OAK RIDGE National Laboratory

Scalable Protected Infrastructure (SPI)

2023 OLCF User Meeting

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OLCF Security Enclaves

Open

- Allows password authentication
- No export control restrictions
- UCAMS / XCAMS
- Separate filesystems, compute resource, DTNs
- Ascent, training resource
- Themis, longer term storage

Moderate

- Requires 2-factor authentication
- Frontier, Summit, Andes
- Multiple levels based on Export Control review
- Category 1
  - No export control restrictions
  - Access to HPSS
  - Allowed to share with other projects on the system
- Category 2
  - Limited export control restrictions
  - No HPSS
  - Not allowed to share with other projects on the system

Enhanced

- 2-factor authentication, from allowed IPs only
- HIPAA or ITAR regulations
- Separate filesystems
- Separate login nodes
- Separate DTNs
- No long-term storage
- Access OLCF compute resources through the SPI Citadel framework

Scalable Protected Infrastructure (SPI)

Provides resources and protocols that enable researchers to process protected data at scale.

Or in other words…

The SPI is a computing environment that is designed to grow or expand easily and accommodate new services or users all while maintaining a high-level of security and protection.

What is Citadel?

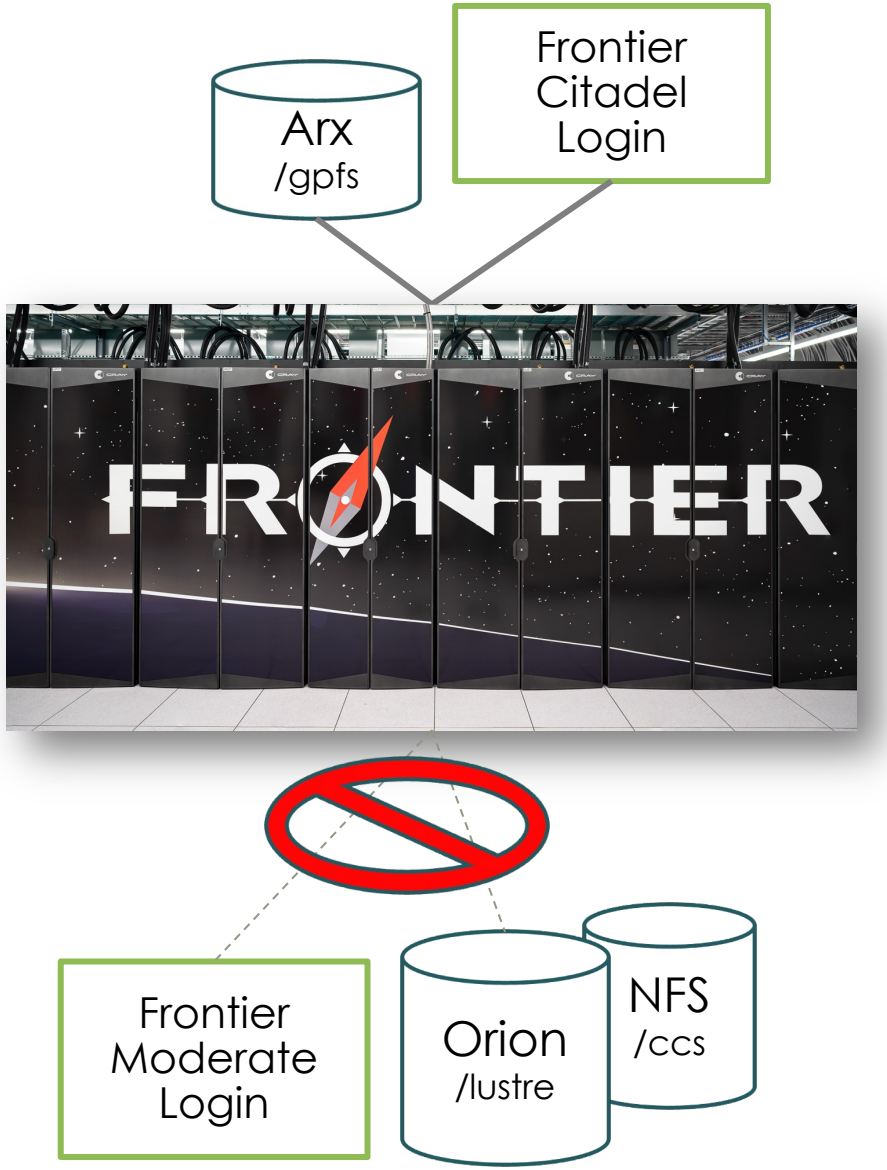
- Part of the SPI, CITADEL is a framework of security protocols that enable researchers to use our HPC resources to compute data containing:
  - Protected health information (PHI)
  - Personally identifiable information (PII)
  - Data protected under International Traffic in Arms Regulations (ITAR)
  - And other types of data that require privacy
- Enforces extra protections for managing PHI and PII
- Ensures data can not be accessed by other researchers or other projects

