

HCC Kickstart

Introduction to Open OnDemand (OOD)

University of Nebraska

Holland Computing Center

Oct. 19-23, 2020

OOD: Teaching Objectives

- Introduction to Open OnDemand
- Command-line shell access
- File management
- Interactive server and GUI applications
- Job management and monitoring

Introduction to Open OnDemand

- Portal GUI platform which provides single web-based point of entry for HPC access
- Open OnDemand was developed at the Ohio Supercomputer Center and is funded by the National Science Foundation
- Goal
 - TO provide web access to the HCC HPC resources
- More information: <https://openondemand.org/>


Introduction to Open OnDemand


- Why OOD is useful?
 - HPC access
 - File access (view, edit, etc.)
 - Job control (submit, monitor, delete)
 - Terminal access
 - Interactive application access (Desktop & Jupyter Notebook)
 - Zero install (browser based)
 - Easy to use (GUI interface)

Connecting to HCC OOD

- To access HCC's instance of Open OnDemand, use one of the following links
 - For Crane:
 - <https://crane-ood.unl.edu/>
 - For Rhino:
 - <https://rhino-ood.unl.edu>

Connecting to HCC OOD


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 Holland Computing Center - Login

HCC Username:


Password:


LOGIN


 [Forgot your password?](#)

For security reasons, please [log out](#) and exit your web browser when you are done accessing services that require authentication!

Connecting to HCC OOD

 UNIVERSITY OF NEBRASKA






[What is this?](#) 

[Need help?](#)


Powered by Duo Security

Device:

Choose an authentication method

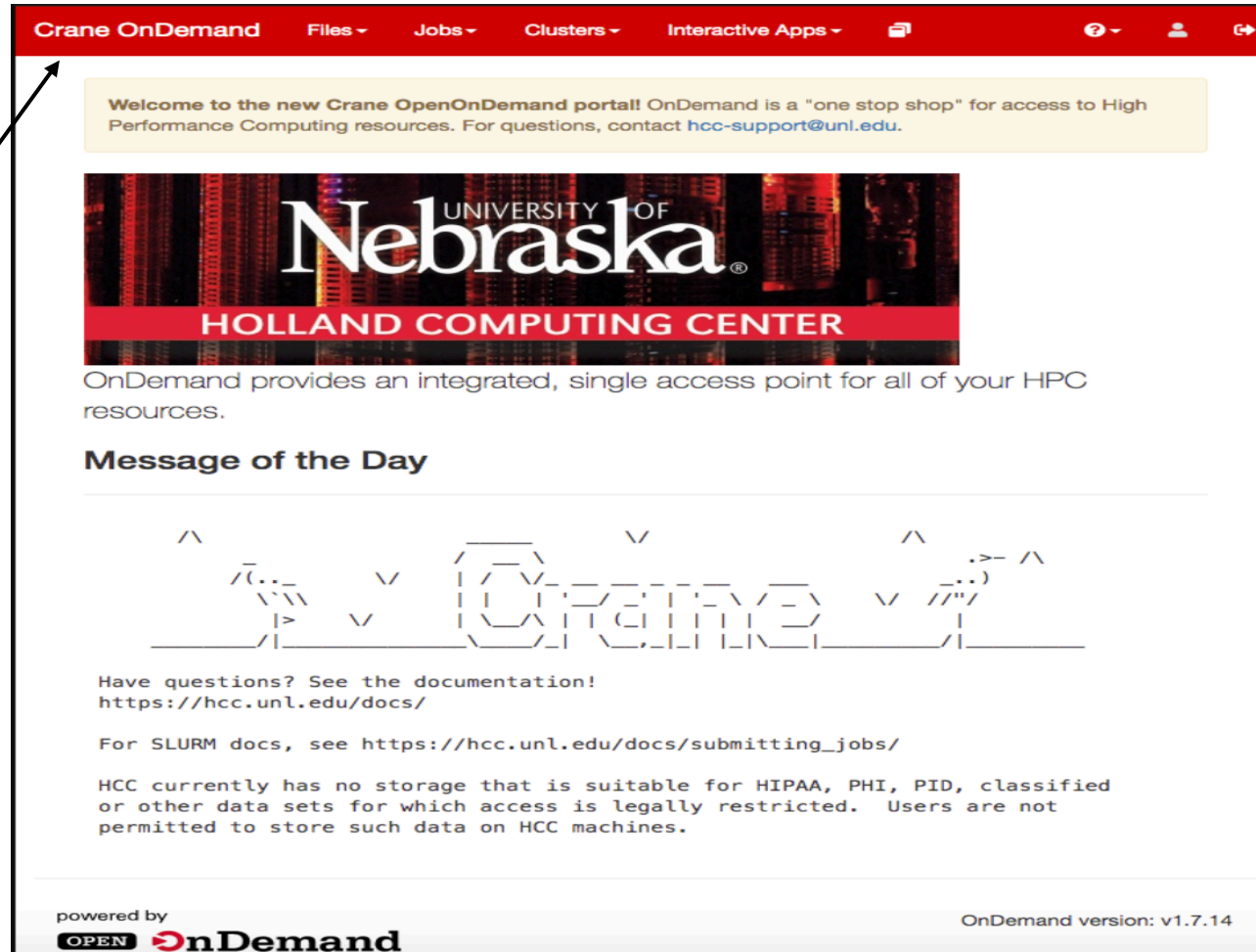
 Duo Push <small>RECOMMENDED</small>	Send Me a Push
 Call Me	Call Me
 Passcode	Enter a Passcode

