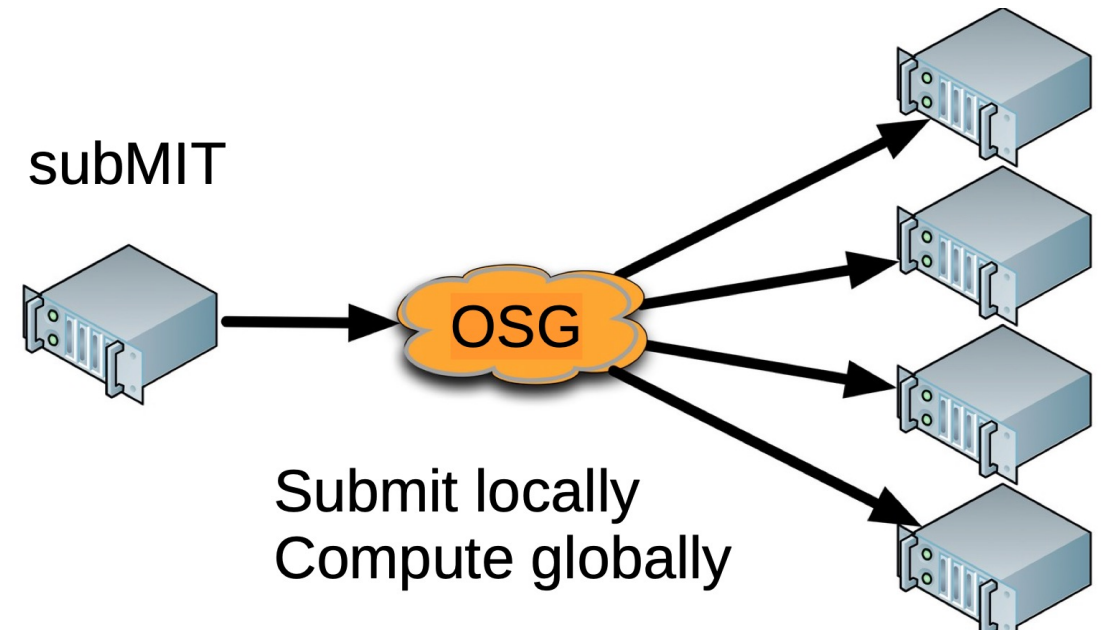


subMIT Overview & Updates



subMIT Users Meeting

<https://indico.mit.edu/event/1511/>

Matt Heine 4/22/2025



What is subMIT? (in one slide)

Login Pool

- Internal SLURM cluster
~1k CPU cores ~30 GPUs
- **Submit jobs to larger external resources**

Support (Physics Computing Support Staff)

