

Open OnDemand on Lawrencium

Sapana Soni

Outline

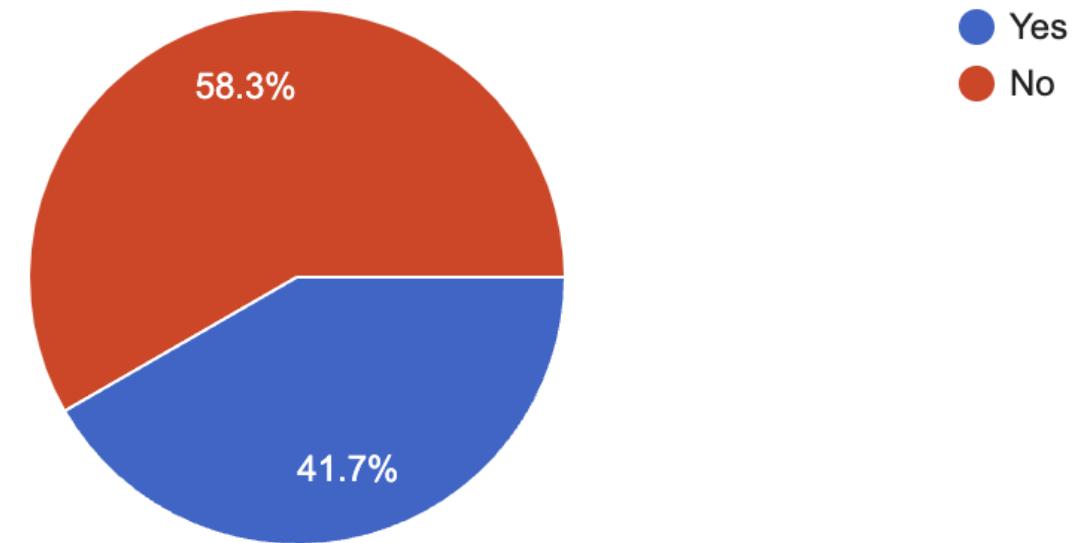
1. [Introduction](#)
2. [Accessing OOD on Lawrencium](#)
3. [Interactive Apps: Jupyter Server, RStudio Server, MATLAB, Desktop](#)
4. [Customizing Jupyter Kernels: Python and Julia](#)
5. [Files: file management](#)
6. [Clusters: LRC shell access](#)
7. [Jobs: job management and submission](#)

Training style : mostly demonstration

- If you have account on Lawrencium then open OOD dashboard and try it yourself as we go.
- Don't have account on Lawrencium? Don't worry! You can watch for now and try it later using training material.
- Training material is available on GitHub(https://github.com/lbnl-science-it/OOD_training_Feb2023.git.)
- Recording for the training will be available here[<https://it.lbl.gov/resource/hpc/for-users/training-and-tutorials/>].
- How to use Lawrencium?
 - Documentation page [link](#)

MyLRC User Portal: Getting and managing LRC accounts

- Getting a user account on LRC
- Getting access to project
- Requesting project account
 - Updating Project information
 - PCA Project renewal
 - Account deletion



MyLRC portal [login](#)

MyLRC [Documentation](#)

Getting a user account on LRC

Currentl Workflow:

1. Setup account on MyLRC [portal](#) as LBNL affiliate/UC bErkeley affiliate or as an External collaborator
2. Sign the User Access Agreement Form
3. Request to join existing project
4. PI approval
5. Lawrencium account creation by HPCS team
6. Users will confirmation email and PIN+OTP set up instructions.

Step 1: Use your LBNL email account to login. If you don't have LBNL email account then you can login using UC Berkeley email address or as an external collaborator.

MyLRC - Laboratory Research Computing Access Management System

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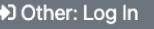
Home Center Summary Help 

Welcome to MyLRC

MyLRC is a user portal for managing access to the clusters and other resources provided by the Laboratory Research Computing (LRC) program.

- Join projects and gain access to Lawrencium and other clusters.
- Create new projects and manage project users.
- Request or purchase computing allowances.
- View details of current and past jobs, and allowance usages.
- And more!

For more information, refer to our [documentation](#).

MyLRC - Laboratory Research Computing Access Management System

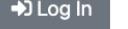
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Home Center Summary Help 

Log In: I am a...

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Berkeley Lab User
I have a Berkeley Lab Identity.


UC Berkeley Collaborator
I do not have a Berkeley Lab Identity, but I do have a CalNet ID.


External Collaborator
I do not have a Berkeley Lab Identity, and I do not have a CalNet ID.






LBNL Credentials

CILogon

Consent to Attribute Release

Berkeley Lab, Laboratory Research Computing, MyLRC (Production) requests access to the following information. If you do not approve this request, do not proceed.

- Your CILogon user identifier
- Your name
- Your email address
- Your username and affiliation from your identity provider

Selected Identity Provider

Lawrence Berkeley National Laboratory  

Remember this selection 

Log On

By selecting "Log On", you agree to the [privacy policy](#).

 BERKELEY LAB

Log in with your Berkeley Lab Identity

Username  

Password  

Log in

A service named [CILogon](#) requested that you login.

[Lost or forgot password?](#)



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[Questions & Comments](#)
[Privacy & Security Notice](#)



UC Berkeley Credentials

Logon

Consent to Attribute Release

Berkeley Lab | Laboratory Research Computing | MyLRC (Production) requests access to the following information. If you do not approve this request, do not proceed.

- Your CILogon user identifier
- Your name
- Your email address
- Your username and affiliation from your identity provider

Selected Identity Provider

University of California, Berkeley 

Remember this selection 

Log On

By selecting "Log On", you agree to the [privacy policy](#).

Berkeley
UNIVERSITY OF CALIFORNIA

CalNet Authentication Service

CalNet ID:

Passphrase (Case Sensitive):

SIGN IN [HELP](#)

[FORGOT CALNET ID OR PASSPHRASE?](#)
[MANAGE MY CALNET ACCOUNT](#)

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External Collaborator :

Chose your institution from the drop down menu and enter your credentials for the account. If your institution is not listed then chose google to use a google account for login.

The screenshot shows a 'Consent to Attribute Release' page. At the top right is a 'CILogon' logo. Below it is a search bar with 'Type to search' placeholder text. A dropdown menu is open, showing 'Google' as the selected option, followed by a list of other institutions: Lawrence Berkeley National Laboratory, 29 Mayis University, A*STAR - Agency for Science, Technology and Research, A. T. Still University, AAF Virtual Home, aa.lab.maeen.sa, AAI@EduHr Single Sign-On Service, Aalborg University, Aalto University, Aarhus School of Architecture, Aarhus School of Marine and Technical Engineering, Aarhus University, AARNet, Aba Teachers University, Abertay University, Aberystwyth University, ABES - French Bibliographic Agency for Higher Education, Abingdon and Witney College, Absalon University College.

The screenshot shows a 'Consent to Attribute Release' page. At the top right is a 'CILogon' logo. Below it is a search bar with 'Type to search' placeholder text. To the right of the search bar, 'Google' is selected from a dropdown menu, indicated by a green background. Below the dropdown is a link 'Remember this selection'. At the bottom right is a green 'Log On' button. The rest of the page content is identical to the first screenshot, including the list of institutions in the dropdown.

Step 2: Sign the User Access Agreement Form

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Home Center Summary Project Requests Jobs Help

sapanasoni522@gmail.com

Successfully signed in as sapanasoni522@gmail.com.

Welcome

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We'd love to hear your feedback. Please fill out this [Google Form](#) letting us know what you think.

If you would like to set up or update your access to a cluster, please complete the following steps.

First review and sign the cluster user agreement. Only then you can join a cluster project and gain access to the cluster.

Task	Status	Actions
1. Sign the cluster user access agreement.	X Unsigned	Review and Sign Click here
2. Create or join a project. ?	X 0 Project(s)	Create Join

Your LRC cluster account username: No Cluster Account

My LRC Cluster Projects »

! You are not part of any cluster projects at this time. Please click Join to join any of the existing projects. You can also click Create to request setup of a new project.

[View all projects and managers](#)

Software Use	All software used on LBNL computers must be appropriately acquired and used according to the appropriate licensing. Possession or use of illegally copied software is prohibited. Likewise, users shall not copy, store or transfer copyrighted software or data, except as permitted by the owner of the copyright.
Altering Authorized Access	Users are prohibited from changing or circumventing access controls to allow themselves or others to perform actions outside their authorized privileges or to circumvent security systems.
Data Modification or Destruction	Users are prohibited from taking unauthorized actions to intentionally modify, delete, or reconstruct information or programs.
Malicious Software	Users must not intentionally introduce or use malicious software such as computer viruses, Trojan horses, or worms. Users are responsible for taking reasonable steps to ensure the integrity and security of software they introduce to the system.
Denial of Service Actions	Users may not deliberately interfere with other users accessing system resources.
Notification	Users must notify LBNL immediately when they become aware that any of the accounts used to access LBNL have been compromised. LBNL reserves the right to temporarily disable accounts without prior notification in the event of a security compromise.
Account Usage	Each user of this system must have a unique login. Users are not allowed to share their accounts with others. IMPORTANT: The number one threat to this cluster is from a compromised endpoint (like your desktop computer) which allows your username/password to be stolen or your session to be hijacked. You are responsible for taking reasonable steps to ensure the security of any system you use to access LBNL systems.
Submit	→ <input type="checkbox"/> Acknowledge & Sign* <small>I have read the LBNL Policies and Procedures and understand my responsibilities in the use of LRC computing resources managed by the LBNL IT Division.</small> → Submit

Step 3: Request to join existing project

Welcome

MyLRC is a new user portal available to all users of LRC clusters, starting on Oct. 4, 2022.

We'd love to hear your feedback. Please fill out this [Google Form](#) letting us know what you think.

If you would like to set up or update your access to a cluster, please complete the following steps.

First review and sign the cluster user agreement. Only then you can join a cluster project and gain access to the cluster.

Task	Status	Actions
1. Sign the cluster user access agreement.	✓ Signed Dec. 12, 2022, 11:59 a.m.	Review
2. Create or join a project. ?	✗ 0 Project(s)	Create Join 

Your LRC cluster account username: No Cluster Account

My LRC Cluster Projects »

! You are not part of any cluster projects at this time. Please click Join to join any of the existing projects. You can also click Create to request setup of a new project.

[View all projects and managers](#)

Join a Project

Requests Pending Manager Approval

Below is a list of join requests that await approval by project managers. **Please contact a project manager or PI if your request has not been reviewed in a reasonable time frame.**

Once a request is approved, a separate request for cluster access under the project will automatically be created, to be processed by cluster administrators. The statuses of those requests may be viewed on the [home page](#) or on the project's detail page.

! No requests await approval by project managers.

Make a New Request

If you are joining your first project and are not an LBL employee with a verified LBL email (@lbl.gov), you must select an eligible PI to become your host user when requesting to join a project.