Select Duo login method

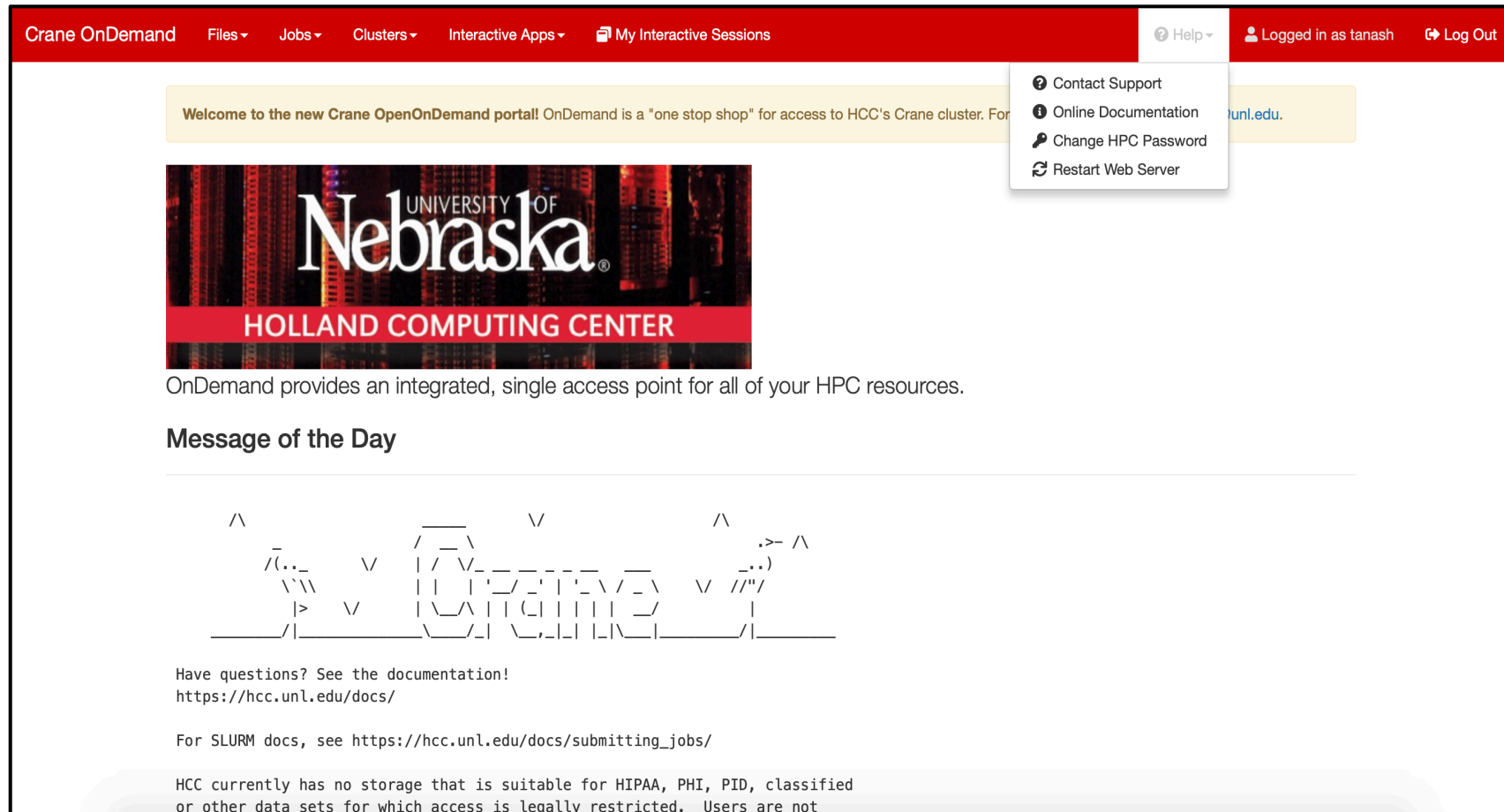


Connecting to HCC OOD

To return to the Dashboard at any point, click on “Crane OnDemand” in the upper left-hand corner of the window



Support, HCC documentation, change password, and restart web server for OOD



The screenshot shows the Crane OnDemand portal interface. At the top is a red navigation bar with links: Crane OnDemand, Files, Jobs, Clusters, Interactive Apps, and My Interactive Sessions. On the right of the bar are links for Help, Logged in as tanash, and Log Out. Below the navigation bar is a yellow banner with the text: "Welcome to the new Crane OpenOnDemand portal! OnDemand is a 'one stop shop' for access to HCC's Crane cluster. For more information, visit [hcc.unl.edu](\"http://hcc.unl.edu\")." Below the banner is a large image of the University of Nebraska logo with the text "HOLLAND COMPUTING CENTER" overlaid. Under the image, it says "OnDemand provides an integrated, single access point for all of your HPC resources." Below this is a section titled "Message of the Day" which contains an ASCII art graphic of a computer monitor. Below the graphic, it says "Have questions? See the documentation! [https://hcc.unl.edu/docs/](\"https://hcc.unl.edu/docs/\")". Below that, it says "For SLURM docs, see [https://hcc.unl.edu/docs/submitting_jobs/](\"https://hcc.unl.edu/docs/submitting_jobs/\")". At the bottom, a grey box contains the text: "HCC currently has no storage that is suitable for HIPAA, PHI, PID, classified or other data sets for which access is legally restricted. Users are not". A help menu is open over the "Help" link, showing options: Contact Support, Online Documentation, Change HPC Password, and Restart Web Server.

Crane OnDemand Files Jobs Clusters Interactive Apps My Interactive Sessions Help Logged in as tanash Log Out

Welcome to the new Crane OpenOnDemand portal! OnDemand is a "one stop shop" for access to HCC's Crane cluster. For more information, visit hcc.unl.edu.

UNIVERSITY OF Nebraska
HOLLAND COMPUTING CENTER

OnDemand provides an integrated, single access point for all of your HPC resources.

Message of the Day

ASCII art graphic of a computer monitor.

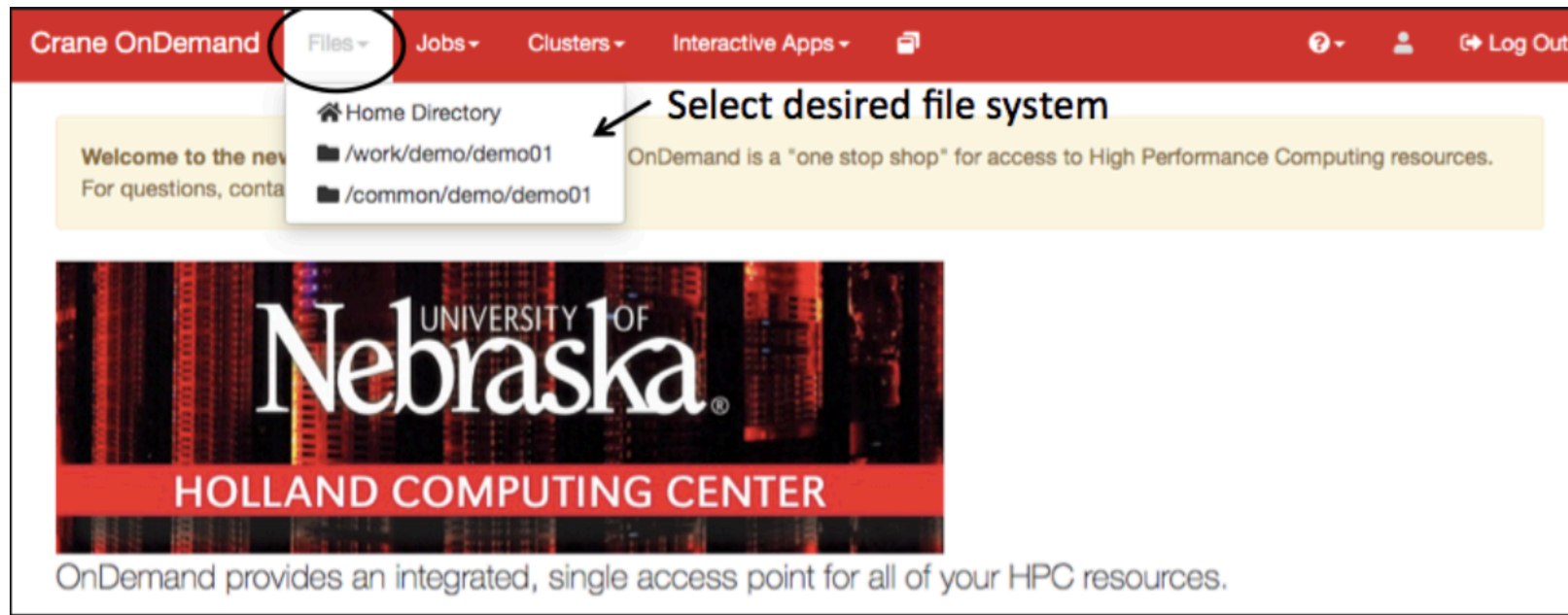
Have questions? See the documentation!
<https://hcc.unl.edu/docs/>

