

Linux Command Line

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2 March 2027

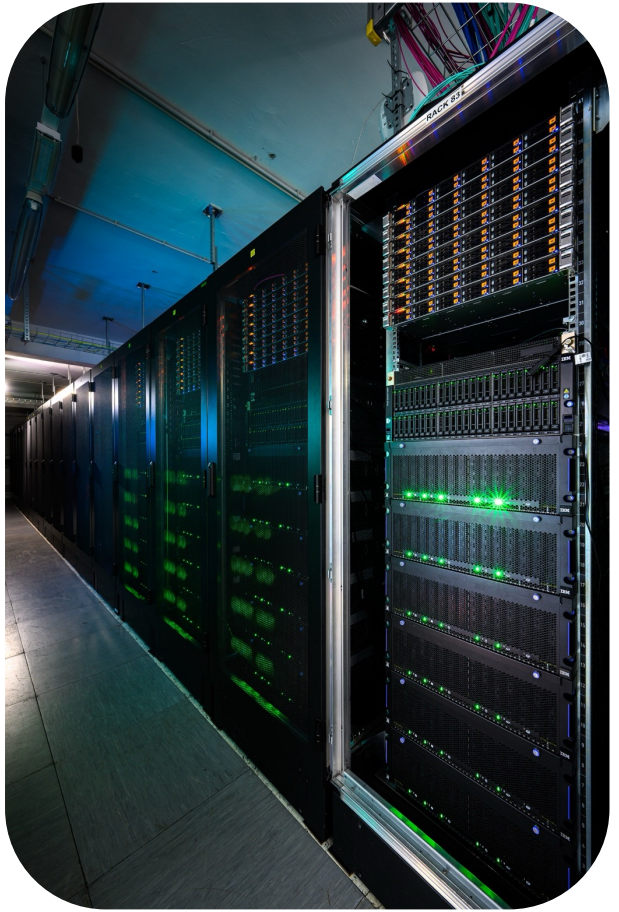
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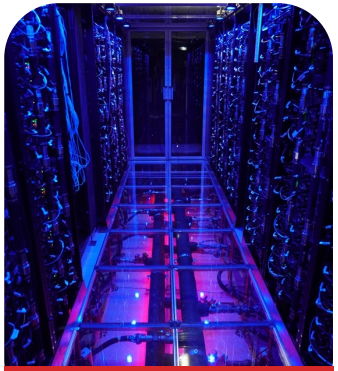
and beyond

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Enabling Excellence in Science & Research

ASC Infrastructure 2026

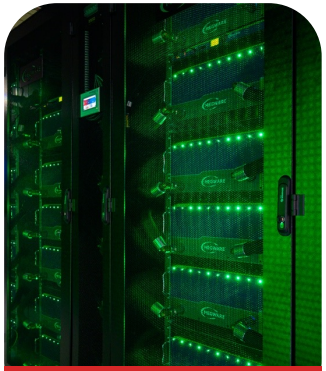


VSC-4

2019 (790 nodes)

CPU
2.7 PFlop/s
450 kW

Vienna



VSC-5

2022 (710+100 nodes)

CPU, GPU
4.30 PFlop/s
450 kW

Vienna

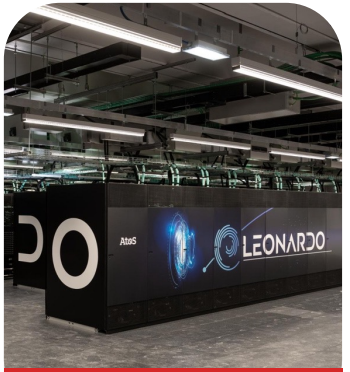


MUSICA

2024 (168+272++ nodes)

CPU, GPU (→ AI +QC)
45 PFlop/s
> 1 MW

Vienna, Linz, Innsbruck



LEONARDO

2022 (EuroHPC pre-exa)

National access to
15 GPU nodes
via AURELEO calls

Bologna, Italy

Austrian Scientific Computing

Leading European HPC & AI Training Center (ASC & EU funded)