Available OLCF Resources

Compute	Summit and Frontier
	All compute nodes available
	Compute nodes reconfigured prior to access
	Separate login nodes
File Systems	GPFS resource named Arx (3PB)
	Provides both home and scratch
	Only assessable within Citadel framework
Data Transfer	Separate Data Transfer Nodes

Citadel framework

- Connection
  - ssh allowed from approved IPs only
- Login Nodes
  - Frontier Citadel login nodes separate from Moderate login nodes, but hardware and PrgEnv same
  - Arx is the only filesystem mounted in the Citadel framework. It provides home, scratch, and project areas.
  - Cannot see outside world
- Batch Submission
  - Moderate filesystems unmounted before Citadel job start
  - Separate queue
- Compute Resources
  - Same hardware and PrgEnv as seen from Moderate
  - Only mounts Arx



Notable Differences between SPI and Moderate

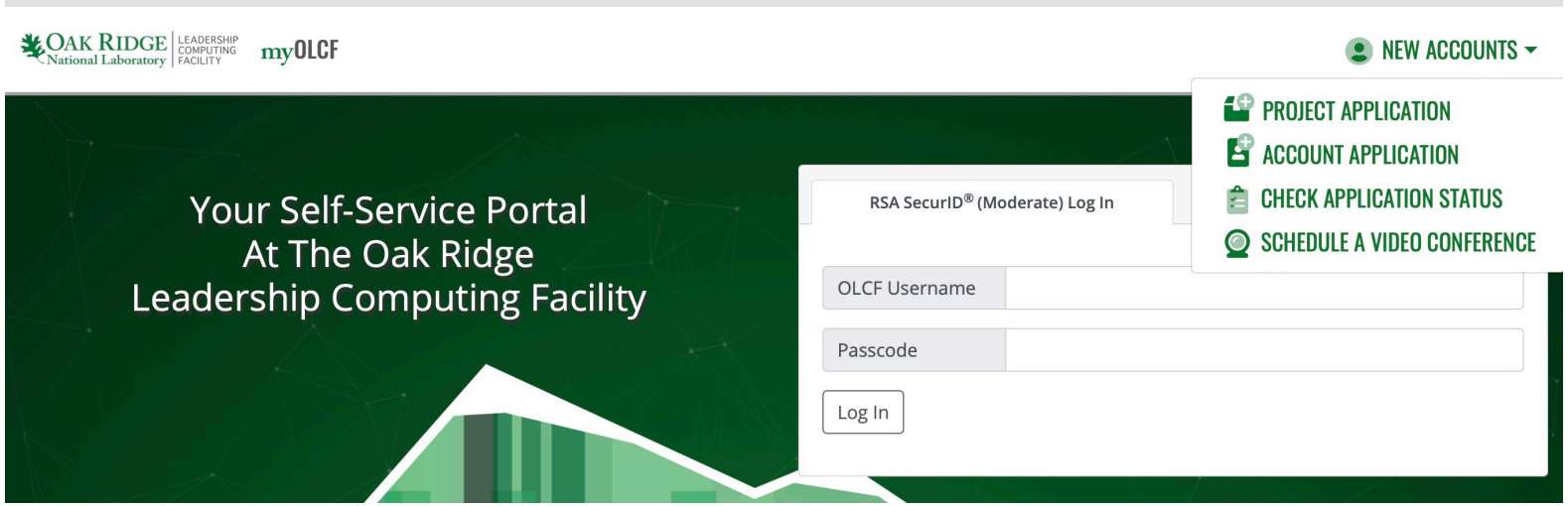
- UserIDs are unique to each SPI project
  - <userID>_<projID>_mde
- Direct access requires whitelisted IP
  - PI approval
- SPI resources mount only SPI filesystems
  - home, scratch, project shared
- SPI compute resources can not access external resources
  - Build workflow impacts
- Must use the system's Citadel resource login and submit batch jobs

Notable Similarities between SPI and Moderate

- Compute hardware is the same
- Login node hardware is the same
- Programming environment is the same
- Module system is the same
- Batch system is the same