For SLURM docs, see https://hcc.unl.edu/docs/submitting_jobs/

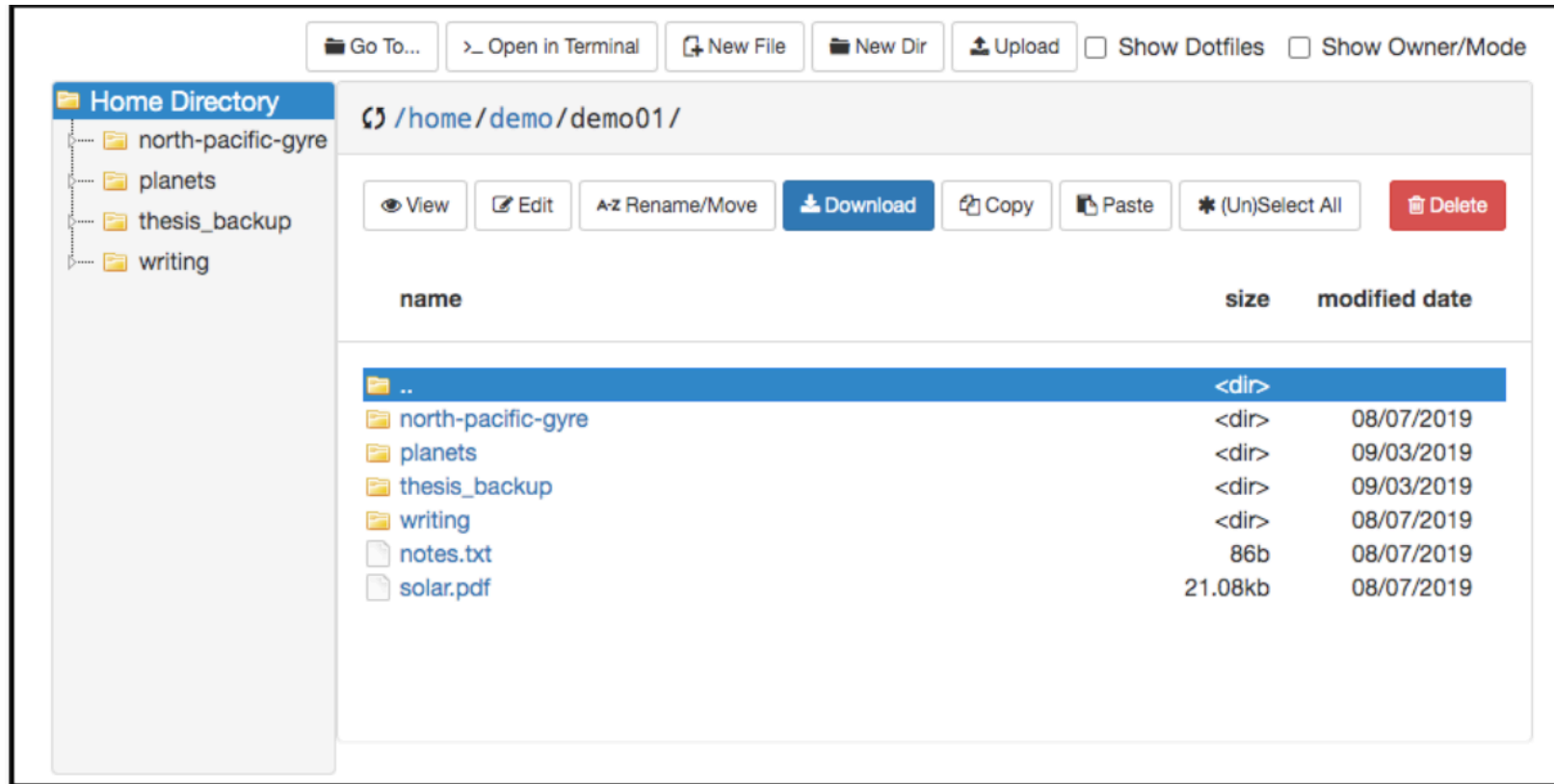
HCC currently has no storage that is suitable for HIPAA, PHI, PID, classified or other data sets for which access is legally restricted. Users are not

Help menu options:
Contact Support
Online Documentation
Change HPC Password
Restart Web Server

Managing and transferring files with HCC OOD



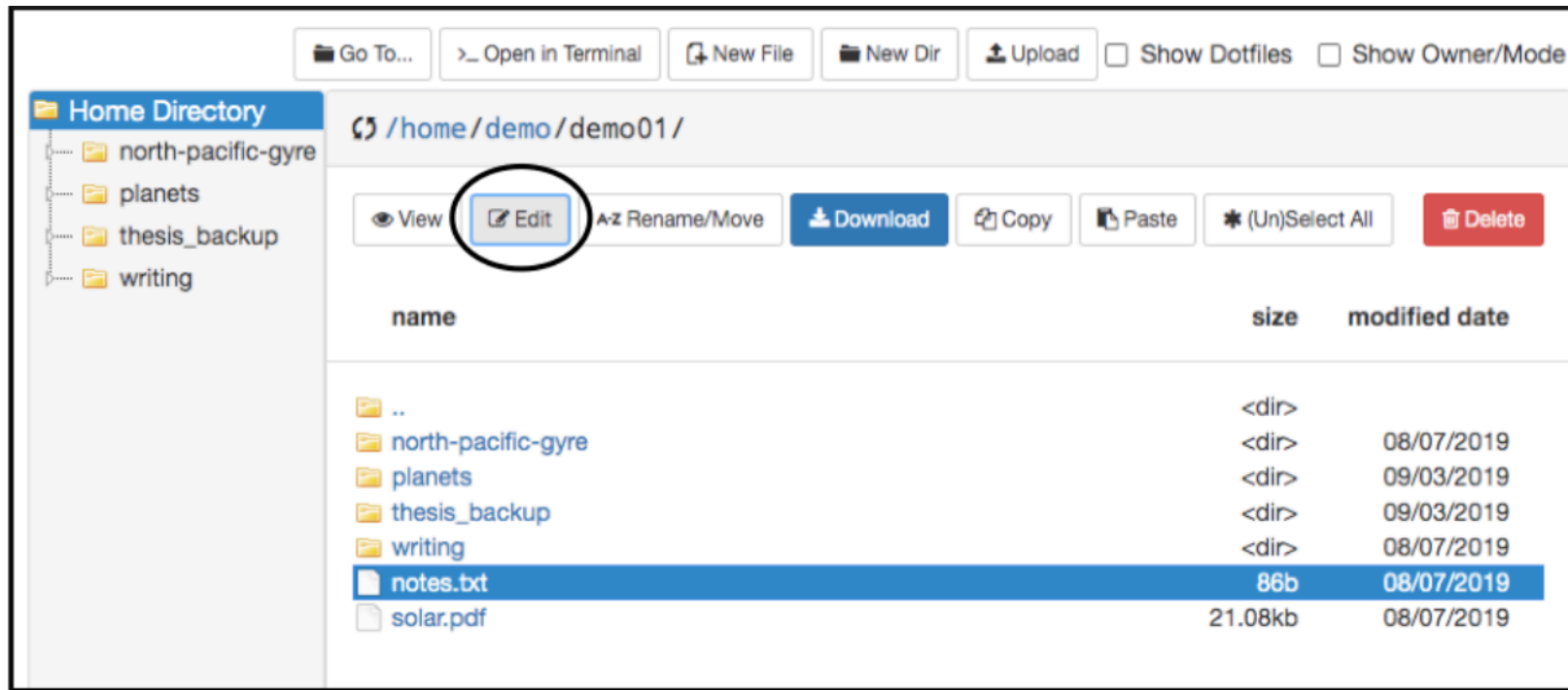
Managing and transferring files with HCC OOD