- **Only informed users can use HPC resources efficiently**
- ASC Training and Education (2025)
  60+ training events/year
  3000+ participants/year
- events.asc.ac.at → mirrored to AI FACTORY AUSTRIA A I : A T
- PRACE Training Centre
- **EuroHPC** → partner @ LEONARDO @ IT4LIA
  → access to EuroHPC systems
  → EuroCC & AI:AT
  → EUMaster4HPC
  → EVITA





- **ASHPC conferences** → networking & community building in Central Europe

ASC
Austrian Scientific Computing

Austrian Scientific Computing

AI:AT Learning Center

Live Trainings

Learn live with our experts—in interactive courses, webinars, and workshops featuring personal interaction and practical content.

Explore Trainings →

ai-at.eu/en/trainings

AI FACTORY AUSTRIA

AI:AT Self-Learning Platform

Learn at your own pace with videos, handouts, presentations, quizzes, and more.

Sign up and start learning →

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ASC
Austrian Scientific Computing

HPC & AI

Supporting Adoption, Scaling, and Skills

- Austria has a strong support ecosystem for **academia**, **research**, **public sector**, and **industry** helping to adopt and leverage HPC through access to public supercomputing infrastructure
- Funded by the EU and national programs
- **Advanced Computing Austria ACA GmbH** → ASC's industry support
  ASC owned: TU Wien, University of Vienna & Association HPC Austria

Consulting & project support
Matchmaking
Access to HPC
Training & skills

➢ EuroCC – establish European National Competence Centres (NCCs) – since 2020
National Competence Center for Supercomputing
advanced-computing.at
- HPC for simulations & modeling
- Commercial access to Austrian supercomputers
- Access to EuroHPC systems (all workloads)

EURO³

A I C – A Advanced Computing Austria

➢ AI Factory Austria AI:AT – one of 19 EuroHPC AI Factories (+ 13 AIF Antennas) – since 2025
ACA+ASC+INiTS++ + AIT
ai-at.eu advanced-computing.at
- Artificial Intelligence, AI on HPC
- AI services and support
- Access to EuroHPC systems (AI workloads)

AI FACTORY AUSTRIA A I : A T

ASC
Austrian Scientific Computing

Austrian Competence Centre for Supercomputing

Operated by Advanced Computing Austria ACA GmbH

HPC services for startups, SMEs & industry



Consulting & project support

- ❒ Consulting and support for HPC and Big Data
- ❒ Link to experts
- ❒ Proof of Concept (PoC)
- ❒ Securing state funding
- ❒ Help with finding project partners

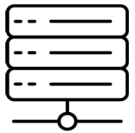
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Training

- ❒ Introduction to HPC and using HPC systems
- ❒ Parallel programming (e.g., MPI, OpenMP, CUDA)
- ❒ Performance optimisation
- ❒ AI training via AI:AT

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training@asc.ac.at



HPC infrastructure

Access to powerful supercomputers, help with the application process and PoC programming support:

- ❒ ASC
- ❒ MUSICA
- ❒ LEONARDO
- ❒ Other EuroHPC systems

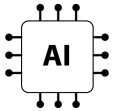
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EuroHPC

Key Facts & Figures

EuroHPC Joint Undertaking

- The EuroHPC JU allows the European Union and the EuroHPC JU participating countries to coordinate their efforts and pool their resources to **make Europe a world leader in supercomputing**.
- This boosts Europe's **scientific excellence** and **industrial strength** and supports the digital transformation of its economy while ensuring its **technological sovereignty**.