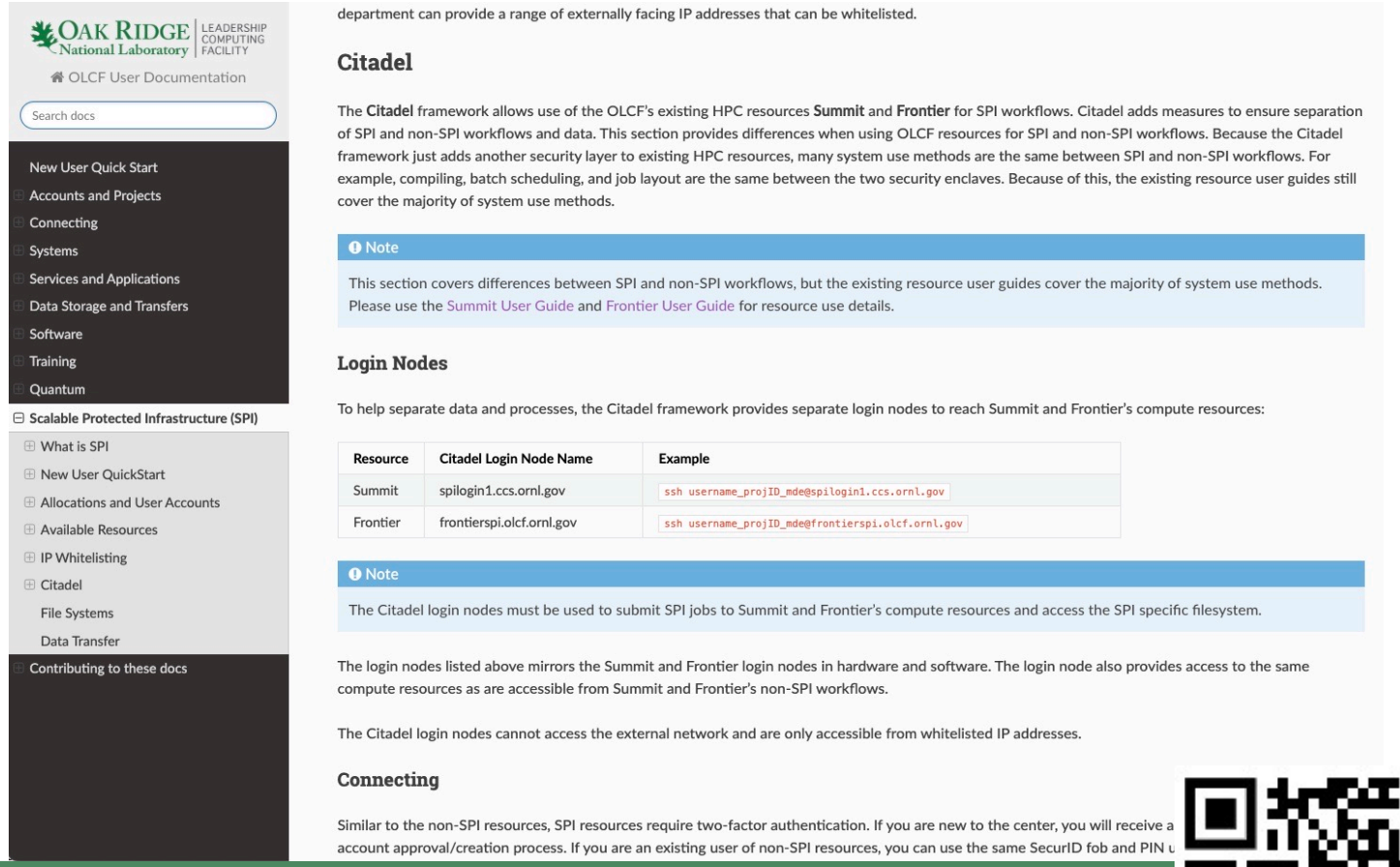
Requesting Access to SPI Resources

- my.OLCF.ornl.gov
- Appy for a new project
- Tell us about your work
- Your answers will trigger the SPI project process
- Process may take longer due to the nature of the data
- If you don't know, reach out to help@olcf.ornl.gov



Support

- docs.olcf.ornl.gov
- SPI section
  - SPI specific use
- Resource pages
  - Frontier/Summit use
- Questions:
  - help@olcf.ornl.gov




Questions?
We are here
Summit
Frontier
OAK RIDGE
National Laboratory

OLCF Reminders

Alpine Decommission in 11-weeks

- The GPFS center-wide scratch filesystem, Alpine will be decommissioned on Dec 31
- Data remaining on the system on January 01, 2024, will be **permanently and physically deleted**
- Please migrate any needed data now

OLCF Annual Survey now open

- Annual survey is now open
- We truly value your feedback
- Only takes 10-minutes