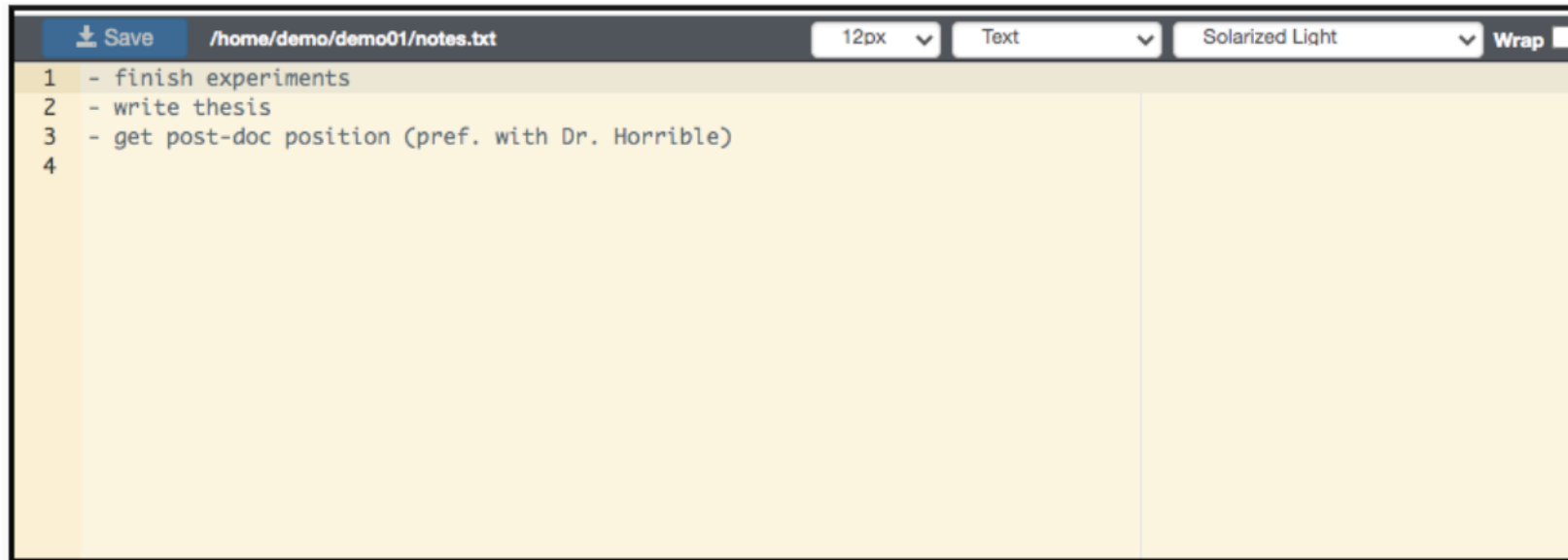
The screenshot displays the HCC OOD web interface. At the top, there is a navigation bar with buttons: "Go To...", "Open in Terminal", "New File", "New Dir", "Upload", and checkboxes for "Show Dotfiles" and "Show Owner/Mode". Below this, the left sidebar shows the "Home Directory" with a tree view containing folders: "north-pacific-gyre", "planets", "thesis_backup", and "writing". The main panel shows the current directory path as "/home/demo/demo01/". Below the path is a toolbar with buttons: "View", "Edit", "A-z Rename/Move", "Download", "Copy", "Paste", "(Un)Select All", and "Delete". The main content area is a table listing files and directories.

name	size	modified date
..	<dir>	
north-pacific-gyre	<dir>	08/07/2019
planets	<dir>	09/03/2019
thesis_backup	<dir>	09/03/2019
writing	<dir>	08/07/2019
notes.txt	86b	08/07/2019
solar.pdf	21.08kb	08/07/2019

Managing and transferring files with HCC OOD



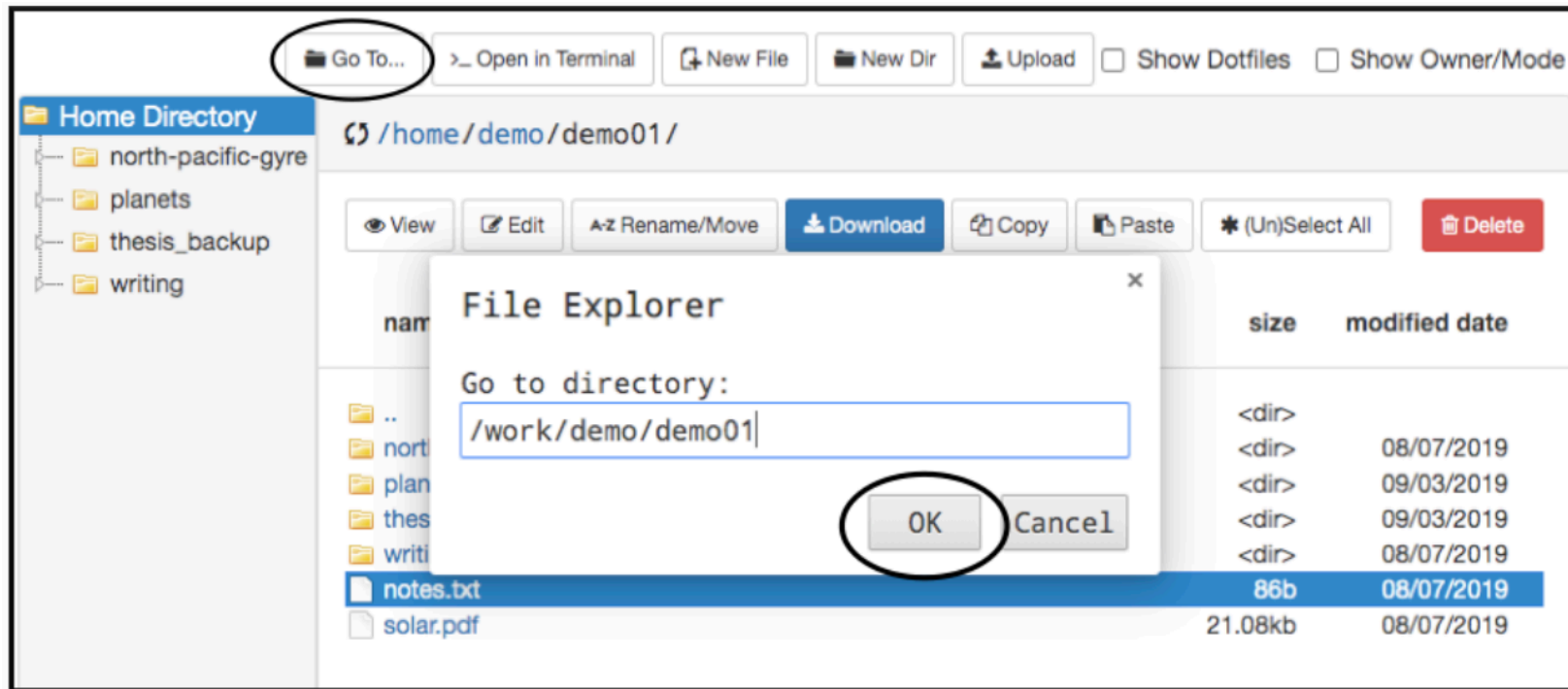
Managing and transferring files with HCC OOD