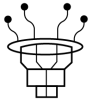
19
AI Factories



13
AI Factories Antennas



14
Supercomputers



10
Quantum Computers



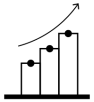
67
R & I Projects



38
Participating States



36
National Competence Centres



8,2
Billion EUR Total Budget

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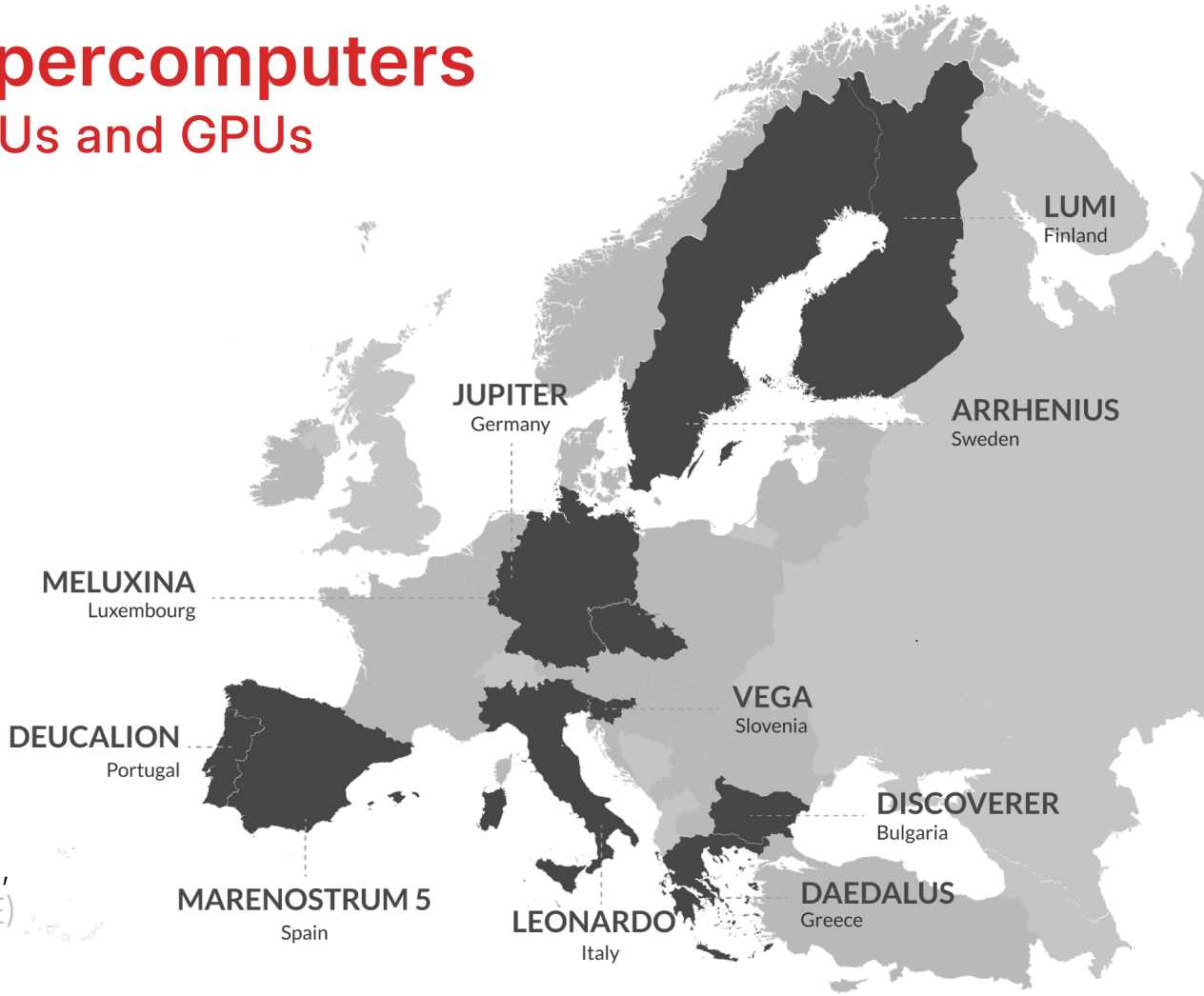
EuroHPC Supercomputers

Get Access to CPUs and GPUs

- 1 (+1) exascale systems
  JUPITER
  (ALICE RECOQUE)

- 3 pre-exascale systems
  LEONARDO (+LISA)
  LUMI
  MARENOSTRUM 5

- 7 (+2) petascale systems
  ARRHENIUS, DAEDALUS,
  DEUCALION, DISCOVERER,
  MELUXINA, ~~KAROLINA~~, VEGA,
  (CASPIr, INNOVATE, LEVENTE)