! Search

Projects: 248

ID	Name	PIs	Title	Cluster	Status	Join
1	dirac1	kewu	dirac1	DIRAC1	Active	+ Join
2	nano	davidp	nano	NANO	Active	+ Join
5	catamount	jbeaton	catamount	CATAMOUNT	Active	+ Join
6	mhg	mhg	mhg	MHG	Active	+ Join
7	ac_scsguest	gmjung	ac_scsguest	LAWRENCIUM	Active	+ Join
8	ac_nanotherapy	davidn	ac_nanotherapy	LAWRENCIUM	Active	+ Join

Step 4: Approval from Principal Investigator

PI will receive an email in following format.

Dear managers of ac_scsguest,

User Sapana Soni(ssoni@lbl.gov) has requested to join your project, ac_scsguest via the MyLRC User Portal.

Please approve/deny this request [here]{<https://mylrc.lbl.gov/project/7/review-join-requests/>}.

Thank you,
MyLRC User Portal team
<https://mylrc.lbl.gov>
Email:hpcshelp@lbl.gov

Step 5 and 6: Account creation and confirmation

Dear Sapana Soni,

As requested, your user account on the LRC supercluster now has access to the project ac_scsguest.

Your LRC supercluster username is - viraat

Instructions on how to access the LRC supercluster, hardware details, filesystems, job scheduler etc... are all available at this user guide:
<https://it.lbl.gov/service/scienceit/high-performance-computing/lrc/>

If this is the first time you are accessing the LRC supercluster, start with the below Logging In page: <https://it.lbl.gov/resource/hpc/for-users/getting-started/>

Please review online documentation. For any additional help or support questions contact us at hpcshelp@lbl.gov

Thank you,

MyLRC User Portal team

<https://mylrc.lbl.gov>

Email : hpcshelp@lbl.gov

Getting access to project:

Once you get a user account on MyLRC portal and on lawrencium cluster, you can request to join other projects. You can follow steps 3-6 from [Getting a user account on LRC](#).

Welcome

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We'd love to hear your feedback. Please fill out this [Google Form](#) letting us know what you think.

If you would like to set up or update your access to a cluster, please complete the following steps.

First review and sign the cluster user agreement. Only then you can join a cluster project and gain access to the cluster.

Task	Status	Actions
1. Sign the cluster user access agreement.	✓ Signed Oct. 6, 2022, 10:39 a.m.	Review
2. Create or join a project. ?	✓ 2 Project(s)	Create Join ←

Your LRC cluster account username: spsoni

[My LRC Cluster Projects »](#)

Project Name	Cluster	Access to Project on Cluster
dirac1	DIRAC1	Active
scs	SCS	Active

[View all projects and managers](#)

User account Features: Center Summary and Project

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sponi@berkeley.edu

LRC HPC Resources Scientific Impact

Active Allocations and Users by Division or Department

Division or Department	Active Allocation Count	User Count
Other	248	2384

Showing 1 to 1 of 1 entries
Total Active Users: 1306
Total Principal Investigators: 192

Resources and Allocations Summary

Allocations: 98.4%
Active by Type: 100.0%

Resource Name (Type)	Active Allocation Count
LAWRENCIUM Compute (Cluster)	236
ALICE Compute (Cluster)	1
ALSACC Compute (Cluster)	1
CATAMOUNT Compute (Cluster)	1
DIRAC1 Compute (Cluster)	1
JBEI Compute (Cluster)	1
JGI Compute (Cluster)	1
JGICLOUD Compute (Cluster)	1
MHG Compute (Cluster)	1
NANO Compute (Cluster)	1

Showing 1 to 10 of 13 entries

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sponi@berkeley.edu

You have requested to join Project ac_scsguest. The managers have been notified.

Join a Project

Requests Pending Manager Approval

Below is a list of join requests that await approval by project managers. Please contact a project manager or PI if your request has not been reviewed in a reasonable time frame.

Once a request is approved, a separate request for cluster access under the project will automatically be created, to be processed by cluster administrators. The statuses of those requests may be viewed on the [home page](#) or on the project's detail page.

ID	Name	PIs	Title	Cluster
7	ac_scsguest	gmjung	ac_scsguest	LAWRENCIUM

Make a New Request

Search

Projects: 248

ID	Name	PIs	Title	Cluster	Status	Join
1	dirac1	kewu	dirac1	DIRAC1	Active	Join

User account Features: Request and Jobs

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spsoni@berkeley.edu

Request Hub

Below are all of your requests in MyLRC. Click on a request section to view your requests of that type.

Collapse All - Expand All +

Cluster Access Requests

Project Join Requests

Pending Project Join Requests

#	Username	User Email	Project	Date Requested	Reason
1	spsoni@berkeley.edu	spsoni@berkeley.edu	ac_scsguest	Feb. 05, 2023	Need to use LRC cluster

Page 1 of 1

Previous Next

No completed project join requests!

Project Removal Requests

Project Renewal Requests

New Project Requests

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spsoni@berkeley.edu

Job List

Viewing your jobs and the jobs belonging to projects in which you are a PI or manager.

Filter

Status

Slurm ID

Project Name

Partition

Service Units

Number of Service Units

Submitted

MM/DD/YYYY

Started

MM/DD/YYYY

Ended

MM/DD/YYYY

Search

Reset

No search results!

User account Features: Jobs

Home Center Summary Project Requests Jobs Admin Help spsoni

Job List

Viewing only jobs belonging to you and belonging to projects in which you are a PI or manager. To view all jobs select "Show All Jobs" in the search form below and search, or click [here](#).

Filter

Status	Completed
Slurm ID	<input type="text"/>
Project Name	<input type="text"/>
Username	<input type="text"/>
Partition	<input type="text"/>
Service Units (1)	<input type="text"/> Number of Service Units <input type="button" value=""/>
Submitted	<input type="text"/> MM/DD/YYYY
Started	<input type="text"/> MM/DD/YYYY
Ended	<input type="text"/> MM/DD/YYYY
<input type="checkbox"/> Show All Jobs	
<input type="button" value="Search"/> <input type="button" value="Reset"/>	
 Export Job List to CSV	

Slurm ID (1)	Username	Project	Job Status (1)	Partition	Submit Date (1)	Service Units (1)
55640614	spsoni	scs	COMPLETED	es1	Feb. 02, 2023	8.02
55576553	spsoni	scs	COMPLETED	lr6	Jan. 31, 2023	0.01
55576498	spsoni	scs	COMPLETED	lr5	Jan. 31, 2023	1.64
55575037	spsoni	scs	COMPLETED	lr6	Jan. 31, 2023	0.43
55574967	spsoni	scs	COMPLETED	lr6	Jan. 31, 2023	0.71
55574932	spsoni	scs	COMPLETED	lr6	Jan. 31, 2023	0.16
55574901	spsoni	scs	COMPLETED	es1	Jan. 31, 2023	0.09
55574841	spsoni	scs	COMPLETED	es1	Jan. 31, 2023	0.03
55574834	spsoni	scs	COMPLETED	es1	Jan. 31, 2023	0.06
55574788	spsoni	scs	COMPLETED	lr6	Jan. 31, 2023	0.07
55574685	spsoni	scs	COMPLETED	lr5	Jan. 31, 2023	2.81
54500778	spsoni	scs	COMPLETED	lr6	Dec. 08, 2022	15.69
54500770	spsoni	scs	COMPLETED	lr6	Dec. 08, 2022	1.42
54500767	spsoni	scs	COMPLETED	lr6	Dec. 08, 2022	1.51
54500385	spsoni	scs	COMPLETED	lr6	Dec. 08, 2022	1.19
54489594	spsoni	scs	COMPLETED	lr6	Dec. 07, 2022	6.24
54488522	spsoni	scs	COMPLETED	lr6	Dec. 07, 2022	98.96
54488513	spsoni	scs	COMPLETED	lr6	Dec. 07, 2022	0.06
54477557	spsoni	scs	COMPLETED	o0d_inter	Dec. 06, 2022	0.00
54419270	spsoni	scs	COMPLETED	lr6	Dec. 02, 2022	0.11
54419227	spsoni	scs	COMPLETED	lr6	Dec. 02, 2022	0.06
54419214	spsoni	scs	COMPLETED	lr6	Dec. 02, 2022	0.22
54145360	spsoni	scs	COMPLETED	lr6	Nov. 17, 2022	0.04
54145353	spsoni	scs	COMPLETED	lr6	Nov. 17, 2022	0.07
54145352	spsoni	scs	COMPLETED	lr6	Nov. 17, 2022	0.07
54145277	spsoni	scs	COMPLETED	lr6	Nov. 17, 2022	0.04
54145275	spsoni	scs	COMPLETED	lr6	Nov. 17, 2022	0.02
54145166	spsoni	scs	COMPLETED	lr6	Nov. 17, 2022	0.11
54145161	spsoni	scs	COMPLETED	lr6	Nov. 17, 2022	0.11
54145156	spsoni	scs	COMPLETED	lr6	Nov. 17, 2022	0.09

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Job Detail: 55640614

Job Information

Slurm ID:	55640614
Username:	spsoni
Project:	scs
Job Status:	COMPLETED
Submit Date:	Feb. 2, 2023, 1:53 p.m.
Start Date:	Feb. 2, 2023, 1:53 p.m.
End Date:	Feb. 2, 2023, 3:54 p.m.
Partition:	es1
Nodes:	n0047.es1
Service Units (1) :	8.02
Quality of Service:	es_normal
Number of CPUs:	4
Number of Required Nodes:	1
Number of Allocated Nodes:	1
Raw Time (seconds):	2.0055556
CPU Time (seconds):	8.022225

Science IT

Requesting project account and management

LBNL affiliated PIs can request to create a project account. Manager role can be assigned to a project user for managing project account and project renewal (for PCA projects)

Welcome

MyLRC is a new user portal available to all users of LRC clusters, starting on Oct. 4, 2022.

We'd love to hear your feedback. Please fill out this [Google Form](#) letting us know what you think.

If you would like to set up or update your access to a cluster, please complete the following steps.

First review and sign the cluster user agreement. Only then you can join a cluster project and gain access to the cluster.

Task	Status	Actions
1. Sign the cluster user access agreement.	Signed Oct. 6, 2022, 10:39 a.m.	Review
2. Create or join a project. ?	✓ 2 Project(s)	Create Join

Your LRC cluster account username: **spsoni**

[My LRC Cluster Projects »](#)

Project Name	Cluster	Access to Project on Cluster
dirac1	DIRAC1	Active
scs	SCS	Active

[View all projects and managers](#)

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Create a Project

Request to create a new project (Slurm account) on one of the clusters below. You may also request to [join](#) an existing project.

Lawrencium

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New Lawrencium Project

Eligible users may request to create a new project on the Lawrencium cluster, or pool their allowances with those of existing projects. The following allowances are available:

- PI Computing Allowance (PCA) **POOL**
- Condo Allocation
- Recharge Allocation (Pay for Used Time)

This form is intended for Principal Investigators (PIs) or users acting on behalf of PIs. The user who fills it out will become a manager on the project: the user will receive access to the project on the cluster, will have permissions to manage the project and its users, and cannot opt out of email notifications (unless at least one other user becomes a manager). If this does not sound like your role on the project, please ask the appropriate user to fill it out.

If you are filling out the form on behalf of another PI, that PI will be notified by email that a request is being made by you.

