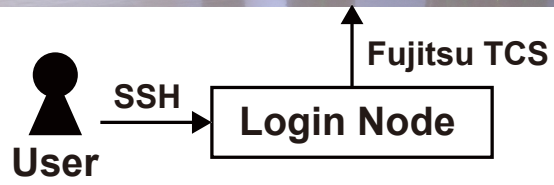
Open OnDemand on Fugaku

The supercomputer Fugaku

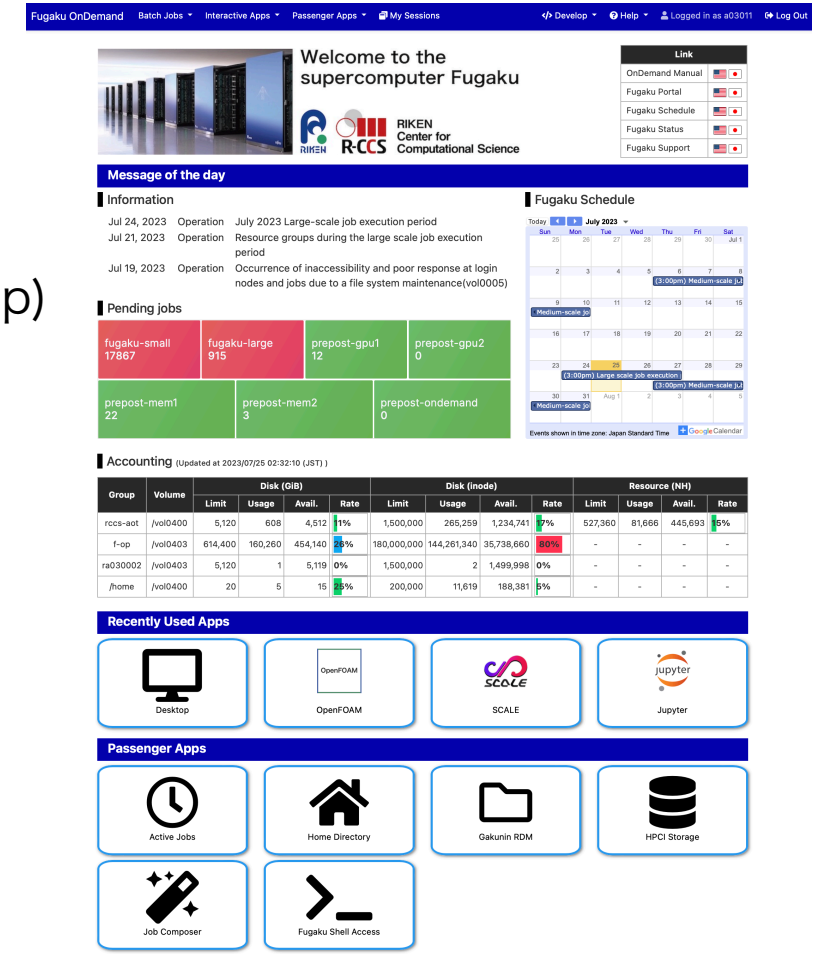
- RIKEN Center for Computational Science has operated Fugaku
- The conventional method of using Fugaku is to enter the login node via SSH and submit a job through the job scheduler (Fujitsu TCS)
- The issue with HPC clusters such as Fugaku is that there is a lot of prerequisite knowledge for using HPC clusters, so the learning cost is high for beginners
  - Generate SSH key pair and register public key
  - Command line interface
  - Job scheduler



OPEN OnDemand https://openondemand.org

Open OnDemand on Fugaku

- Open OnDemand empowers researchers with remote web access to HPC clusters
  - Run entirely in your web browser
  - Support interactive applications (e.g. remote desktop)
- We have customized Fugaku Open OnDemand
  - Support Fujitsu TCS
  - Top page to display useful information for users
    - Operational information/calendar
    - Job congestion (from grafana)
    - User resource usage
  - Install about 50 applications
  - Develop applications for external storages in Japan



Installed applications

- Interactive application

July 31, 2023

Category	Application
Development	Desktop, Jupyter, MATLAB*, RStudio, VSCode
Profiler	NVIDIA Visual Profiler*, NVIDIA Nsight Compute*, NVIDIA Nsight Systems*, Vampir*
Viewer	AVS/Express*, C-Tools, GaussView*, ImageJ, OVITO, Paraview, PyMOL, SALMON view, Smokeview, VESTA, VMD, VisIt, XCrySDen
Workflow	WHEEL

