Introduction to HPC Gateway Dashboard

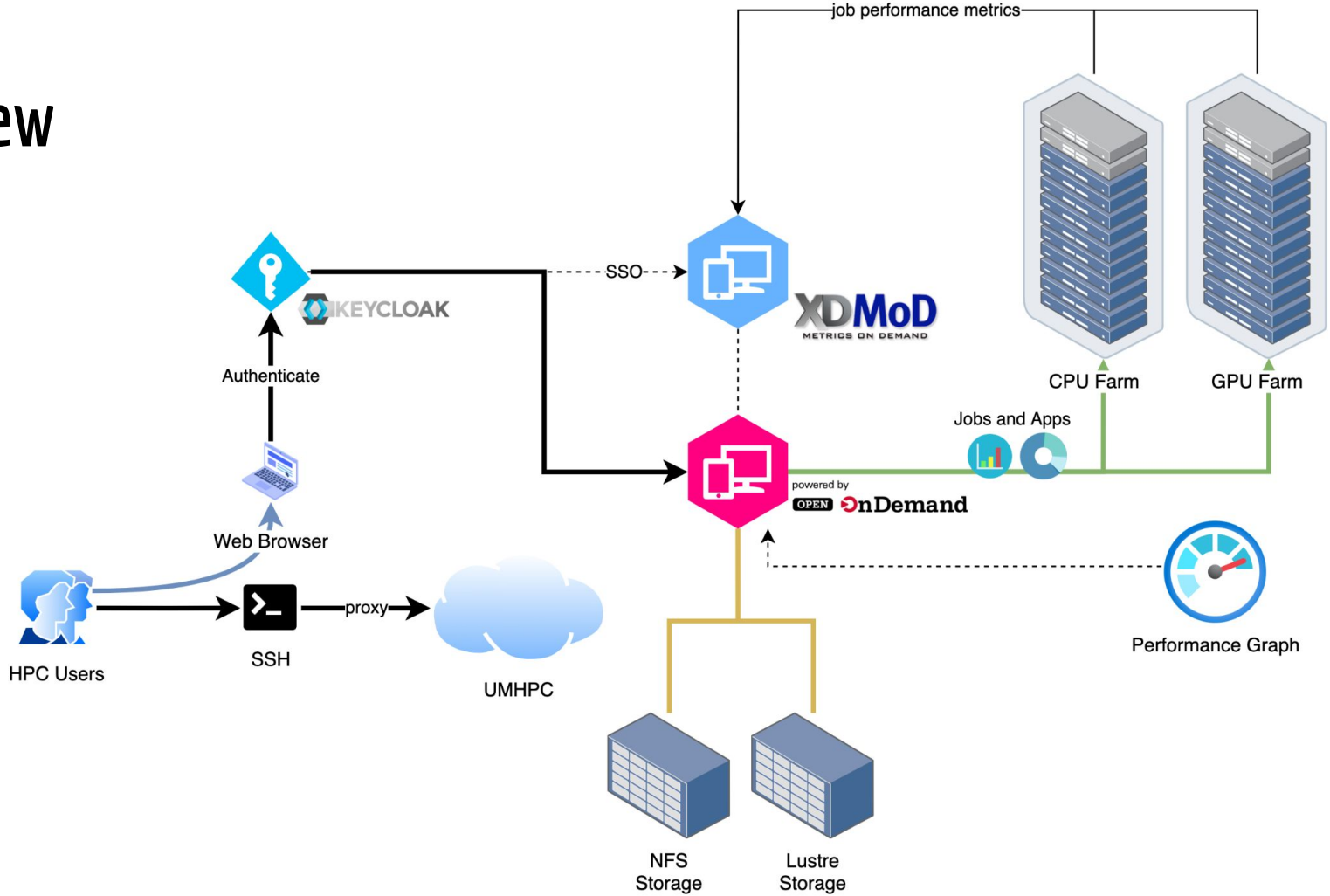
Why the New Dashboard?

- Non-experienced Users:
  - Too difficult to access
  - No Linux experience or knowledge
  - Too complicated to navigate
  - Steep learning curve
- Experienced users:
  - No job performance metrics available to check
  - Desktop environment is complicated to get it running
  - Need job accounting information

What to Expect from the New Dashboard?