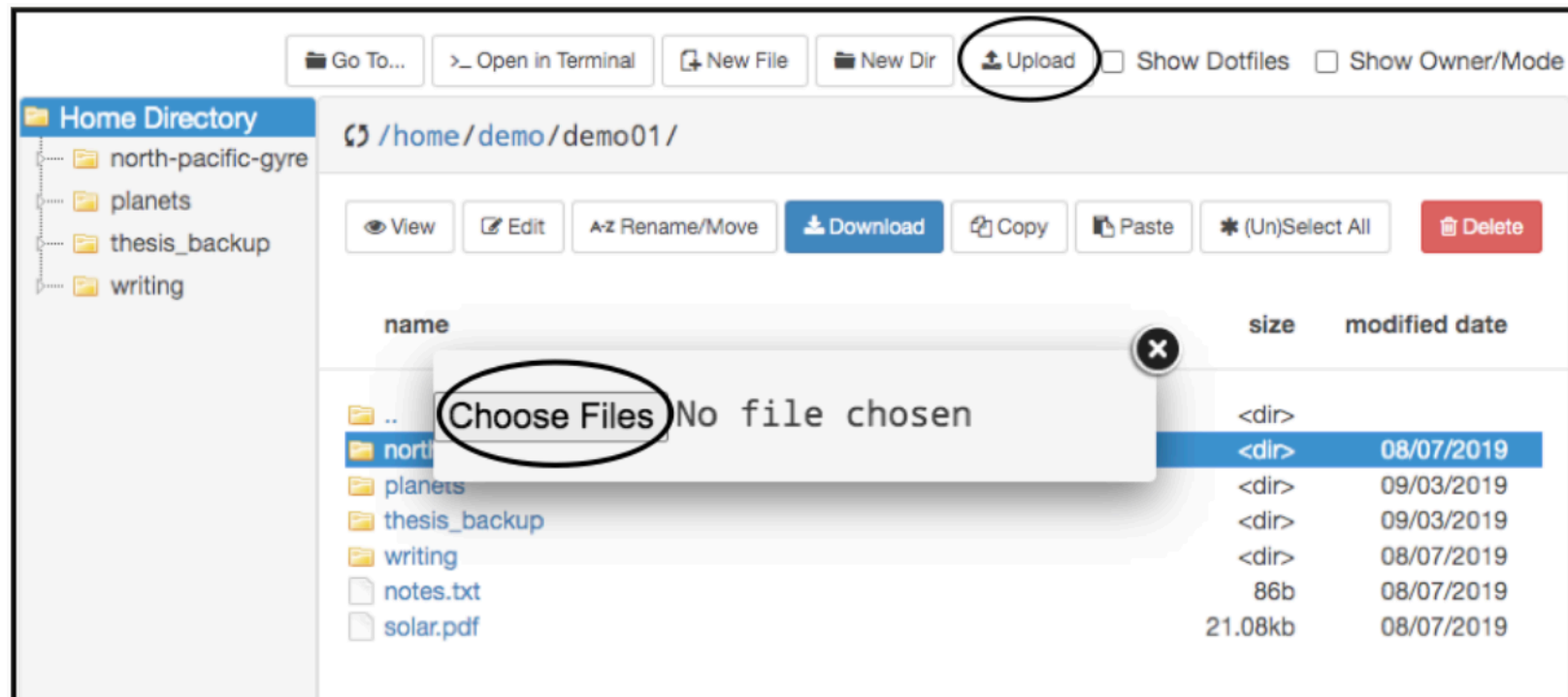
A screenshot of a text editor window. The title bar shows a 'Save' button with a download icon, the file path '/home/demo/demo01/notes.txt', and settings for '12px' font size, 'Text' file type, 'Solarized Light' theme, and a 'Wrap' checkbox. The editor area has a light yellow background and contains a list of tasks numbered 1 to 4:

```
1 - finish experiments
2 - write thesis
3 - get post-doc position (pref. with Dr. Horrible)
4
```

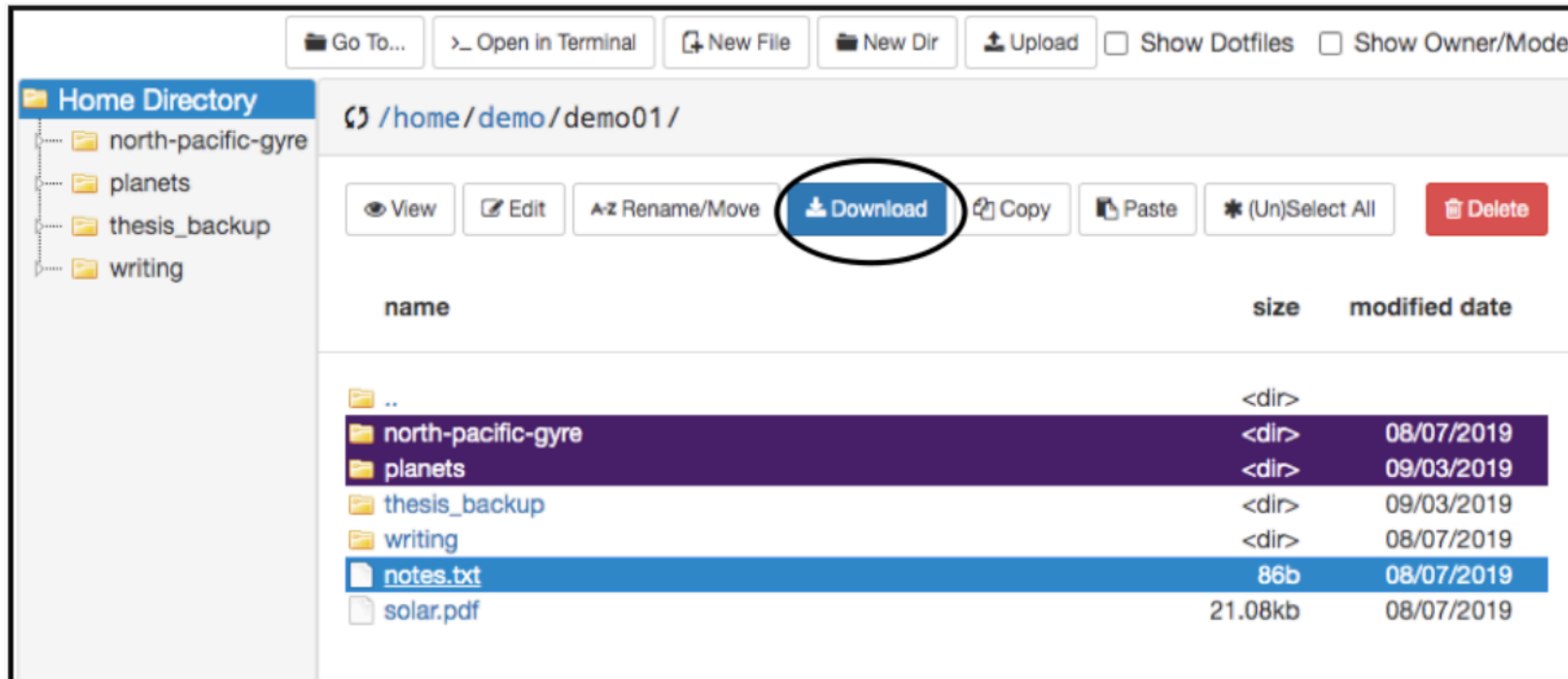
Managing and transferring files with HCC OOD



Managing and transferring files with HCC OOD



Managing and transferring files with HCC OOD



Job management and submission with HCC OOD



Job management and submission with HCC OOD

Crane OnDemand / Active Jobs

Your Jobs ▾All Clusters ▾

Active Jobs

Show 50 ▾ entriesFilter:

ID	Name	User	Account	Time Used	Queue	Status	Cluster	Actions
> 28042147	mathematica	demo01	demo	00:00:09	batch	Completed	Crane	
> 28042146	blastn	demo01	demo	00:00:30	batch	Running	Crane	

Showing 1 to 2 of 2 entries

Previous1Next

Job management and submission with HCC OOD



Job management and submission with HCC OOD

The screenshot displays the Crane OnDemand Job Composer interface. The top navigation bar includes 'Crane OnDemand / Job Composer', 'Jobs', 'Templates', and a 'Help' button. The main section is titled 'Jobs' and features a '+ New Job' button. A modal window titled 'Steps to create a job:' is open, providing instructions: 1. Create a new job by copying from an existing job template directory or a previously run job directory. 2. Edit the files in the job via the file explorer. 3. Submit the job and monitor the progress from the 'Job Composer'. Below the modal, a table lists jobs with columns for ID, Clusters, and Status. Two jobs are shown: 'MATHEMATICA job' (ID: 28042147, Status: Completed) and 'BLAST job' (ID: 28042146, Status: Running). A 'Job Details' panel on the right shows information for job 28042147, including the job name 'MATHEMATICA job', submitter 'Crane', account 'Not specified', and script location '/work/demo/demo01/.ondemand/projects/default/2'.