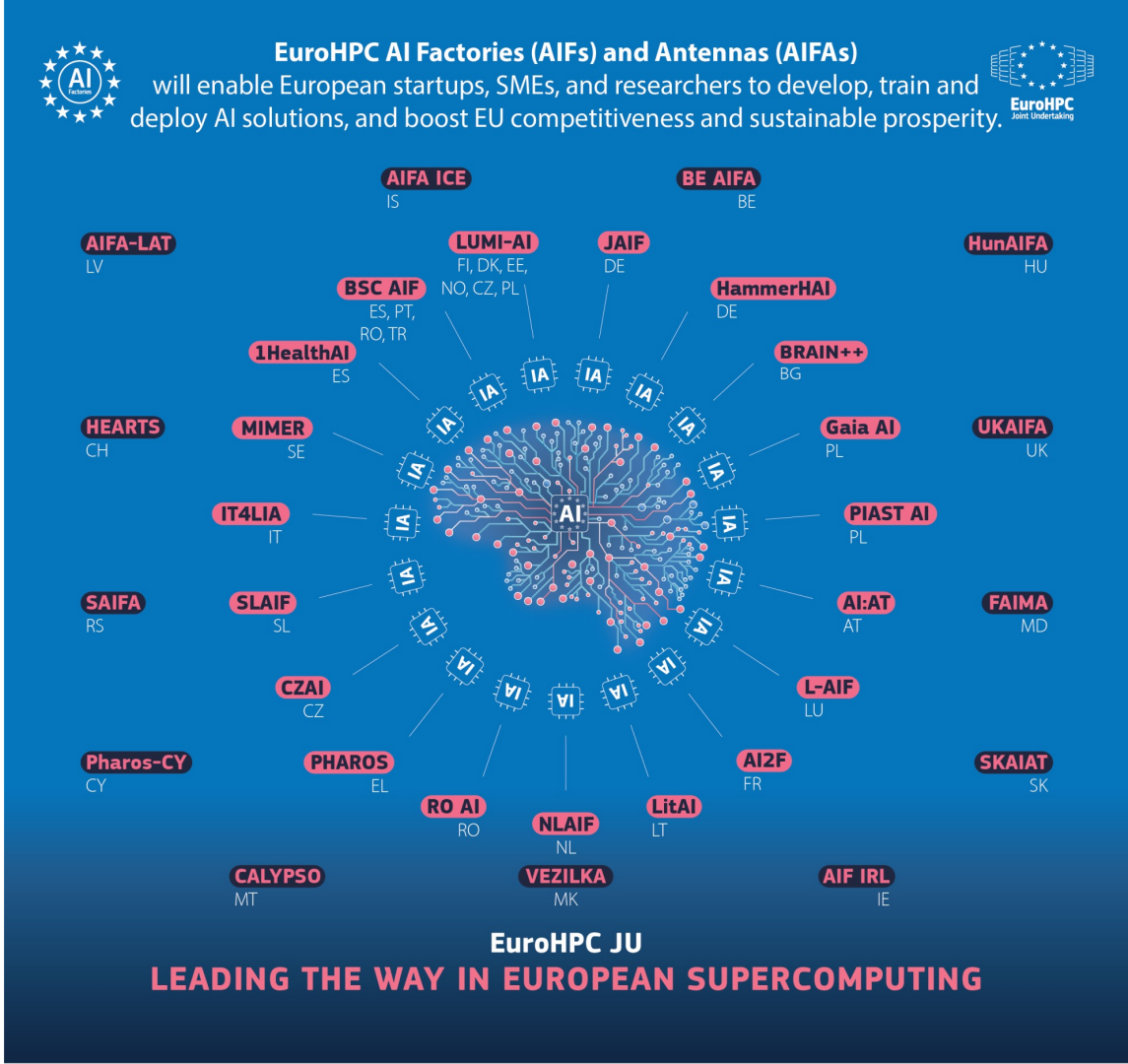
EuroHPC AI Factories

What are AI Factories?

