed the SRCNet v0.1 node requirements discussions
  - Gornergrat is being deployed as a Kubernetes cluster in progress
  - Converted the Slurm deployment into a Kubernetes one done
- Working on the feasibility of the v0.1 Swiss SRC in progress
- Participated as a facility partner in the SDC3a data challenge done
- Participating as a facility partner in the SDC3b data challenge in progress
  - Three teams allocated at CSCS
  - Reserved 15'000 node hours







- Kubernetes infrastructure for SKACH
  - Extended offering to a development platform (SKACH-TDS) done
  - Integrating Kubernetes and Alps nodes in progress
- Followed the SRCNet v0.1 node requirements discussions
  - Gornergrat is being deployed as a Kubernetes cluster in progress
  - Converted the Slurm deployment into a Kubernetes one done
- Working on the feasibility of the v0.1 Swiss SRC in progress
- Participated as a facility partner in the SDC3a data challenge done
- Participating as a facility partner in the SDC3b data challenge in progress
  - Three teams allocated at CSCS
  - Reserved 15'000 node hours
- Supporting the different SKACH teams at CSCS in progress







- Kubernetes infrastructure for SKACH
  - Extended offering to a development platform (SKACH-TDS) done
  - Integrating Kubernetes and Alps nodes in progress
- Followed the SRCNet v0.1 node requirements discussions
  - Gornergrat is being deployed as a Kubernetes cluster in progress
  - Converted the Slurm deployment into a Kubernetes one done
- Working on the feasibility of the v0.1 Swiss SRC in progress
- Participated as a facility partner in the SDC3a data challenge done
- Participating as a facility partner in the SDC3b data challenge in progress
  - Three teams allocated at CSCS
  - Reserved 15'000 node hours
- Supporting the different SKACH teams at CSCS in progress
- Supporting the different synergies in collaboration with CTA







What were the newly planned activities?

Work on getting vCluster running on Pawsey, Australia - MWA collaboration







- Work on getting vCluster running on Pawsey, Australia MWA collaboration
  - Deploying a development vCluster at CSCS for software migration







- Work on getting vCluster running on Pawsey, Australia MWA collaboration
  - Deploying a development vCluster at CSCS for software migration
- Develop guidelines for Secure Software Development Life Cycle with SKAO
  - on hold







- Work on getting vCluster running on Pawsey, Australia MWA collaboration
  - Deploying a development vCluster at CSCS for software migration
- Develop guidelines for Secure Software Development Life Cycle with SKAO
  - on hold
- Work on the FirecREST integrated with JupyterHUB
  - In progress final testing stages







- Work on getting vCluster running on Pawsey, Australia MWA collaboration
  - Deploying a development vCluster at CSCS for software migration
- Develop guidelines for Secure Software Development Life Cycle with SKAO
  - on hold
- Work on the FirecREST integrated with JupyterHUB
  - In progress final testing stages
- Extend the Kubernetes offering with a development cluster
  - Done



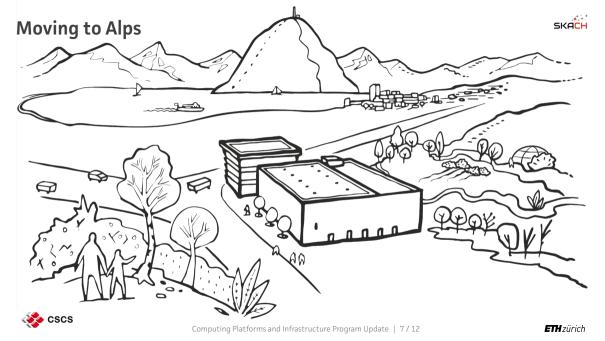




- Work on getting vCluster running on Pawsey, Australia MWA collaboration
  - Deploying a development vCluster at CSCS for software migration
- Develop guidelines for Secure Software Development Life Cycle with SKAO
  - on hold
- Work on the FirecREST integrated with JupyterHUB
  - In progress final testing stages
- Extend the Kubernetes offering with a development cluster
  - Done
- Move to Alps
  - Some projects have already Eiger allocation in progress







SKACH

When and how are we moving?