MOU The PI will be contacted to provide a signed Memorandum of Understanding as part of the approval process.
POOL The allowance is eligible for pooling of service units.

Continue Back

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Lawrencium: Computing Allowance

Select a computing allowance.

Computing Allowance*

PI Computing Allowance (Computing Allowance)

Next Step

Step 1 of 6

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Lawrencium: Computing Allowance

Select a computing allowance.

Computing Allowance*

PI Computing Allowance (Computing Allowance)

Condo Allocation (Computing Allowance)

Recharge Allocation (Computing Allowance)

Step 1 of 6

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Lawrencium: Allocation Period

Allowance: PI Computing Allowance

Select the time period during which the project's allocation will be valid. The listed number of service units will be usable between the start date and end date for the selected period.

A request for a time period that has not begun yet may be approved before its start date, but will not be fully processed (i.e., service units will not be usable) until then. Any service units not used by its end date will be forfeited.

Allocation Period*

Allowance Year 2022 - 2023 (2022-10-01 - 2023-09-30) (200000.00 SUs)

First Step Previous Step Next Step

Step 2 of 8

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Lawrencium: Principal Investigator

Allowance: PI Computing Allowance >> Allocation Period: Allowance Year 2022 - 2023

Select an existing user to be a Principal Investigator of the project. You may search for the user in the selection field. If the desired user is not listed, you may skip this step and specify information for a new PI in the next step.

Note: Only LBL employees, users with an "@lbl.gov" email, can be selected as a PI.

Note: Each PI may only have one PI Computing Allowance at a time, so any that have pending requests or active allocations are not selectable.

Principal Investigator

-
- Aaron Fafarman (atf37@drexel.edu)
- Aaron Szasz (aszasz@berkeley.edu)
- Aaron Szasz (aszasz@lbl.gov)
- Aashish Sharma (asharma@lbl.gov)
- Aatif Jiwani (aatifjiwani@lbl.gov)
- Abdullah Cihan (acihan@lbl.gov)
- Abdullah Maruf (amaruf@lbl.gov)
- Abdulrahman Aldeessary (abdulrahman@berkeley.edu)

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Lawrencium: New Project Details

Allowance: PI Computing Allowance >> Allocation Period: Allowance Year 2022 - 2023 >> Existing PI: Gary Jung (gmjung@lbl.gov) >> Not Pooling

You are creating a new project. Please provide the following details:

Name*

A unique name for the project, which must contain only lowercase letters and numbers. This will be used to set up the project's SLURM scheduler account.

Title*

A unique, human-readable title for the project.

Description*

A few sentences describing your project.

[First Step](#) [Previous Step](#) [Next Step](#)

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Lawrencium: New Project Details

Allowance: PI Computing Allowance » Allocation Period: Allowance Year 2022 - 2023 » Existing PI: Gary Jung (gmjung@lbl.gov) » Not Pooling

You are creating a new project. Please provide the following details:

Name*

A unique name for the project, which must contain only lowercase letters and numbers. This will be used to set up the project's SLURM scheduler account.

Title*

A unique, human-readable title for the project.

Description*

A few sentences describing your project.

[First Step](#) [Previous Step](#) [Next Step](#)

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Lawrencium: New Project Details

Allowance: PI Computing Allowance » Allocation Period: Allowance Year 2022 - 2023 » Existing PI: Gary Jung (gmjung@lbl.gov) » Not Pooling

You are creating a new project. Please provide the following details:

Name*

A unique name for the project, which must contain only lowercase letters and numbers. This will be used to set up the project's SLURM scheduler account.

Title*

A unique, human-readable title for the project.

Description*

A few sentences describing your project.

[First Step](#) [Previous Step](#) [Next Step](#)

Project creation request will be placed when survey is filled and submitted. Current status of the project will be available in Requests section.

MyLRC - Laboratory Research Computing Access Management System

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Bringing Science Solutions to the World

Home Center Summary Project Requests Jobs Admin Help

sponi ▾

Lawrencium: Billing ID

Allowance: PI Computing Allowance » Allocation Period: Allowance Year 2022 - 2023 » Existing PI: Gary Jung (gmjung@lbl.gov) » Not Pooling

Please provide an LBL Project ID, which may be used for billing:

Project ID*

Example: 123456-789

First Step Previous Step Next Step

Step 6 of 7

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Lawrencium: Survey

Allowance: PI Computing Allowance » Allocation Period: Allowance Year 2022 - 2023 » Existing PI: Gary Jung (gmjung@lbl.gov) » Not Pooling
» Requested Project:

Please respond to the following questions to provide us with more information about your project and computational needs.

Scope and intent of research needing computation*

Computational aspects of the research*

Existing computing resources (outside of Lawrencium) currently being used by this project. If you use cloud computing resources, we would be interested in hearing about it.

Which of the following best describes your need for this system:

- Meets intermittent or small need for compute cycles
- Provides a resource since my group/area cannot purchase its own
- Provides additional compute cycles beyond what is provided on my own cluster
- Provides ability to run larger-scale jobs than those I can't run on my own cluster
- Provides an onramp to prepare for running on large systems or applying for grants and supercomputing center allocations
- Provides additional compute cycles

How many processor cores does your application use? (min, max, typical runs)

PI receives an email upon processing the project creation request.

Example email:

Dear LRC HPC Resources user,

Your request to create project pc_test has been processed, and the project has been set up on the cluster.

You may manage your project at [https://mybrc.brc.berkeley.edu/project/<project_number>/](https://mybrc.brc.berkeley.edu/project/<project_number>)

If you have any questions, contact us at {{ hpcshelp@lbl.gov }}.

Thank you,

MyLRC User Portal team

<https://mylrc.lbl.gov>

Email : hpcshelp@lbl.gov

Project Management

Welcome

MyLRC is a new user portal available to all users of LRC clusters, starting on Oct. 4, 2022. X

We'd love to hear your feedback. Please fill out this [Google Form](#) letting us know what you think.

If you would like to set up or update your access to a cluster, please complete the following steps.

First review and sign the cluster user agreement. Only then you can join a cluster project and gain access to the cluster.

Task	Status	Actions
1. Sign the cluster user access agreement.	✓ Signed Oct. 6, 2022, 10:39 a.m.	Review
2. Create or join a project. ?	✓ 2 Project(s)	Create Join

Your LRC cluster account username: spsoni

[My LRC Cluster Projects »](#)

Project Name	Cluster	Access to Project on Cluster
dirac1	DIRAC1	Active
scs	SCS	Active

[View all projects and managers](#)

SCS

[Manage Project](#) [Update Project Information](#) [Archive Project](#)

[Add Users](#) [Review Join Requests 0](#)

[Project Information](#)

Principal Investigators:
Gary Jung (gmjung)

Title: scs

Description: This is a HPCS group, we manage Lawrencium cluster and departmental clusters. We also provide services such as software installation, HPC consultation and training.

Cluster: SCS

Project Status: Active

Created: Oct. 03, 2022

Requests to Join: User requests to join the project must be approved by a PI.

Project Information: Project information can be modified using Update Project Information button.
Note: PID change is not possible on the portal. PI/manager will have to open a ticket by sending an email to hpcshelp@lbl.gov with project name and new PID.

Welcome

MyLRC is a new user portal available to all users of LRC clusters, starting on Oct. 4, 2022. X

We'd love to hear your feedback. Please fill out this [Google Form](#) letting us know what you think.

If you would like to set up or update your access to a cluster, please complete the following steps.

First review and sign the cluster user agreement. Only then you can join a cluster project and gain access to the cluster.

Task	Status	Actions
1. Sign the cluster user access agreement.	✓ Signed Oct. 6, 2022, 10:39 a.m.	Review
2. Create or join a project. ?	✓ 2 Project(s)	Create Join

Your LRC cluster account username: spsoni

[My LRC Cluster Projects »](#)

Project Name	Cluster	Access to Project on Cluster
dirac1	DIRAC1	Active
scs	SCS	Active

View all projects and managers

Title*

Description*

Save Cancel

Project Join Requests from users

SCS

Manage Project Update Project Information Archive Project

Add Users Review Join Requests 0

Project Information

Principal Investigators:
Gary Jung (gmjung)

Title: scs

Description: This is a HPCS group, we manage Lawrencium cluster and departmental clusters. We also provide services such as software installation, HPC consultation and training.

Cluster: SCS

Project Status: Active

Created: Oct. 03, 2022

Requests to Join: User requests to join the project must be approved by a PI.

Allocations 1

Show 10 entries Search:

Resource Name	Information	Status	Start Date	End Date	More Details
SCS Compute	Service Units: 109166.37/100000000.00 (0.11 %)	Active	2000-01-01		

Showing 1 to 1 of 1 entries

Review requests to join project: scs

<input type="checkbox"/>	#	Username	First Name	Last Name	Email	Role	Need Host	Reason
<input type="checkbox"/>	1	spsoni@berkeley.edu	Sapana	Soni	spsoni@berkeley.edu	User	No	test join request for spsoni

Approve Selected Users Deny Selected Users [Back to Project](#)

PCA Project Renewal: PCA projects are renewed every year on 1st October and 300K SU are allocated for the Fiscal year. Condo(lr_) and recharge accounts(ac_) won't have this option since these project do not need renewal.

pc_test

Manage Project

+ Add Users + Review Join Requests 0 + Renew Allowance



Project Information

Principal Investigators:

Existing Project users and their details.
Managers or PIs can add user to project account.

Users 32					Add Users	Remove Users	Leave Project
Name	Email	Role	Cluster Username	Project Access on Cluster	Actions		
Name1 Familyname1	email1@lbl.gov	User	username1	Active	Edit		
Name2 Familyname2	email2@lbl.gov	Principal Investigator	username2	Active	Edit		
Name3 Familyname3	email3@gmail.com	User	username3	Active	Edit		
Name4 Familyname4	email4@lbl.gov	Manager	username4	Active	Edit		

Project User Detail

Project: scs

[User Detail](#)

First Name:	Sapana
Last Name:	Soni
Email:	ssoni@lbl.gov
Role:	User
Enable Notifications:	<input type="checkbox"/>

[Update](#) [Back to Project](#)

[Cluster Access](#)

Cluster Username:	spsoni
Project Access on Cluster:	Active

Add users to project: scs

Search String*

Copy paste usernames separated by space or newline for multiple username searches!

Search by*

Exact Username Only
 All Fields This option will be ignored if multiple usernames are entered in the search user text area.

[Search](#)

User Deletion

1. Remove users from project

User can request to leave the project or PI/manager can request removing users from the project on MyLRC portal. After removal from project user won't be able to submit jobs using that project account.