AI Factories are dynamic ecosystems that will build around AI-optimized supercomputers, offering computing resources and support services to the European industry, as well as to the European scientific users for the development of large AI models to take advantage of AI technology capabilities in the European Union, and for the development of skills and knowledge in the domain of AI.

AI Factory Antennas complement existing AI Factories by expanding the reach and complementing their services.

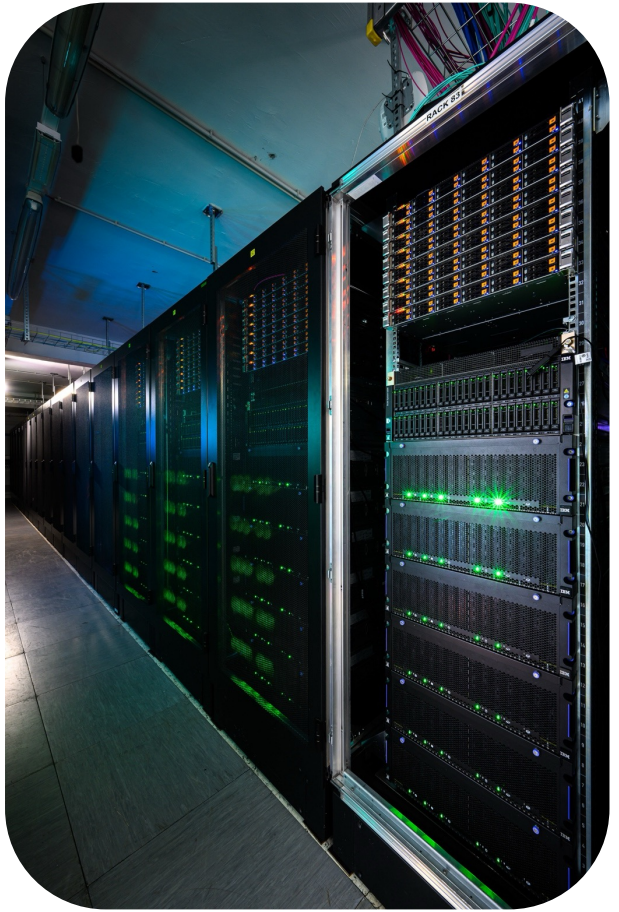
19 AI Factories and 13 AI Factory Antennas that offer free, customized support to SMEs and Startups.