• The migration should start in September







- The migration should start in September
  - Expect a busy machine everyone will be migrating
  - Suggest you to write ReFrame tests for your applications and workflows







- The migration should start in September
  - Expect a busy machine everyone will be migrating
  - Suggest you to write ReFrame tests for your applications and workflows
- Single stage move







- The migration should start in September
  - Expect a busy machine everyone will be migrating
  - Suggest you to write ReFrame tests for your applications and workflows
- Single stage move
  - New (non-GPU) projects are going to eiger done
  - Move hybrid to User Lab







- The migration should start in September
  - Expect a busy machine everyone will be migrating
  - Suggest you to write ReFrame tests for your applications and workflows
- Single stage move
  - New (non-GPU) projects are going to eiger done
  - Move hybrid to User Lab
- Hardware will be different







- The migration should start in September
  - Expect a busy machine everyone will be migrating
  - Suggest you to write ReFrame tests for your applications and workflows
- Single stage move
  - New (non-GPU) projects are going to eiger done
  - Move hybrid to User Lab
- Hardware will be different
  - ARM based (NVIDIA Grace CPU)
  - New NVIDIA GPUs (NVIDIA Hopper GPU)







- The migration should start in September
  - Expect a busy machine everyone will be migrating
  - Suggest you to write ReFrame tests for your applications and workflows
- Single stage move
  - New (non-GPU) projects are going to eiger done
  - Move hybrid to User Lab
- Hardware will be different
  - ARM based (NVIDIA Grace CPU)
  - New NVIDIA GPUs (NVIDIA Hopper GPU)
- Software installation will have a different workflow







- The migration should start in September
  - Expect a busy machine everyone will be migrating
  - Suggest you to write ReFrame tests for your applications and workflows
- Single stage move
  - New (non-GPU) projects are going to eiger done
  - Move hybrid to User Lab
- Hardware will be different
  - ARM based (NVIDIA Grace CPU)
  - New NVIDIA GPUs (NVIDIA Hopper GPU)
- Software installation will have a different workflow
  - Based on Spack and Stackinator
  - Uses squashfs images





#### **Resource Consumption on Piz Daint**

SKACH

2024 Q1

Project	Group Leader	Node type	Quota [nh]	Used [nh]	Used [%]
sk08	lmayer	HYBRID	75'000	76'626	102.2 %
sk19	lmachado	HYBRID	10'000	8'200	82.0 %
sk016	fcabot	HYBRID	5'000	5'620	112.4 %
sk015	phirling	HYBRID	5'000	5'119	102.4 %
sk05	lgehrig	HYBRID	15'000	4'338	28.9 %
sk018	pdenzel	HYBRID	5'000	1'918	38.4 %
sk014	mibianco	HYBRID	15'000	105	0.7 %
sk020	mbredber	HYBRID	5'000	79	1.6 %
sk023	mmorales	HYBRID	5'000	1	0.0 %
sk022	llebrun	HYBRID	5'000	0	0.0 %
sk04	mstutz	HYBRID	10'000	0	0.0 %
sk01	hvictor	HYBRID	0	0	0.0 %
sk013	dpotter	MULTICORE	2'500	0	0.0 %
sk013	dpotter	HYBRID	2'500	0	0.0 %
sk017	framunno	HYBRID	5'000	0	0.0 %
sk021	msargent	HYBRID	0	0	0.0 %
sk021	msargent	MULTICORE	0	0	0.0 %
sk07	pllopiss	MULTICORE	2'500	0	0.0 %
sk07	pllopiss	HYBRID	2'500	0	0.0 %
Total			170'000	102'007	60.0 %





# Resource Budget What's left for 2024?

SKACH

■ ≈232'000 node hours left



SKACH

- ≈232'000 node hours left
  - $\approx$ 116'000 per quarter to spend





SKACH

- ≈232'000 node hours left
  - $\approx 116'000$  per quarter to spend
- Long projects call is open finishes by June 31st





SKACH

- ≈232'000 node hours left
  - $\approx 116'000$  per quarter to spend
- Long projects call is open finishes by June 31st
- The allocations will be done on Eiger (no GPUs)





SKACH

- ≈232'000 node hours left
  - $\approx 116'000$  per quarter to spend
- Long projects call is open finishes by June 31st
- The allocations will be done on Eiger (no GPUs)
- Potential to migrate to GPUs, on October 1st





SKACH

- What's left for 2024?
  - ≈232'000 node hours left
    - $\approx 116'000$  per quarter to spend
  - Long projects call is open finishes by June 31st
  - The allocations will be done on Eiger (no GPUs)
  - Potential to migrate to GPUs, on October 1st

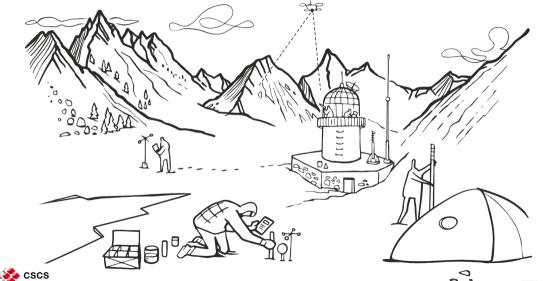
# Time to apply!





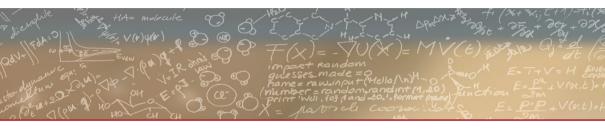
# What are your plans for 2025-28?











# Thank you!