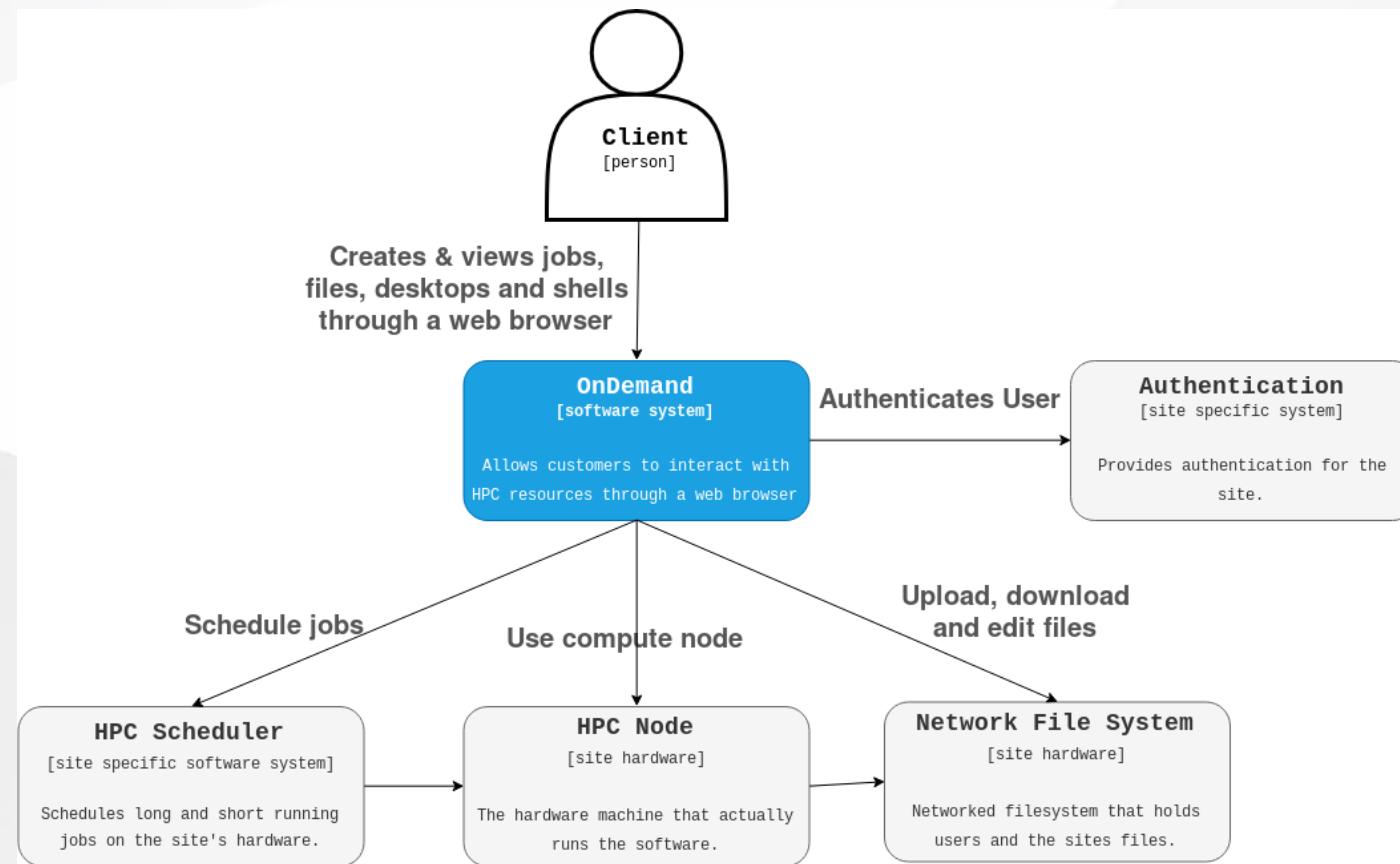
2. Remove from a project & delete user account

Project PI will be responsible to inform HPCS team to inform about user's account deletion through ticketing system. User's account will be completely deleted from Lawrencium super cluster. A home and scratch directory will be removed. Account management charges of \$25 will be canceled from billing cycle.

Open OnDemand: Introduction

- What is Open OnDemand?
 - OpenOnDemand is a web platform that provides an easy access to the cluster's HPC resources and services.
 - Designed and developed by Ohio Supercomputer Center.
- Why OOD?
 - **New users:** intuitive and easy access to computing resources, removes barrier in using HPC resources for their research.
 - **Advanced users:** alternative and convenient way to traditional command line access

- How OOD works at system level?

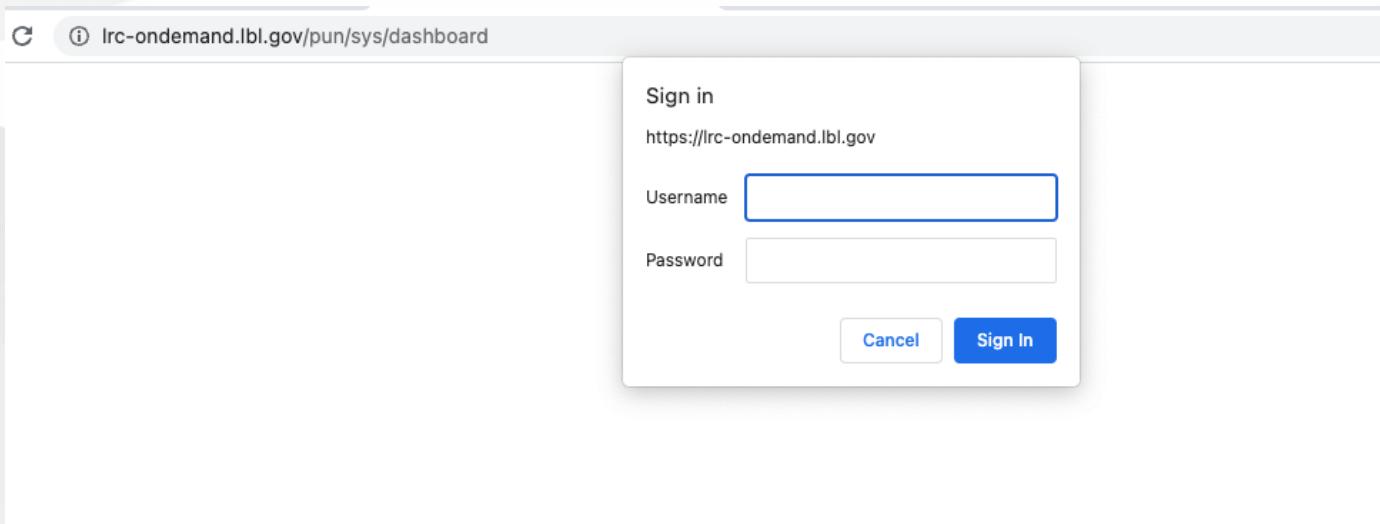


Users are able to use HPC services more efficiently through Open OnDemand.

Accessing OOD on Lawrencium

1. Web link to connect : <https://lrc-on-demand.lbl.gov/>

Note: Use Chrome or Firefox to browse this page. Safari has known [authentication issues](#).



2. Use your LRC username and PIN+one-time password (OTP)
- same credentials you use to login Lawrencium cluster

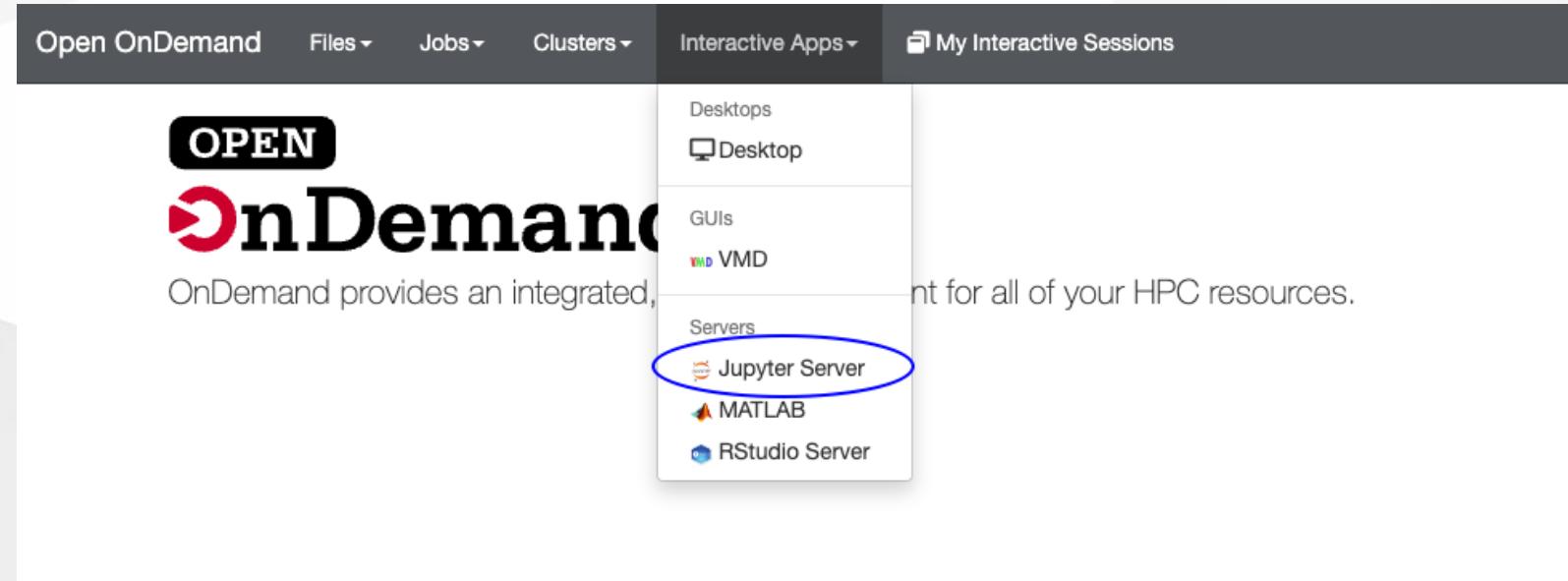
OOD Dashboard on Lawrencium

On successful authentication you will see a OOD dashboard.

The screenshot shows the OnDemand (OOD) dashboard interface. At the top, there's a dark header bar with white text and icons. From left to right, the header includes: 'Open OnDemand', 'Files', 'Jobs', 'Clusters', 'Interactive Apps', 'My Interactive Sessions' (with a small icon), 'Help', 'Logged in as spsoni' (with a user icon), and 'Log Out' (with a log-out icon). Below the header, there's a large, bold 'OPEN' button with a black background and white text. Underneath the button is the 'OnDemand' logo, which consists of a red arrow-like shape followed by the word 'OnDemand' in a bold, black, sans-serif font. A descriptive subtitle below the logo reads: 'OnDemand provides an integrated, single access point for all of your HPC resources.'

Interactive Apps: Jupyter server

Click on **Interactive apps --> Jupyter Server** to open Jupyter notebook



Interactive mode

Home / My Interactive Sessions / Jupyter Server

Interactive Apps

- Desktops
- Desktop
- GUIs
- VMD
- Servers
- Jupyter Server**
- MATLAB
- RStudio Server

Jupyter Server version: d96c37b

This app will launch a [Jupyter](#) server using [Python](#) on the [LBNL](#) Science-IT Laboratory Research Computing([LRC](#)) Infrastructure clusters.

Type of use

interactive_mode, for exploration

Choose the mode of running your Jupyter Server

Wall Clock Time

1

How many hours do you want to run this Jupyter Server for ?