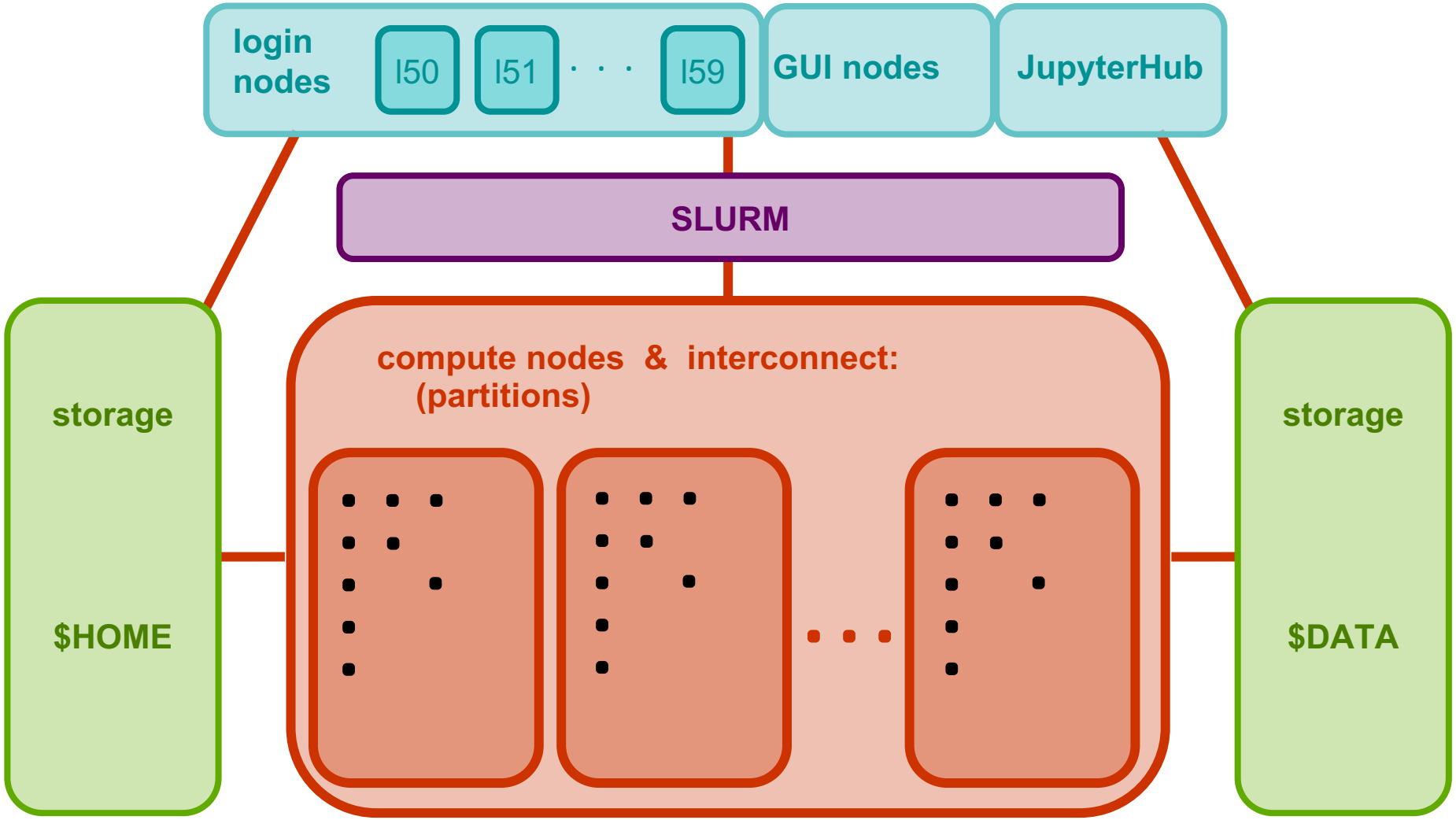
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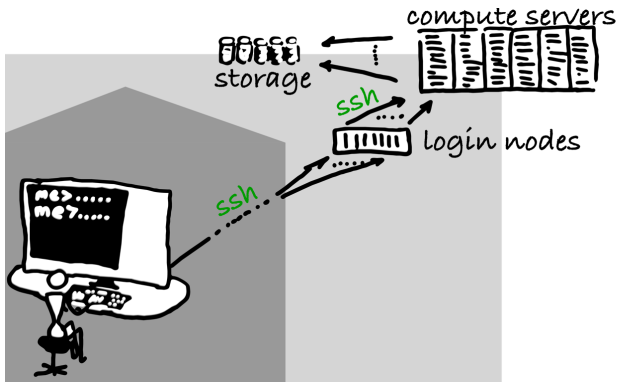


VSC-5 – components of a supercomputer



VSC-5 – login

- username & password
  ➠ mobile phone number
- two-factor authentication
  ➠ OTP sent as SMS ➠ every 12 hours
- restricted IPs (firewall)
  ➠ at a ASC partner uni / jump host / VPN
- terminal
  ➠ xterm, terminal, PuTTY



- docs, PuTTY screenshots, ssh-keys (ssh -p 27)

training → everyone logged in ?

```
username:  trainee##   (➠ ## ➠ ID )
password:  .......##   (➠ see email)
```

standard ssh (inside IP range of a ASC partner university):

```
ssh trainee##@vsc5.vsc.ac.at
```

trainee users only (no IP range restrictions):

```
ssh -t trainee##@vmos.vsc.ac.at vsc5
```

login via VSC JupyterHub

https://jupyterhub.vsc.ac.at
(just hit “Start” & open a terminal)