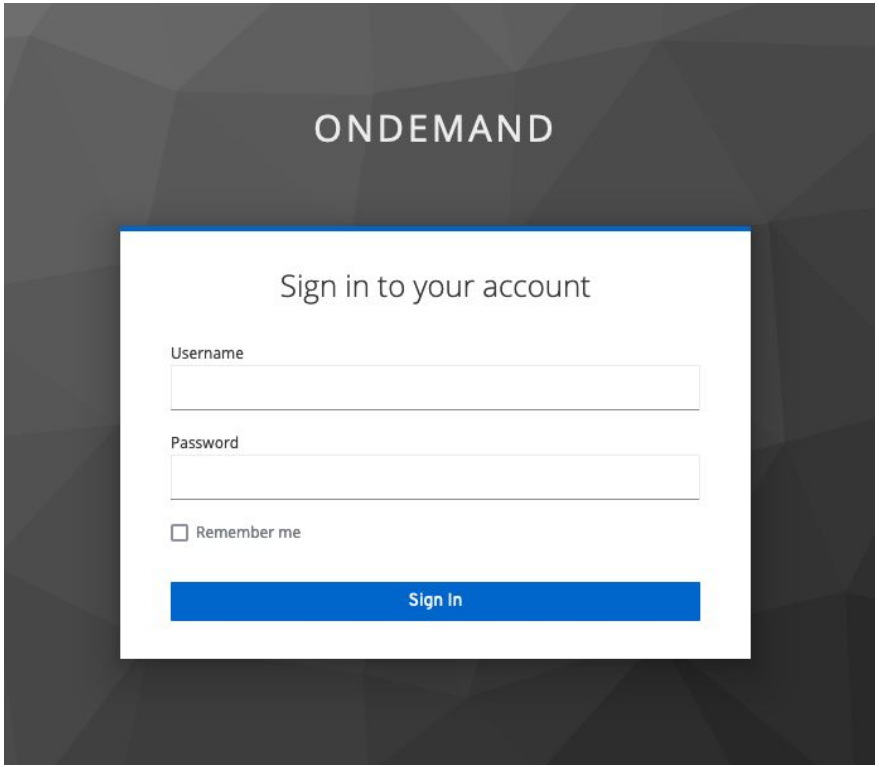
- Non-experienced Users:
  - Lowered learning curve.
  - Shortened delay before first job.
  - GUI based instead of terminal based.
- Experienced Users:
  - Different way to perform HPC activities.
  - Easier access to job performance metrics
  - Easier access to remote desktop environment.

Overview


job performance metrics
SSO
KEYCLOAK
XDMoD
METRICS ON DEMAND
Authenticate
CPU Farm
GPU Farm
Jobs and Apps
powered by
OPEN OnDemand
Web Browser
HPC Users
SSH
proxy
UMHPC
Performance Graph
NFS Storage
Lustre Storage