Number of CPU cores per Node

1

Please specify the number of CPU cores you want per node for this Jupyter Server

Email address (optional)

Enter your email address if you would like to receive an email when the session starts. Leave blank for no email.

Launch

* The Jupyter Server session data for this session can be accessed under the [data root](#) directory.

Compute mode

Interactive Apps

- Desktops
- Desktop
- GUIs
- VMs
- Servers
 - Jupyter Server
 - MATLAB
 - RStudio Server

Jupyter Server version: d96c37b

This app will launch a [Jupyter](#) server using [Python](#) on the [LBNL Science-IT](#) Laboratory Research Computing([LRC](#)) Infrastructure clusters.

Type of use

compute_mode

Choose the mode of running your Jupyter Server

Wall Clock Time

1

How many hours do you want to run this Jupyter Server for ?

Name of the job

test

SLURM Partition

cf1

Choose the name of the SLURM Partition in which you want to launch this Jupyter Server

SLURM Project/Account Name

scs

For non Lawrencium partitions you can leave this blank.

SLURM QoS Name

cf_debug

Most users can leave it black for default assignment, Lawrencium Condo users want to specify their condo QoS name

Number of Nodes

1

Please specify the number of nodes you want for this Jupyter Server

Email address (optional)

Enter your email address if you would like to receive an email when the session starts. Leave blank for no email.

Launch

* The Jupyter Server session data for this session can be accessed under the [data root directory](#).

```
(base) [spsoni@n0003 ~]$ sacctmgr show association -p user=spsoni
Cluster|Account|User|Partition|Share|Priority|GrpJobs|GrpTRES|GrpSubmit|GrpWall|Grp
xTRES|MaxTRESPerNode|MaxSubmit|MaxWall|MaxTRESMins|QOS|Def QOS|GrpTRESRunMins|
perceus-00|dirac1|spsoni|ood_inter|1|||||||lr_interactive|||
perceus-00|dirac1|spsoni|dirac1|1|||||||normal|||
perceus-00|scs|spsoni|etna_shared|1|||||||normal|||
perceus-00|scs|spsoni|etna|1|||||||normal|||
perceus-00|scs|spsoni|etna_gpu|1|||||||normal|||
perceus-00|scs|spsoni|ood_inter|1|||||||lr_interactive|||
perceus-00|scs|spsoni|es1|1|||||||es_debug,es_lowprio,es_normal|||
perceus-00|scs|spsoni|cf1|1|||||||cf_debug,cf_lowprio,cf_normal|||
perceus-00|scs|spsoni|cm1|1|||||||cm1_debug,cm1_normal|||
perceus-00|scs|spsoni|lr_bigmem|1|||||||lr_debug,lr_normal|||
perceus-00|scs|spsoni|lr6|1|||||||lr6_lowprio,lr_debug,lr_normal|||
perceus-00|scs|spsoni|lr5|1|||||||lr_debug,lr_lowprio,lr_normal|||
perceus-00|scs|spsoni|lr4|1|||||||lr_debug,lr_lowprio,lr_normal|||
perceus-00|scs|spsoni|lr3|1|||||||lr_debug,lr_lowprio,lr_normal|||
```

Session was successfully created.

Home / My Interactive Sessions

Interactive Apps

- Desktops
- Desktop
- GUIs
- VMD
- Servers
- Jupyter Server
- MATLAB
- RStudio Server

Jupyter Server (51665742)

1 node | 64 cores | Starting

Created at: 2022-07-21 13:56:39 PDT

Time Remaining: 59 minutes

Session ID: 032d6e1a-efbc-406b-8ceb-4eab3c54dc95

Your session is currently starting... Please be patient as this process can take a few minutes.

Delete

Session was successfully created.

Home / My Interactive Sessions

Interactive Apps

- Desktops
- Desktop
- GUIs
- VMD
- Servers
- Jupyter Server
- MATLAB
- RStudio Server

Jupyter Server (51665742)

1 node | 64 cores | Running

Host: >_n0014.ct1

Created at: 2022-07-21 13:56:39 PDT

Time Remaining: 58 minutes

Session ID: 032d6e1a-efbc-406b-8ceb-4eab3c54dc95

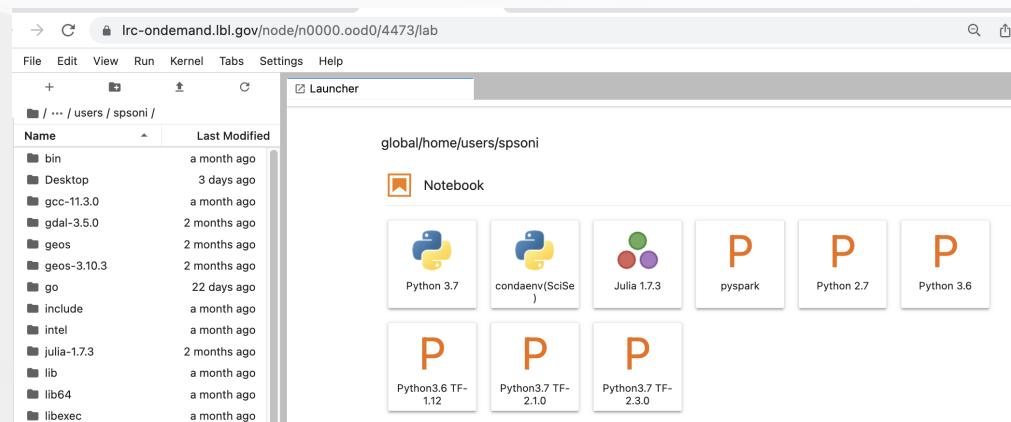
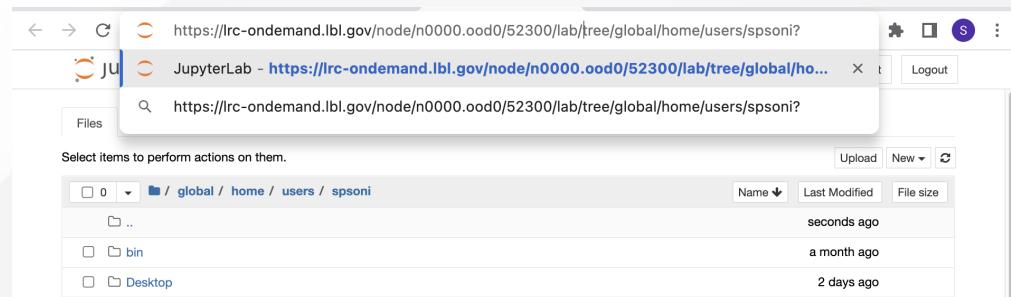
Connect to Jupyter

Delete



The screenshot shows a Jupyter Notebook cell titled 'Untitled1'. The cell contains the code 'In [3]: print("Hello World!")'. When run, the output 'Hello World!' is displayed below the code. The notebook interface includes a header with a logo, the title 'Untitled1', a 'Logout' button, and a menu bar with 'File', 'Edit', 'View', 'Insert', 'Cell', 'Kernel', 'Widgets', and 'Help'. A toolbar below the menu bar provides various editing and navigation tools. The kernel selected is 'Python 3.6'.

To load Jupyter lab simply add
lab/ before **tree/** in jupyter
server url.



Customizing Jupyter Kernels : Python and Julia

If you'd like to use a different language or version of python or different conda environment not indicated in the drop-down menu of jupyter notebook you'll need to create your own kernel.

Python:

There are two ways to add python kernel to jupyter notebook.

1. Using conda environment
2. Manually creating a new kernel

[Click here for details.](#)

Customizing python kernel using conda environment

```
# Creating a pykernel for 3.9.12 version of python and installing packages
module load python/3.9.12
# Create the environment in your home directory:
conda create --name=py39 python=3.9 ipykernel
source activate py39
python -m ipykernel install --user --name py39 --display-name="py39(Sci)"
conda install -c conda-forge scipy
```

Creating environment in scratch space: \$USER is your own username.

```
conda create -p /global/scratch/users/$USER/py39_scr python=3.9 ipykernel
source activate /global/scratch/users/$USER/py39_scr
python -m ipykernel install --name=py39_scr --prefix=/global/scratch/users/$USER/py39_scr --display-name="py39_scratch"
#create symlink to kernel in custom path
ln -s /global/scratch/users/$USER/py39 /global/home/users/$USER/.local/share/jupyter/kernels/py39
```

You need to create a symlink in /global/home/users/\$USER/.local/share/jupyter/kernels/ directory so that kernel appears in the jupyter notebook.

Julia:

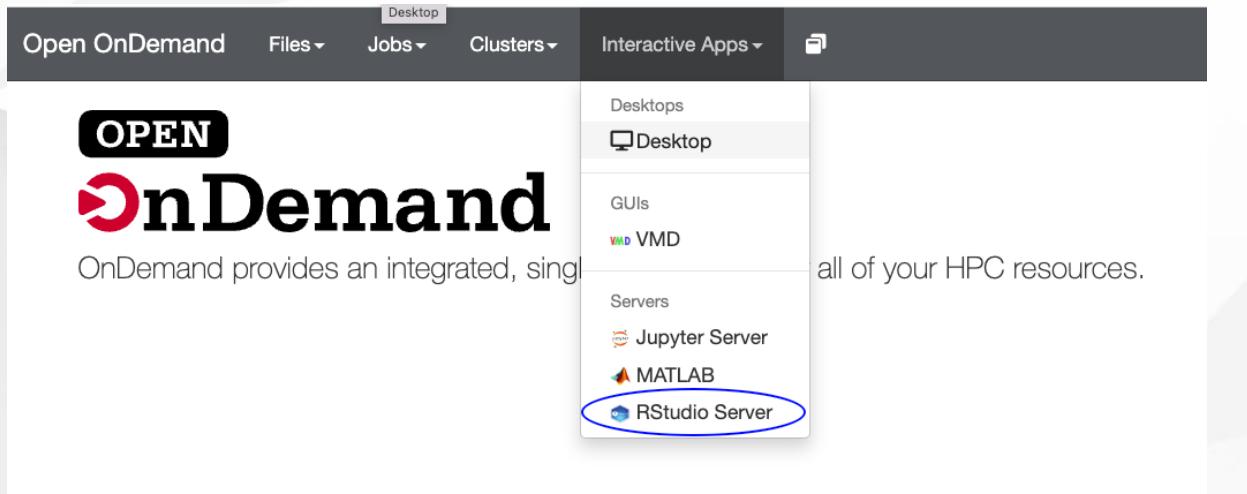
Julia kernel can be added in Jupyter for writing a Julia code in Jupyter notebook. To add a Julia kernel to Jupyter we only need to add the IJulia package.

```
module load julia/1.0.3
julia --version
julia
using Pkg
Pkg.add("IJulia")
Pkg.build("IJulia")
```