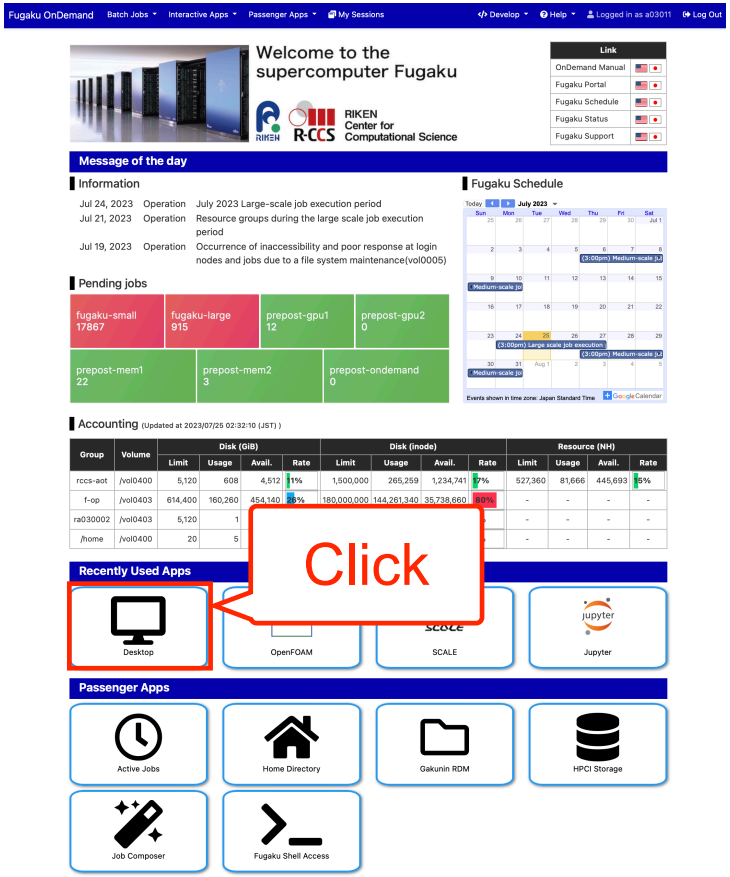
* commercial application

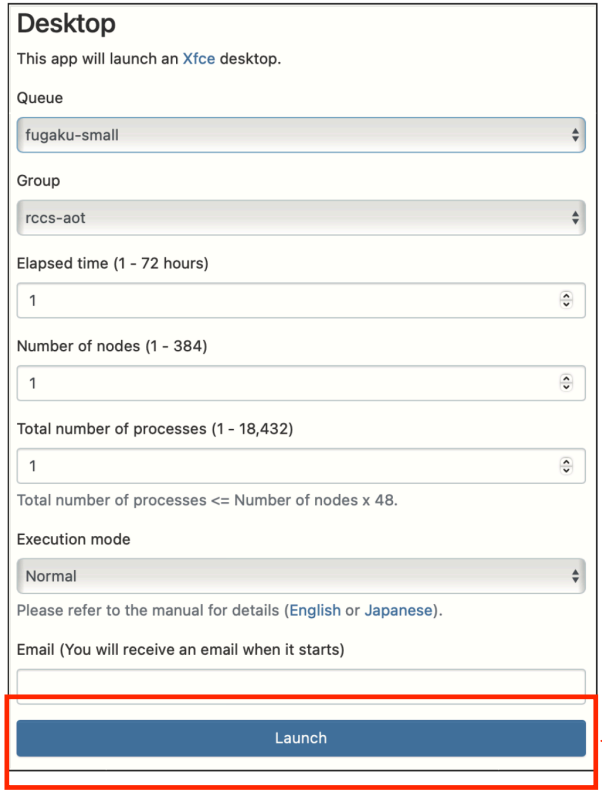
- Batch application

Category	Application
Climate	SCALE
Computer Aided Engineering	FDS, FrontFlow (blue/X), FrontISTR, OpenFOAM (Foundation/OpenCFD)
Condensed Matter Physics	ALAMODE, AkaiKKR, HΦ, mVMC, OpenMX, PHASE/0, Quantum Espresso, SALMON
Molecular Dynamics	GENESIS, GROMACS, LAMMPS, MODYLAS
Quantum Chemistry	ABINIT-MP, Gaussian*, NTChem, SMASH
Quantum Simulation	braket

How to use Fugaku Open OnDemand

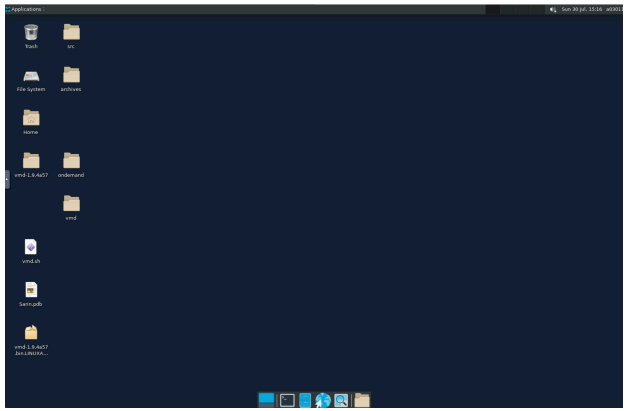
https://ondemand.fugaku.r-ccs.riken.jp





Click

Submit a job to Fugaku though Fujitsu TCS



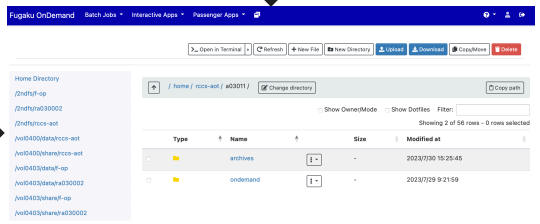
Remote Desktop runs in your web browser

Transferring data to external storage

- We develop applications on Open OnDemand to share data for **HPCI Shared Storage** and **GakuNin RDM**
  - **HPCI Shared Storage** is a large-scale data sharing infrastructure for high-speed and secure sharing of research data among Japanese research organizations
  - **GakuNin RDM** is a research data management service for sharing research data with collaborators in Japan
- Users can share data between Fugaku and these storages in your web browser

HPCI Shared Storage

GakuNin RDM



Fugaku Open OnDemand

Demo