Crane OnDemand / Job Composer Jobs Templates Help

Jobs

+ New Job

Steps to create a job:

1. Create a new job by copying from an existing job template directory or a previously run job directory.
2. Edit the files in the job via the file explorer.
3. Submit the job and monitor the progress from the "Job Composer"

Search:

ID	Cluster	Status
28042147	Crane	Completed
28042146	Crane	Running

Showing 1 to 2 of 2 entries

Previous 1 Next

Job Details

28042147

Job Name:

MATHEMATICA job

Submit to:

Crane

Account:

Not specified

Script location:

/work/demo/demo01/.ondemand/projects/default/2

Job management and submission with HCC OOD

Crane 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 entries Search:

Name	Cluster	Source
ABAQUS job	Crane	System Templates
BLAST job	Crane	System Templates
COMSOL job	Crane	System Templates
FLUENT job	Crane	System Templates
GAMESS job	Crane	System Templates
GAUSSIAN job	Crane	System Templates
GROMACS GPU job	Crane	System Templates
GROMACS MPI job	Crane	System Templates
MATHEMATICA job	Crane	System Templates

Create New "BLAST job"

This is an example of basic nucleotide BLAST job with two cores using the BLAST databases from the biodata module.

Job Name:

Cluster:

Script Name:

[Create New Job](#) [Reset](#)

Selected Template Details

Template location:

Job management and submission with HCC OOD

Crane 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 entries Search:

Name	Cluster	Source
ABAQUS job	Crane	System Templates
BLAST job	Crane	System Templates
COMSOL job	Crane	System Templates
FLUENT job	Crane	System Templates
GAMESS job	Crane	System Templates
GAUSSIAN job	Crane	System Templates
GROMACS GPU job	Crane	System Templates
GROMACS MPI job	Crane	System Templates
MATHEMATICA job	Crane	System Templates

Create New "BLAST job"

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Job Name:

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[Create New Job](#) [Reset](#)

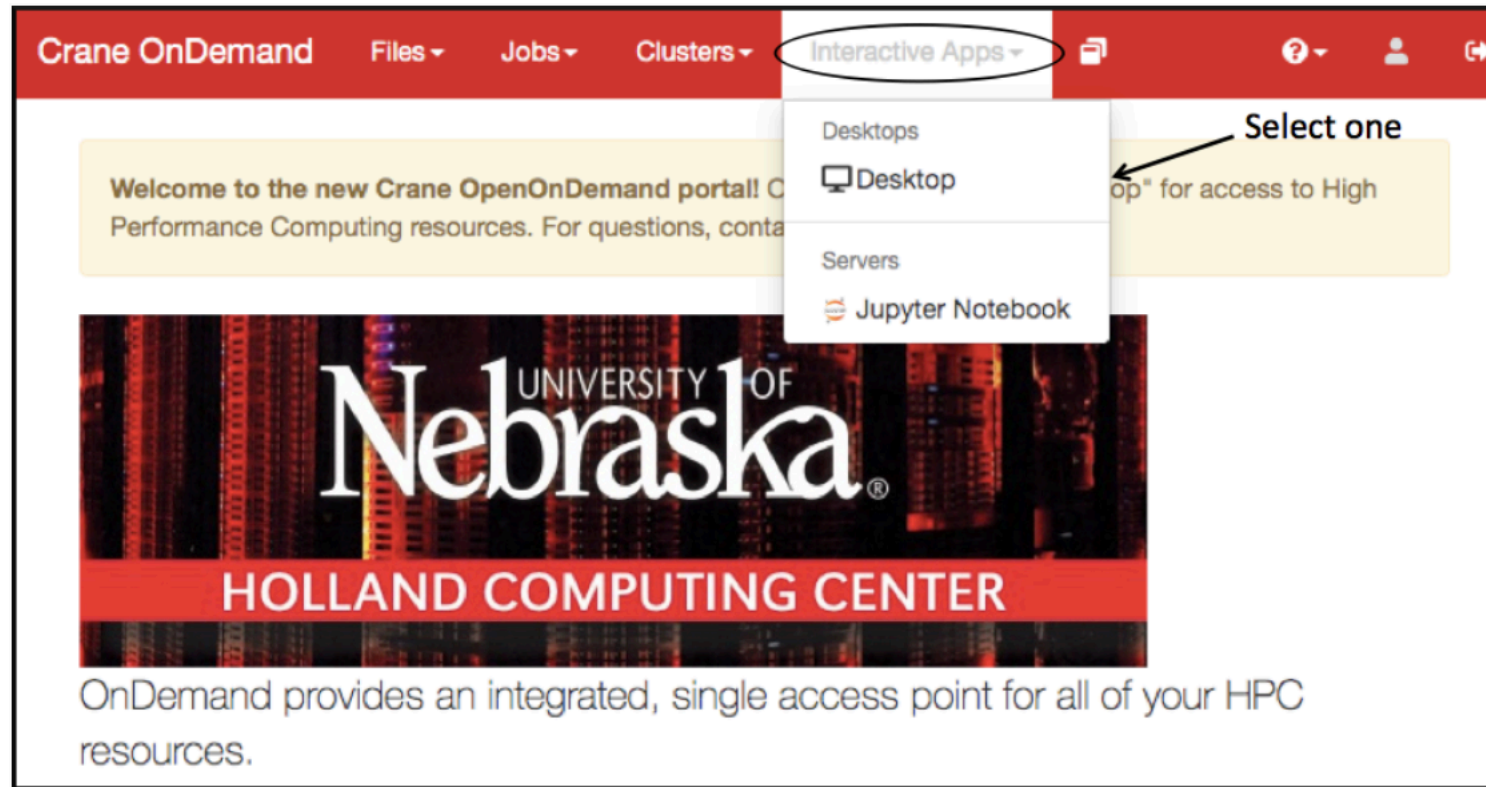
Selected Template Details

Template location:

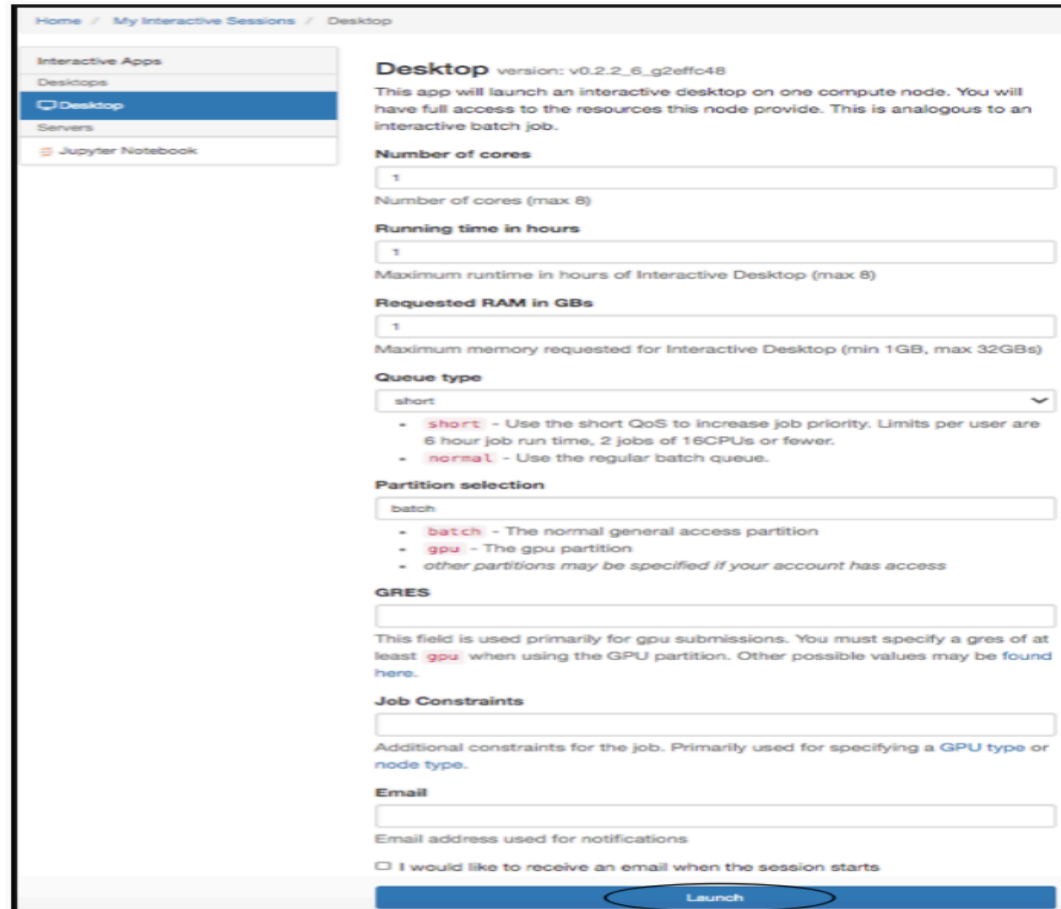
SHELL access with HCC OOD

[illegible]

Virtual desktop and Jupyter Notebook with HCC OOD



Virtual desktop and Jupyter Notebook with HCC OOD



The screenshot shows the 'Desktop' configuration page in the HCC OOD interface. The left sidebar contains 'Interactive Apps' with 'Desktop' selected. The main content area is titled 'Desktop version: v0.2.2_6_g2effc48' and includes a description: 'This app will launch an interactive desktop on one compute node. You will have full access to the resources this node provide. This is analogous to an interactive batch job.' The configuration fields are: 'Number of cores' (input: 1, max: 8), 'Running time in hours' (input: 1, max: 8), 'Requested RAM in GBs' (input: 1, min: 1GB, max: 32GBs), 'Queue type' (dropdown: short), 'Partition selection' (input: batch), 'GRES' (input field), 'Job Constraints' (input field), and 'Email' (input field). A 'Launch' button is at the bottom right.

Home / My Interactive Sessions / Desktop

Interactive Apps

- Desktops
- Desktop**
- Servers
- Jupyter Notebook

Desktop version: v0.2.2_6_g2effc48

This app will launch an interactive desktop on one compute node. You will have full access to the resources this node provide. This is analogous to an interactive batch job.

Number of cores

1

Number of cores (max 8)

Running time in hours

1

Maximum runtime in hours of Interactive Desktop (max 8)

Requested RAM in GBs

1

Maximum memory requested for Interactive Desktop (min 1GB, max 32GBs)

Queue type

short

- **short** - Use the short QoS to increase job priority. Limits per user are 6 hour job run time, 2 jobs of 16CPUs or fewer.
- **normal** - Use the regular batch queue.

Partition selection

batch

- **batch** - The normal general access partition
- **gpu** - The gpu partition
- *other partitions may be specified if your account has access*

GRES

This field is used primarily for gpu submissions. You must specify a gres of at least **gpu** when using the GPU partition. Other possible values may be found [here](#).

Job Constraints

Additional constraints for the job. Primarily used for specifying a GPU type or node type.