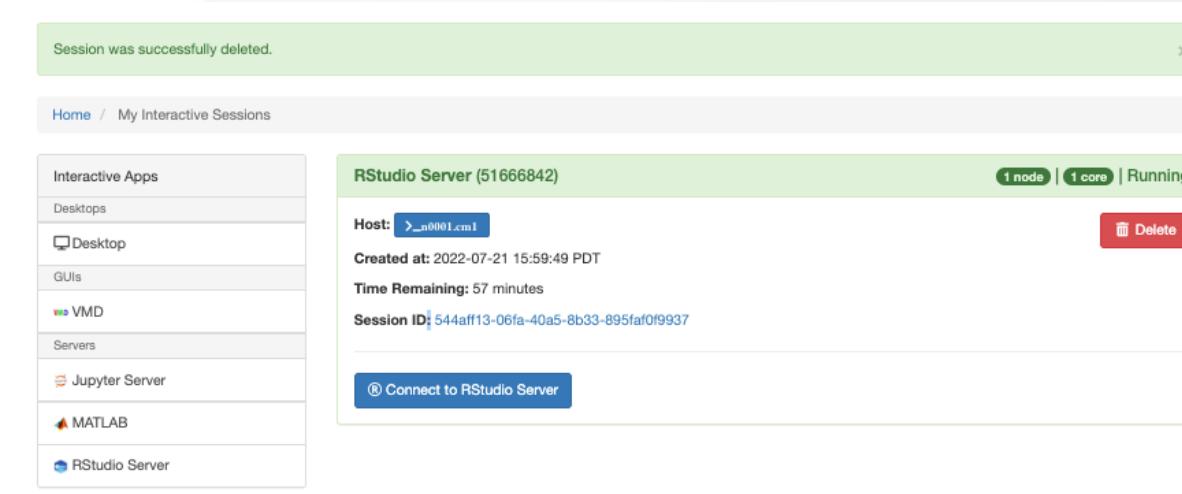
To remove unwanted jupyter kernel use following commands.

```
module load python/3.9.12
jupyter kernelspec list
jupyter kernelspec uninstall julia-1.0
jupyter kernelspec uninstall py39
```

Interactive Apps: RStudio



The screenshot shows the OnDemand interface. At the top, there's a navigation bar with 'Open OnDemand', 'Files', 'Jobs', 'Clusters', 'Interactive Apps', and a search icon. Below this, the main area features the 'OnDemand' logo and the text 'OnDemand provides an integrated, sing...'. To the right, there's a sidebar with a list of interactive app types: Desktops, GUIs (VMD), Servers (Jupyter Server, MATLAB, RStudio Server), and a message 'all of your HPC resources.' A blue oval highlights the 'RStudio Server' option.



The screenshot shows the 'My Interactive Sessions' page. It displays a green success message 'Session was successfully deleted.' Above the list of sessions. The list includes 'Interactive Apps', 'Desktops', 'GUIs', 'VMD', 'Servers', 'Jupyter Server', 'MATLAB', and 'RStudio Server'. One session is listed: 'RStudio Server (51666842)' with details: Host: >_n0001.cml, Created at: 2022-07-21 15:59:49 PDT, Time Remaining: 57 minutes, Session ID: 544aff13-06fa-40a5-8b33-895faf0f9937, and a 'Connect to RStudio Server' button. There's also a 'Delete' button.

Compute and interactive mode

Home / My Interactive Sessions / RStudio Server

Interactive Apps
Desktops
<i>Desktop</i>
GUls
<i>VMD</i>
Servers
<i>Jupyter Server</i>
<i>MATLAB</i>
RStudio Server

RStudio Server version: d96c37b

This app will launch a RStudio Server an IDE for R on the LBNL Science-IT Laboratory Research Computing(LRC) Infrastructure clusters.

Type of use

interactive_mode, for exploration

Choose the mode of running your Rstudio Server

Wall Clock Time

1

How many hours do you want to run this Rstudio Server for ?

Number of CPU cores per Node

1

Please specify the number of CPU cores you want per node for this Rstudio Server

Email address (optional)

Enter your email address if you would like to receive an email when the session starts. Leave blank for no email.

Launch

* The RStudio Server session data for this session can be accessed under the data root directory.

Home / My Interactive Sessions / RStudio Server

Interactive Apps
Desktops
<i>Desktop</i>
GUls
<i>VMD</i>
Servers
<i>Jupyter Server</i>
<i>MATLAB</i>
RStudio Server

RStudio Server version: d96c37b

This app will launch a RStudio Server an IDE for R on the LBNL Science-IT Laboratory Research Computing(LRC) Infrastructure clusters.

Type of use

compute_mode

Choose the mode of running your Rstudio Server

Wall Clock Time

1

How many hours do you want to run this Rstudio Server for ?

Name of the job

test

SLURM Partition

cf1

Choose the name of the SLURM Partition in which you want to launch this Rstudio Server

SLURM Project/Account Name

scs

For non Lawrencium partitions you can leave this blank.

SLURM QoS Name

cf_normal

Most users can leave it black for default assignment, Lawrencium Condo users want to specify their condo QoS name

Number of Nodes

1

Please specify the number of nodes you want for this Rstudio Server

Email address (optional)

Enter your email address if you would like to receive an email when the session starts. Leave blank for no email.

Launch

* The RStudio Server session data for this session can be accessed under the data root

Interactive Apps: MATLAB

The screenshot shows the Open OnDemand web interface. At the top, there's a navigation bar with links for Desktop, Open OnDemand, Files, Jobs, Clusters, Interactive Apps, and a search icon. The 'Interactive Apps' dropdown is open, showing options like Desktops, GUIs (with VMD), Servers (with Jupyter Server, MATLAB circled in blue, and RStudio Server), and MATLAB. Below the menu, the text "OnDemand provides an integrated, singl..." is visible, followed by "all of your HPC resources."

The screenshot shows a MATLAB session details page. The top navigation bar includes Home, My Interactive Sessions, and a search icon. The main area displays a session for MATLAB (ID 51666979). It shows the host as >_n0000.ood0, created at 2022-07-21 16:24:34 PDT, with 59 minutes remaining. The session ID is 58dfcbce-9c5e-432d-b02d-87043985df5c. There are compression and image quality sliders, and a "Launch MATLAB" button. A "View Only (Shareable Link)" button is also present.

Interactive Apps: Desktop

The screenshot shows the OnDemand interface. At the top, there is a navigation bar with links for Open OnDemand, Files, Jobs, Clusters, Interactive Apps, and My Interactive Sessions. The 'Interactive Apps' menu is open, displaying options: Desktops (selected), GUIs (VMD), Servers (Jupyter Server, MATLAB, RStudio Server). A blue oval highlights the 'Desktops' link.

Home / My Interactive Sessions / Desktop

Interactive Apps

Desktops

Desktop

GUIs

VMD

Servers

Jupyter Server

MATLAB

RStudio Server

Desktop version: 31a024e

This app will launch an interactive desktop on the [LBNL Science-IT](#) Laboratory Research Computing([LRC](#)) Infrastructure clusters. You will be able to launch GUI applications directly on the desktop.

Name of the Job

OOD_desktop_test

SLURM Partition

cf1

The SLURM Partition in which you want to launch this Desktop session.

SLURM Account/Project Name

scs

The SLURM account (i.e., the value of the -A or --account flag used when submitting a SLURM job).

SLURM QoS Name

cf_debug

The QoS you want run under.

Number of Compute Nodes

1

The number of nodes you want for your Desktop session.

Wall Clock Time

1

The maximum number of hours your Jupyter session will run for. To save PCA credits or free up resources for your condo group members, you should delete your session when you are done.

Email Address (Optional)

Enter your email address if you would like to receive an email when the session starts. Leave blank for no email.

Launch

* The Desktop session data for this session can be accessed under the [data root](#) directory.

Session was successfully deleted.

Home / My Interactive Sessions

Interactive Apps

Desktops

Desktop

GUIs

VMD

Servers

Jupyter Server

MATLAB

RStudio Server

Desktop (51668171)

Host: [2001:4d8:1001:1::1](#)

Created at: 2022-07-21 18:17:33 PDT

Time Remaining: 59 minutes

Session ID: 645aabba-caa9-4f1b-a5c0-973421f951fb

Compression

0 (low) to 9 (high)

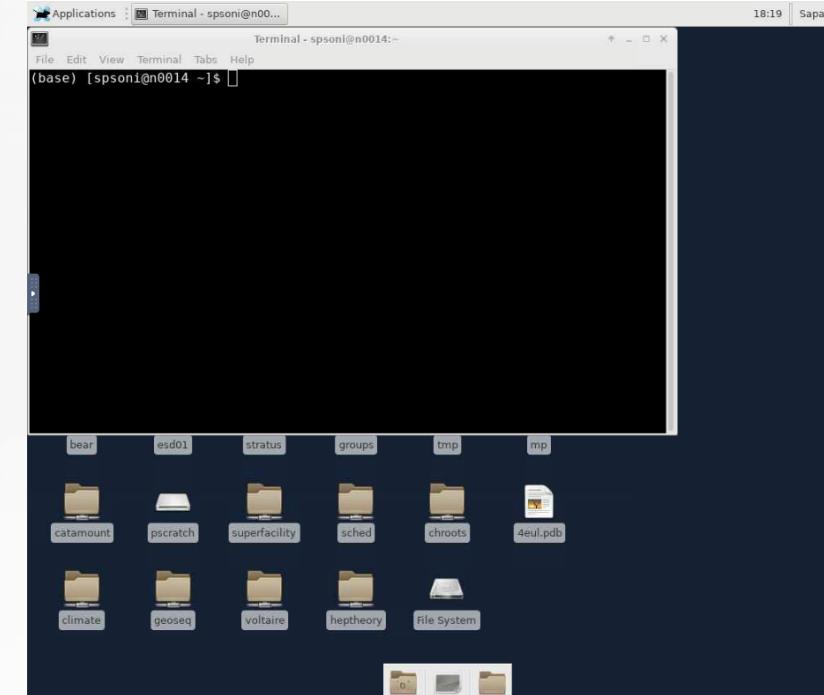
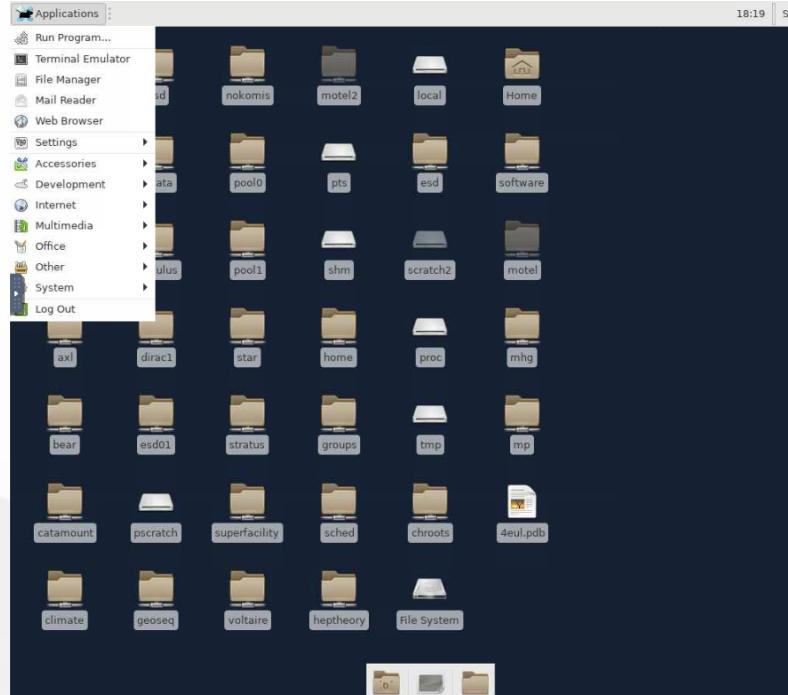
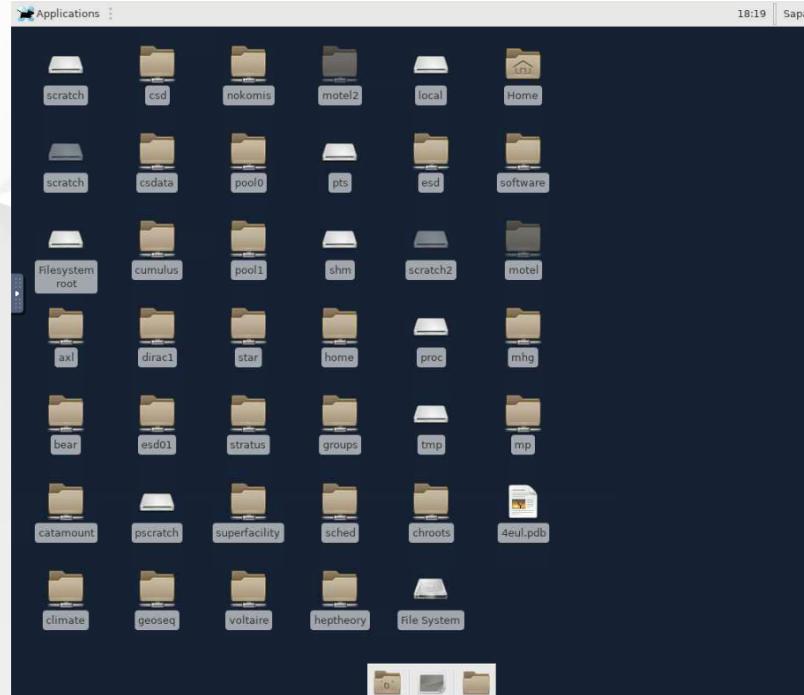
Image Quality