- Documentation
- AI Chatbot
- Help desk: submit-help@mit.edu

Community

- User Meetings / Users Group

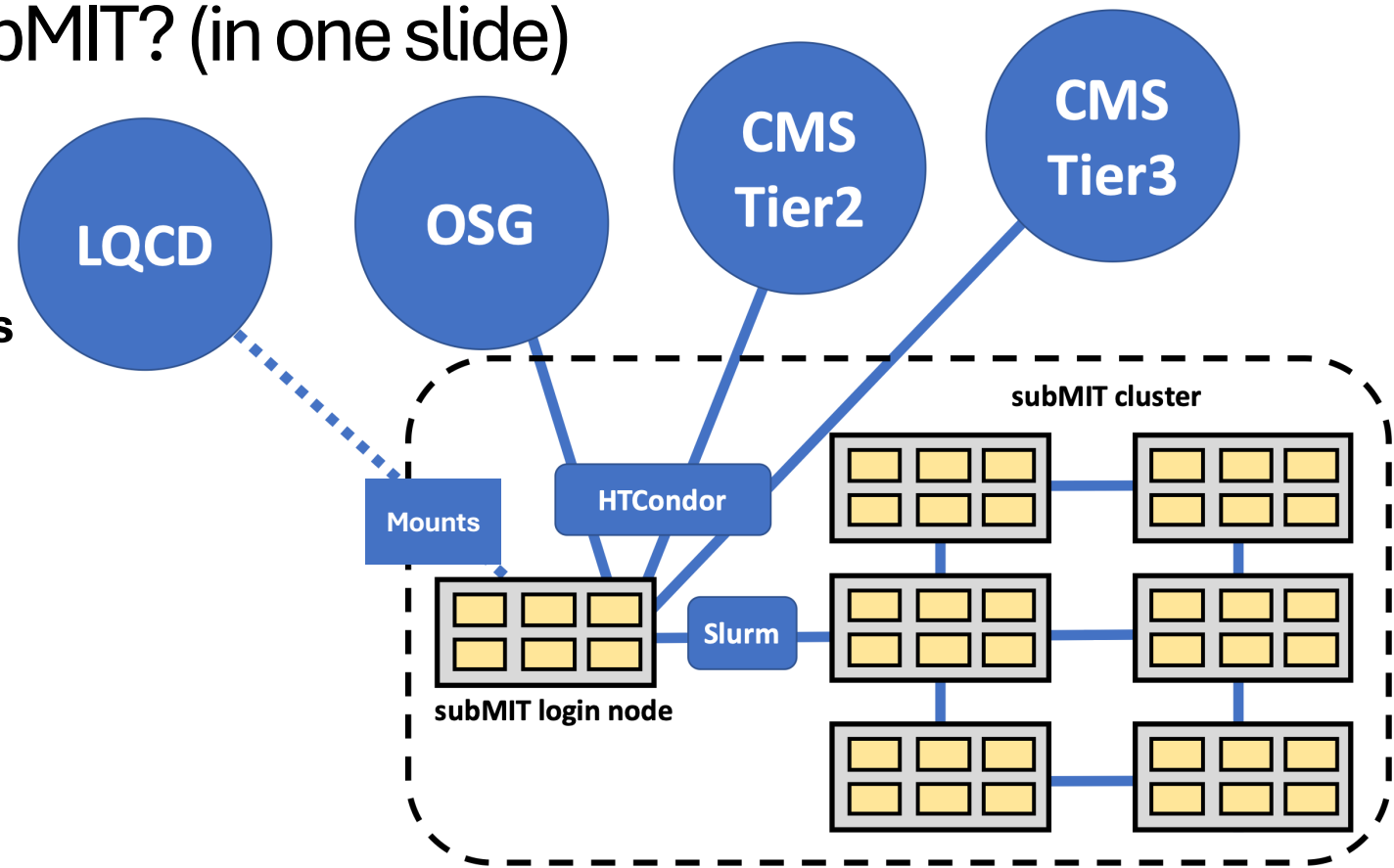


jupyterhub

Web Browser access
to CPU / GPU nodes
Jupyter Notebooks

Select a job profile:

- ✓ Slurm - Submit - 1 CPU, 2 GB
- Slurm - Submit - 2 CPUs, 4 GB
- Slurm - Submit - 4 CPUs, 8 GB
- Slurm - Submit-GPU - 1 GPU
- Slurm - Submit-GPU-A30 - 1 GPU
- Slurm for Wolfram Mathematica - submit00 - 1 CPU, 2 GB



Specialized Hardware / Features

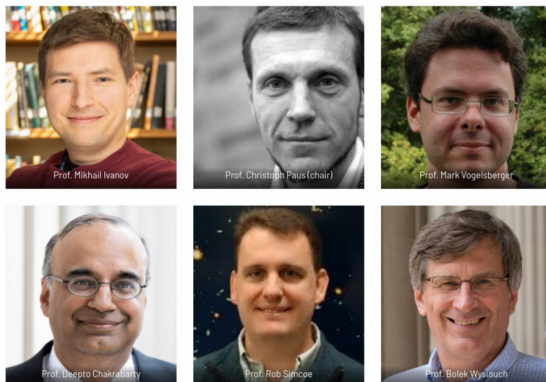
- 2 High-Memory (1.5TB) / High-Density (192 core, 384 thread) nodes
- Fast 100 Gbit/s Network
- Fast NVMe scratch disk
- 1 TB / user storage + group space
- user + group websites
- Container Building / Running
 - Podman (Docker)
 - Apptainer (Singularity)

Project organization



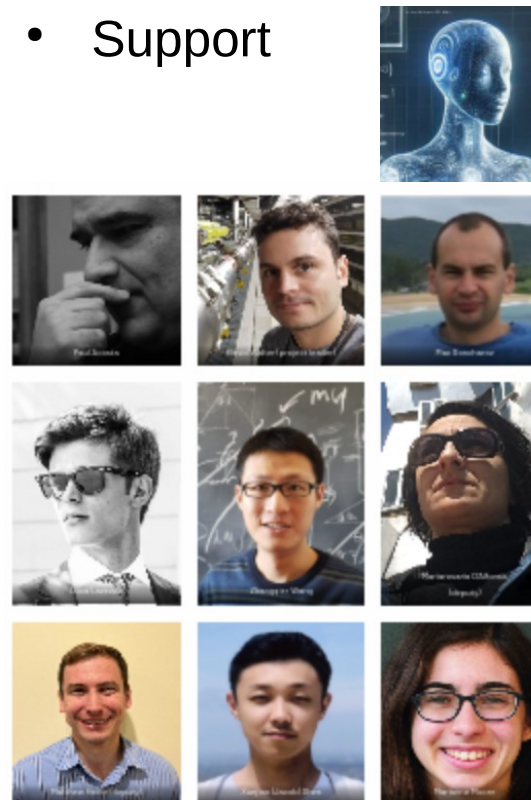
Steering committee

- Oversight
- Funding



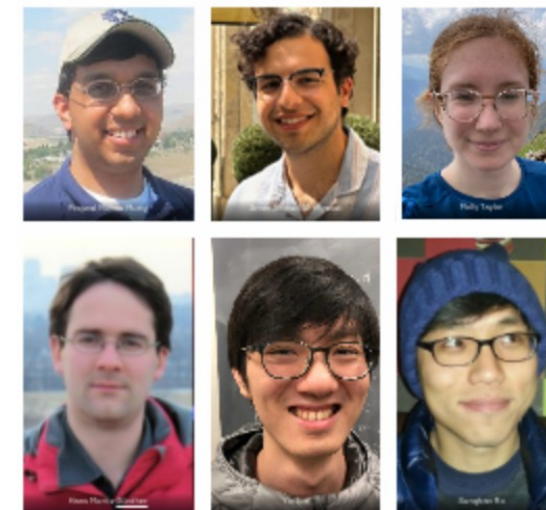
Project team

- Implementation
- Operation
- Maintenance
- Support



Users group

- Information flow between user community and project team
- Feedback
- Requests



Status / News

- Globus: Still working with the company to sort out technical issues
- Central MPI version recently deployed on SubMIT (last meeting)
- New low-I/O partition: submit-1gbs
 - Added slower-network (1 Gbit/s) nodes to SubMIT
 - Suitable for low-I/O workflows
- Setting up more robust internal resource management (cgroupsv2) to improve stability & performance
 - Hopefully will result in *additional* SLURM cores soon