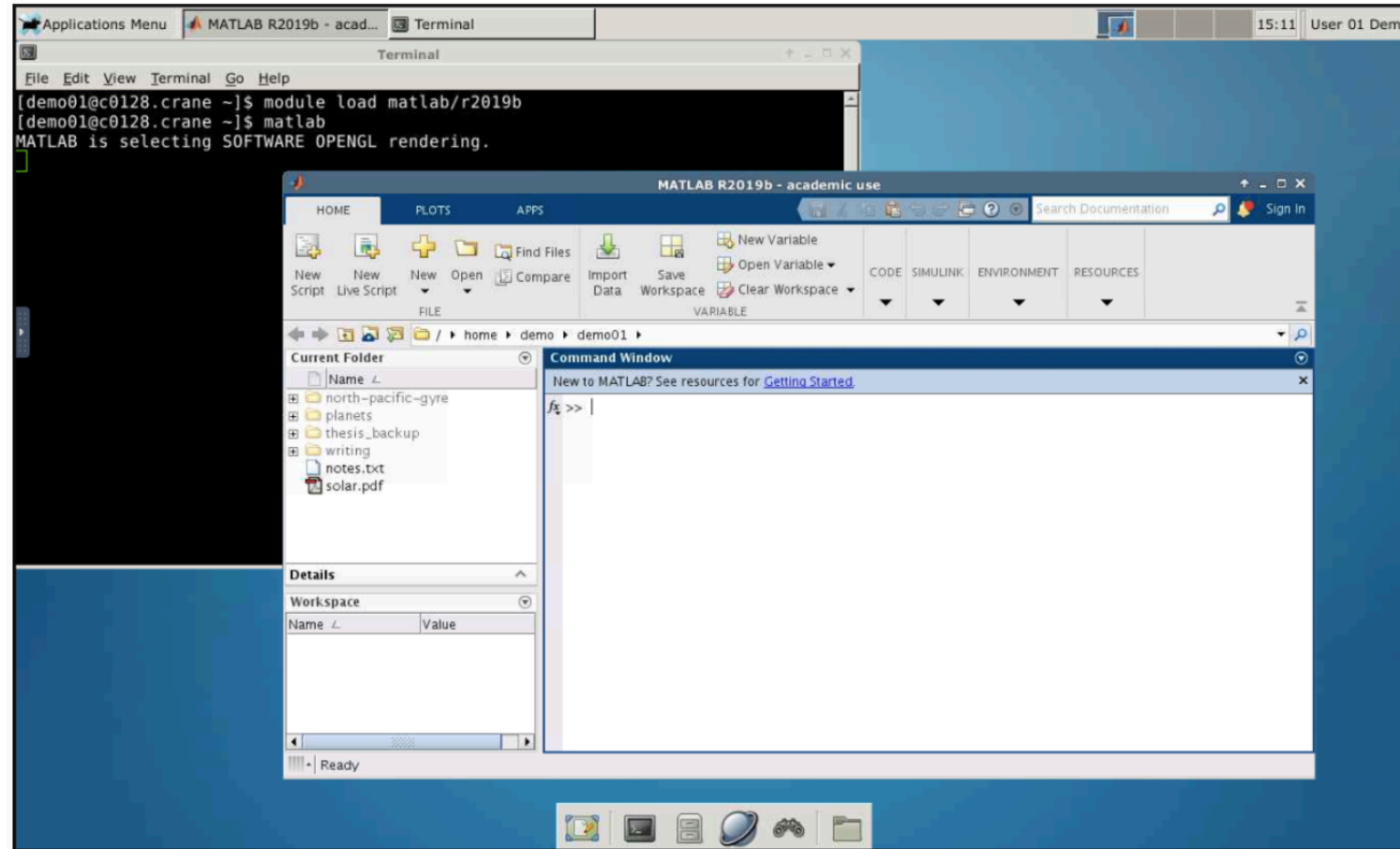
Email

Email address used for notifications

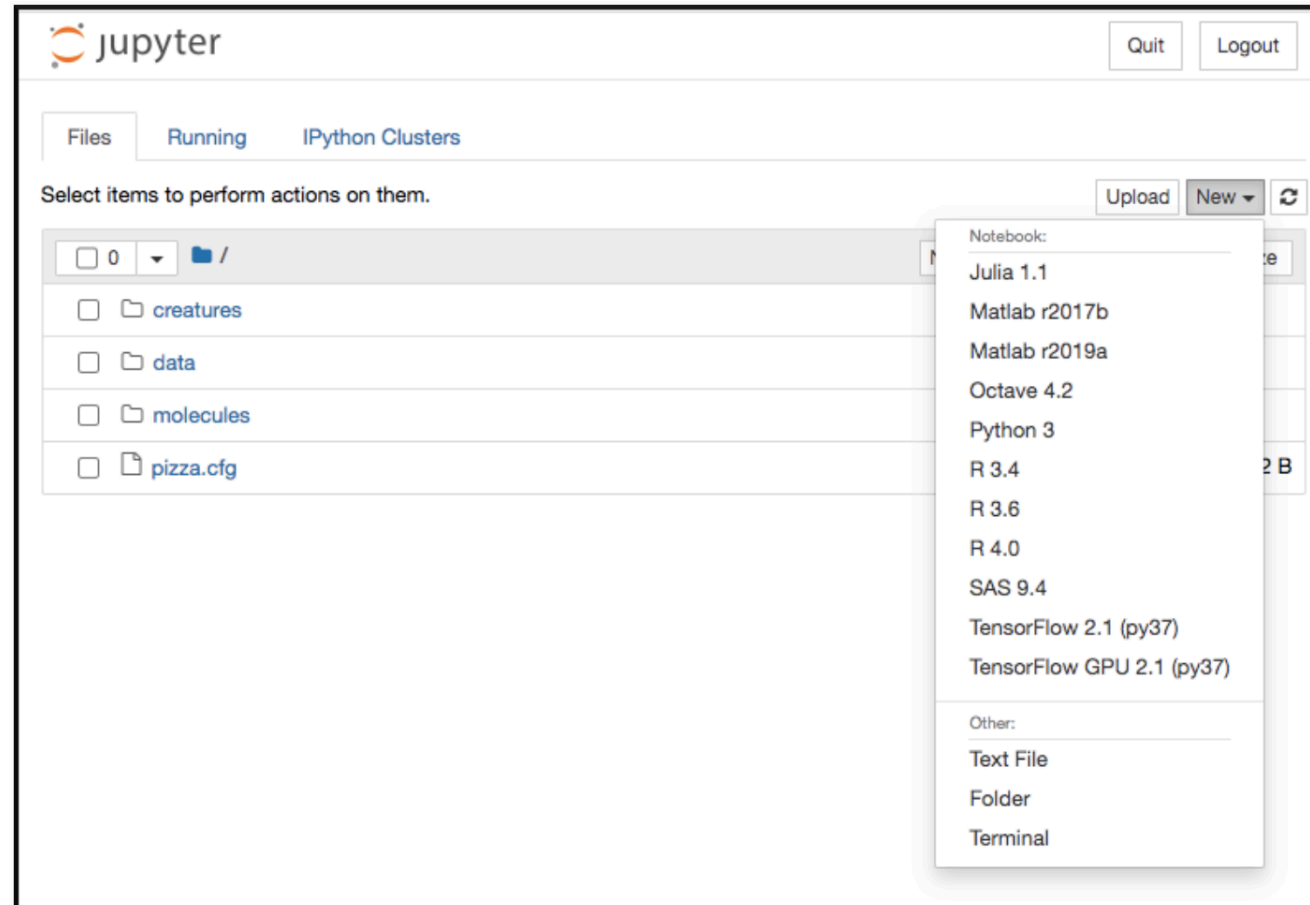
☐ I would like to receive an email when the session starts

Launch

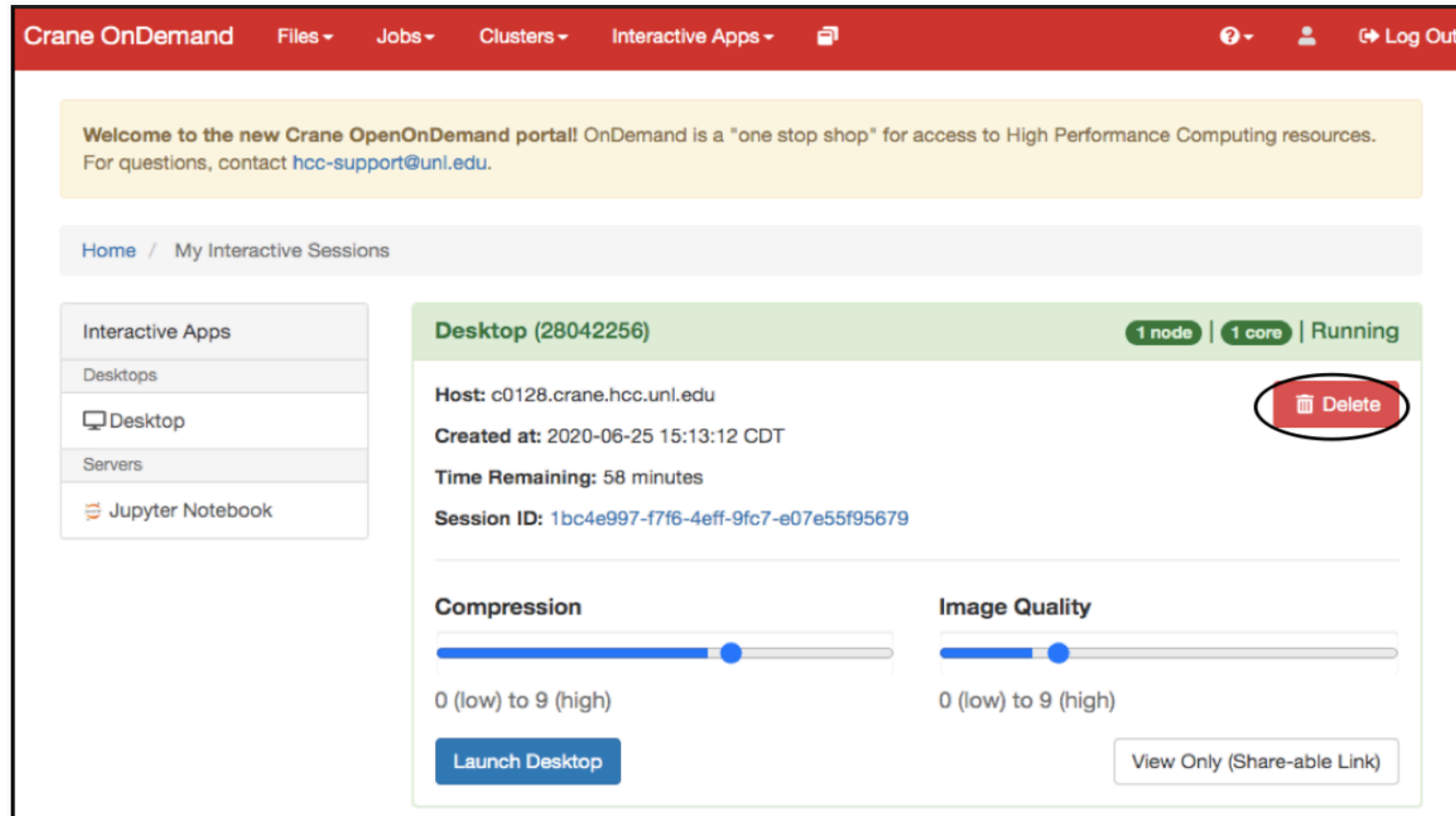
Virtual desktop and Jupyter Notebook with HCC OOD



Virtual desktop and Jupyter Notebook with HCC OOD



Virtual desktop and Jupyter Notebook with HCC OOD



Jupyter Notebook Example: https://github.com/tanash1983/HCC_Jupyter_Example.git