0 (low) to 9 (high)

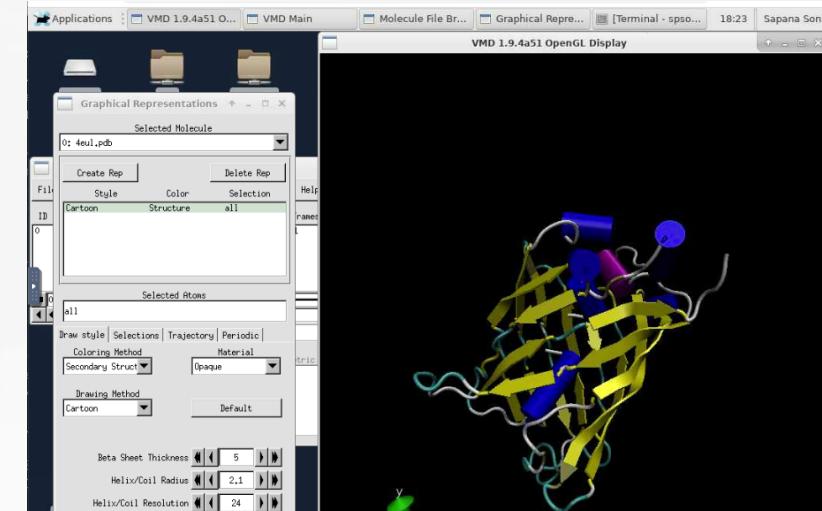
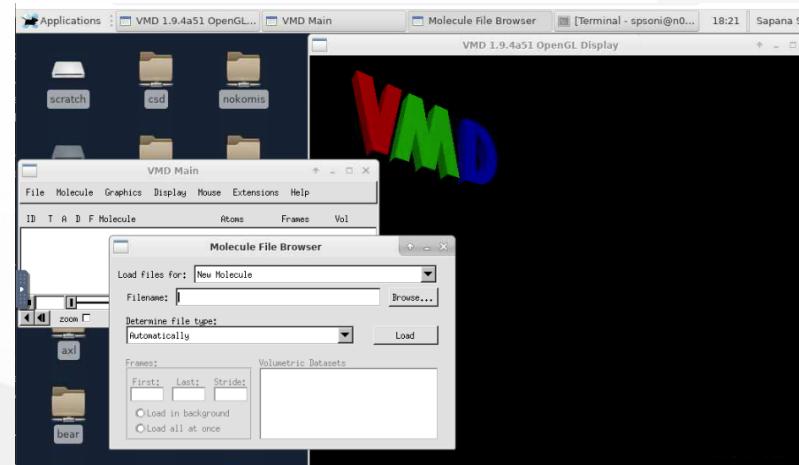
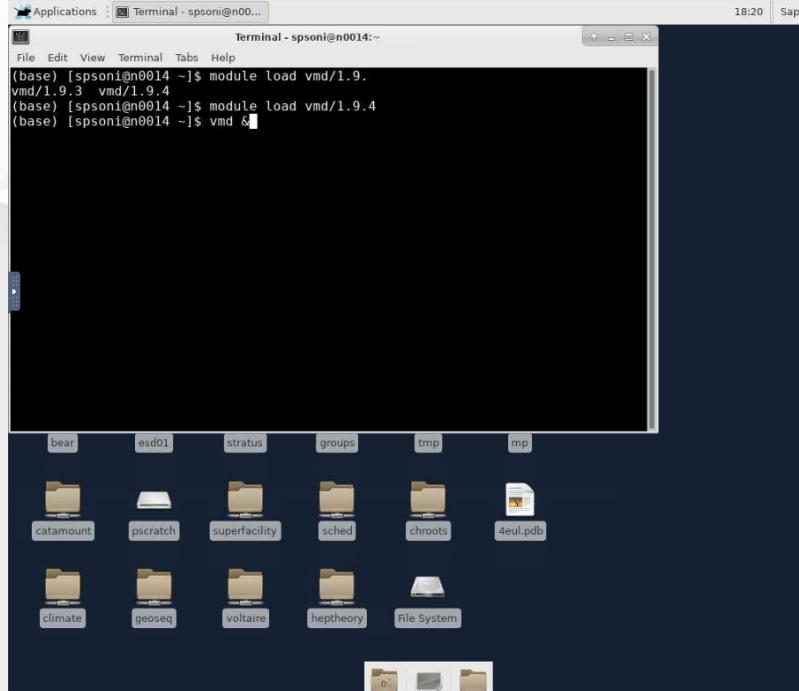
Launch Desktop

View Only (Share-able Link)

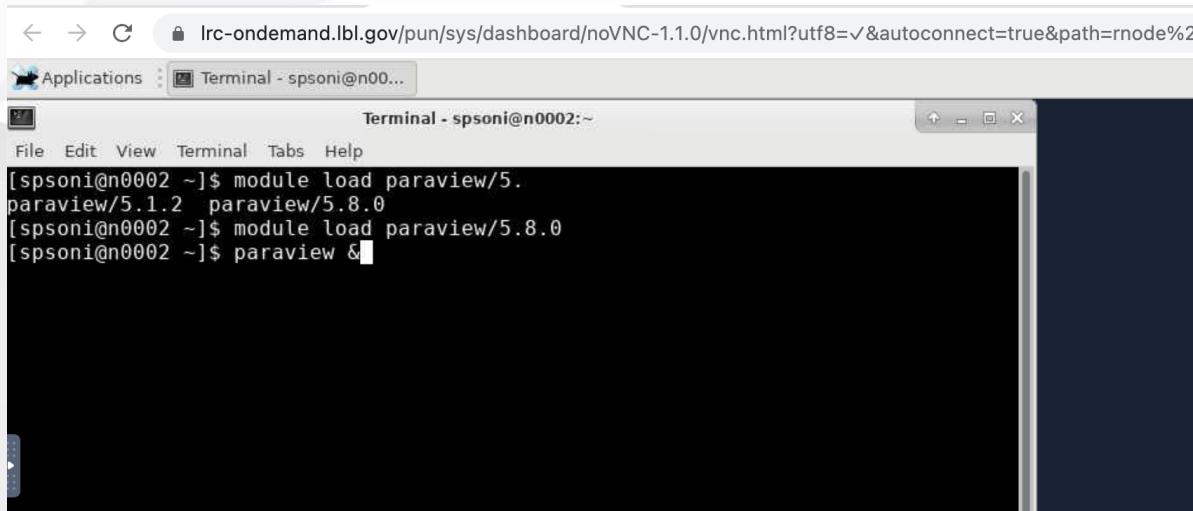
Desktop



Using Desktop to launch VMD

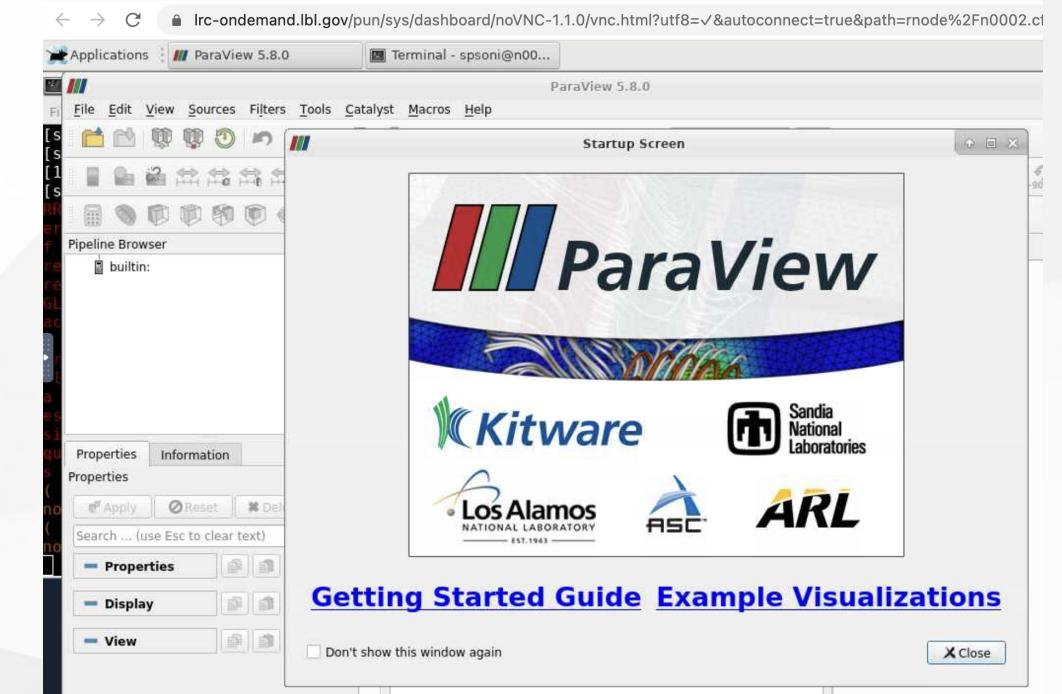


Using Desktop to launch ParaView



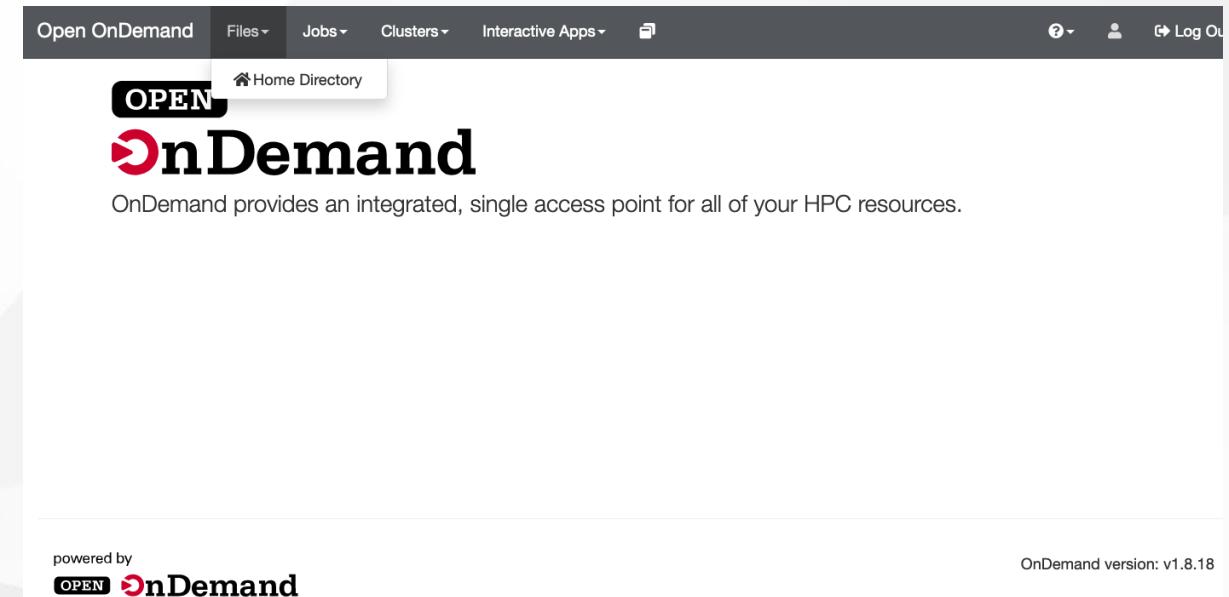
A screenshot of a terminal window titled "Terminal - spsoni@n002:~". The window shows the following command history:

```
[spsoni@n002 ~]$ module load paraview/5.  
paraview/5.1.2 paraview/5.8.0  
[spsoni@n002 ~]$ module load paraview/5.8.0  
[spsoni@n002 ~]$ paraview &
```



Files: file management

- **Conventional approach: command line**
 - Linux file editors for editing files: vi, vim, nano, emacs
 - File transfer: scp, rsync
- **Globus for file transfer**
- **Open OnDemand: Files feature**
 - view and edit text files
 - create or rename or delete files
 - create or rename or delete directories
 - file/directory upload and download



Files : Home directory

The screenshot shows a file manager interface with the following details:

- Toolbar:** Go To..., Open in Terminal, New File, New Dir, Upload, Show Dotfiles, Show Owner/Mode.
- Path:** /global/home/users/spsoni/
- Buttons:** View, Edit, A-Z Rename/Move, Download, Copy, Paste, (Un)Select All, Delete.
- Table Headers:** name, size, modified date.
- Table Data:** The table lists numerous directories, all of which are empty (size 0). The modified dates range from 05/17/2022 to 07/24/2022. The list includes: .., Desktop, OCEAN, R, bin, gcc-11.3.0, gdal-3.5.0, geos, geos-3.10.3, go, include, intel, julia-1.7.3, lib, lib64, libexec, libssh, libssh2, libssh2-0.9, myproject, and ondemand.

Clusters: LRC shell access

The screenshot shows the OnDemand web interface. At the top, there is a navigation bar with links for Open OnDemand, Files, Jobs, Clusters (which is the active tab), Interactive Apps, and a search icon. Below the navigation bar, there is a banner with the text "OPEN OnDemand". The main content area displays the message "OnDemand provides an integrated, single access point for all of your HPC resources." At the bottom left, it says "powered by OPEN OnDemand", and at the bottom right, it indicates "OnDemand version: v1.8.18".

The screenshot shows a terminal window with a black background and white text. It displays a security notice from Lawrence Berkeley National Laboratory regarding computer system usage under contract with the U.S. Department of Energy. It states that the system may be monitored for security purposes and that unauthorized access is prohibited, subject to criminal and civil penalties under Federal Laws. It also mentions Public Laws 83-703 and 99-474. The notice concludes with a list of emergency contact information: LBNL Computer Protection Emergency phone number (486-7770), LBNL Security Webpage (<http://www.lbl.gov/security/>), and LBNL Backup Services (<https://commons.lbl.gov/display/itdivision/Backups>). Below this, there is a section about weekly office hours on Wednesdays starting July 24, 2019, and a request for virtual consultations at <https://sites.google.com/a/lbl.gov/hpc/getting-help>. The terminal window ends with a prompt "[spsoni@n000 ~]\$".

Job submission and management

The screenshot shows the OnDemand web interface. At the top, there is a navigation bar with links for Open OnDemand, Files, Jobs, Clusters, Interactive Apps, and a user icon. Below the navigation bar is the main content area. On the left, there is a sidebar with a "OPEN OnDemand" logo and a "OnDemand" heading. A message states: "OnDemand provides an integrated, single access point for all of your HPC resources." In the center, there is a "Active Jobs" section with a table showing one entry:

ID	Name	User	Account	Time Used	Queue	Status	Cluster	Actions
51694850	OOD_desktop_test	sponi	scs	00:00:09	cf1	Running	LRC	

At the bottom of the page, it says "powered by OPEN OnDemand" and "OnDemand version: v1.8.18".

The screenshot shows the "Active Jobs" list page. The title is "Open OnDemand / Active Jobs". There are buttons for "Your Jobs" and "All Clusters". The page has a search bar with "Filter:" and a dropdown for "Show 50 entries". The main content is a table titled "Active Jobs" with the following data:

ID	Name	User	Account	Time Used	Queue	Status	Cluster	Actions
51694850	OOD_desktop_test	sponi	scs	00:00:09	cf1	Running	LRC	

Below the table, it says "Showing 1 to 1 of 1 entries". There are navigation buttons for "Previous" (with page number 1), "Next", and "1".

Job composer and template

Open OnDemand / Job Composer Jobs Templates ⚡ Help

Jobs

+ New Job ▾

Edit Files Job Options Open Terminal Submit Stop Delete

Show 25 entries Search:

Created	Name	ID	Cluster	Status
July 24, 2022 5:24pm	GPU Slurm Job	51694976	LRC	Not Submitted
July 24, 2022 5:16pm	MPI Slurm Job	51694976	LRC	Completed
July 24, 2022 5:12pm	GPU Slurm Job	51694958	LRC	Completed

Showing 1 to 3 of 3 entries Previous 1 Next

★ Create Template

Job Details

Job Name: GPU Slurm Job

Submit to: LRC

Account: Not specified

Script location: /global/home/users/spsoni/ondemand/data/sys/myjobs/projects/d

Open OnDemand / Job Composer Jobs Templates ⚡ Help

Templates

To create a new job, select a template to copy, fill out the form to the right, and click "Create New Job".

+ New Template Copy Template

View Files Open Terminal Delete

Show 10 entries Search:

Name	Cluster	Source
GPU Slurm Job	Lrc	System Templates
MPI Slurm Job	Lrc	System Templates
Simple Sequential Slurm Job	Lrc	System Templates

Showing 1 to 3 of 3 entries Previous 1 Next

Create New "GPU Slurm Job"

A basic template for GPU job on a Slurm system

Job Name: GPU Slurm Job

Cluster: LRC

Script Name: gpu_job.sh

Create New Job Reset

Submission script

★ Create Template

ch:

Delete

Status: Not Submitted

Completed

Completed

Previous 1 Next

Job Details

Job Name: **GPU Slurm Job**

Submit to: LRC

Account: Not specified

Script location: /global/home/users/spsoni/ondemand/data/sys/myjobs/projects/default/4

Script name: gpu_job.sh

Folder Contents:

Folder Contents:

gpu_job.sh

Submit Script

gpu_job.sh

Script contents:

```
#!/bin/bash

#SBATCH --job-name=test
#SBATCH --nodes=1
#SBATCH --time=00:30:00
#SBATCH --qos=es_normal
#SBATCH --account=scs
#SBATCH --partition=es1
#SBATCH --gres=gpu:1
#SBATCH --ntasks=2
#SBATCH --output=%j.output
#SBATCH --error=%j.err
#SBATCH --job-name=test

cd $SLURM_SUBMIT_DIR
echo "How to submit GPU jobs" > output_file
nvidia-smi -L >> output_file
```

Open Editor

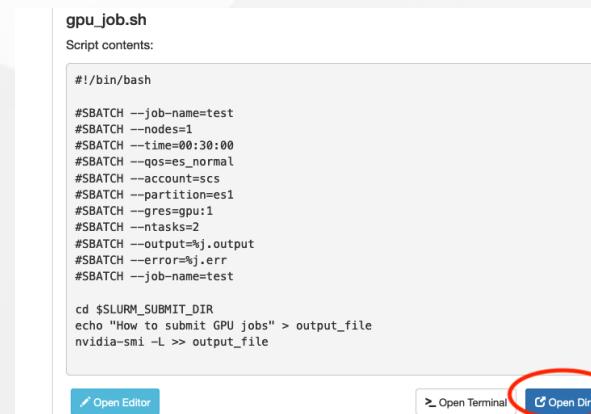
Open Terminal

Open Dir

Jobs: submission directory

Job composer creates a working directory by default on the path
/global/home/users/spsoni/ondemand/data/sys/myjobs/projects/default

- **Use default path:** Copy/upload all the files required for the jobs on this path before hitting Submit button.
 - click 'Open Dir' button at the bottom of the job script content.
 - using a file explorer upload or transfer files



OR

- **Set different working directory:** If you want to use files saved on different location and would like to run job in that directory, for example: scratch.
 - add following command line in your job script

```
cd /global/scratch/users/spsoni/my_working_dir
```

Note: Use path you aim to set for your working directory.

Log out and clean up

- Log out of the portal
- Clean up
 - The portal stores temporary files for interactive apps on the path
\$HOME//ondemand/data/sys/dashboard/batch_connect/sys
 - It is a good practice to clean up this directory periodically.

```
rm -rf $HOME/ondemand/data/sys/dashboard/batch_connect/sys/*
```

Getting help

- Virtual office hours:
 - Time: 10.30 am to noon every Wednesday
 - Online [request](#)
- Send us tickets at hpcshelp@lbl.gov
- More information about LBNL Supercluster and scientific computing services can be found [here](#).

Your feedback is important to us for improving HPC services and training.

Please fill out [training survey](#)