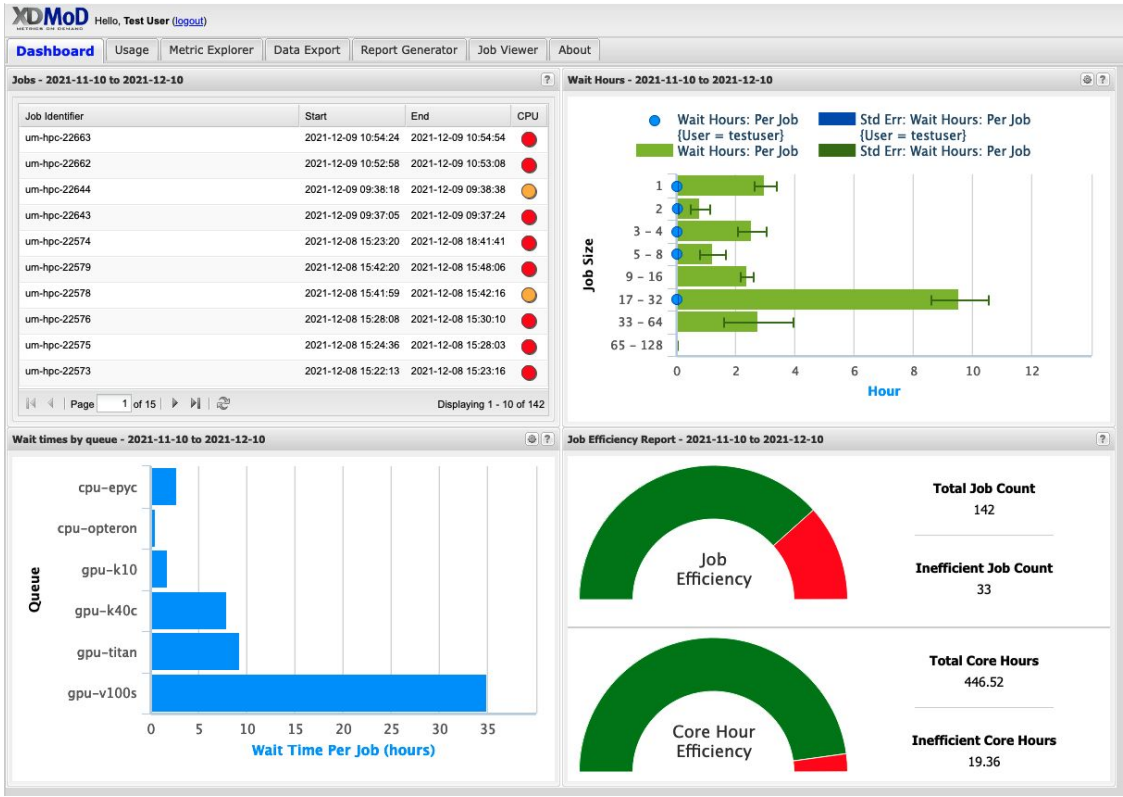
KeyCloak

- Single Sign On (SSO) for Open OnDemand and XDMoD.
- Use your HPC username and password to login.



XSEDE Metrics on Demand (XDMoD)

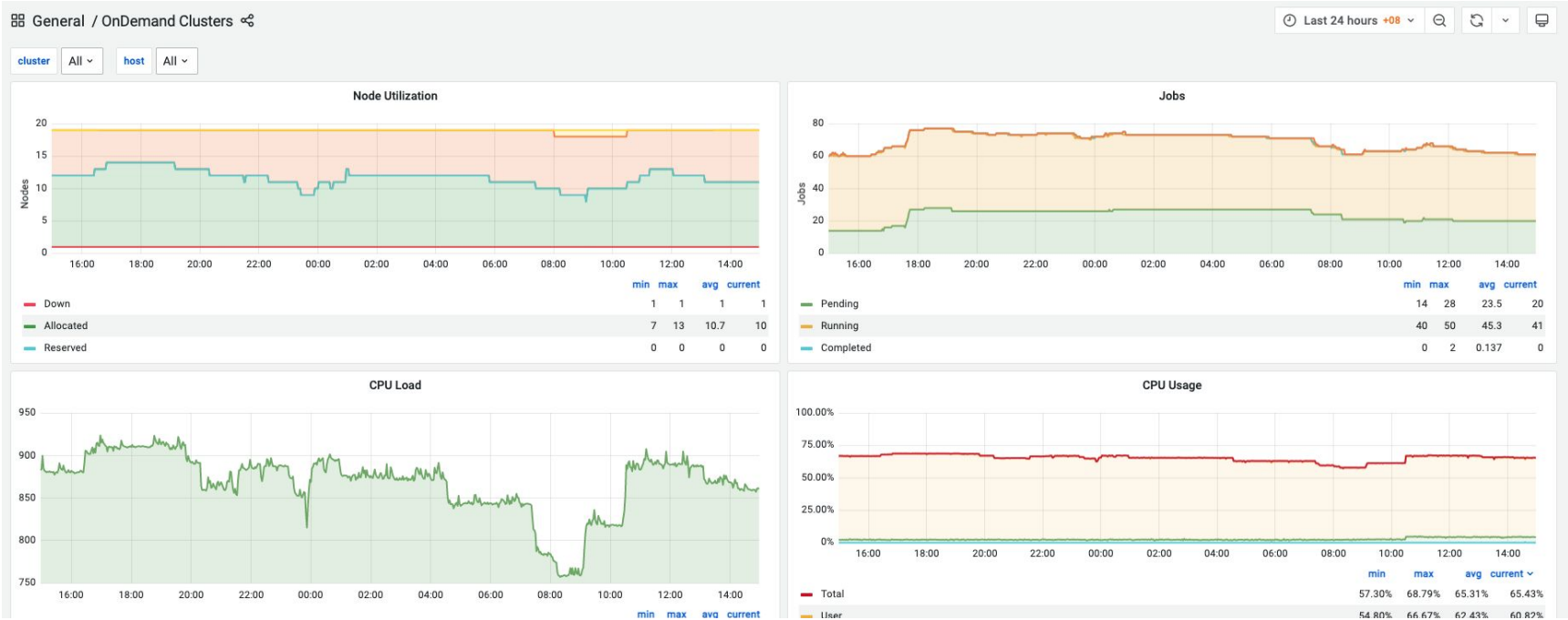
- Most job metrics and accounting information are summarized in XDMoD.
- Job data will not be available before the next day.



XDMoD
METRICS ON DEMAND

Grafana Dashboard

- Detailed resource monitoring for the cluster.

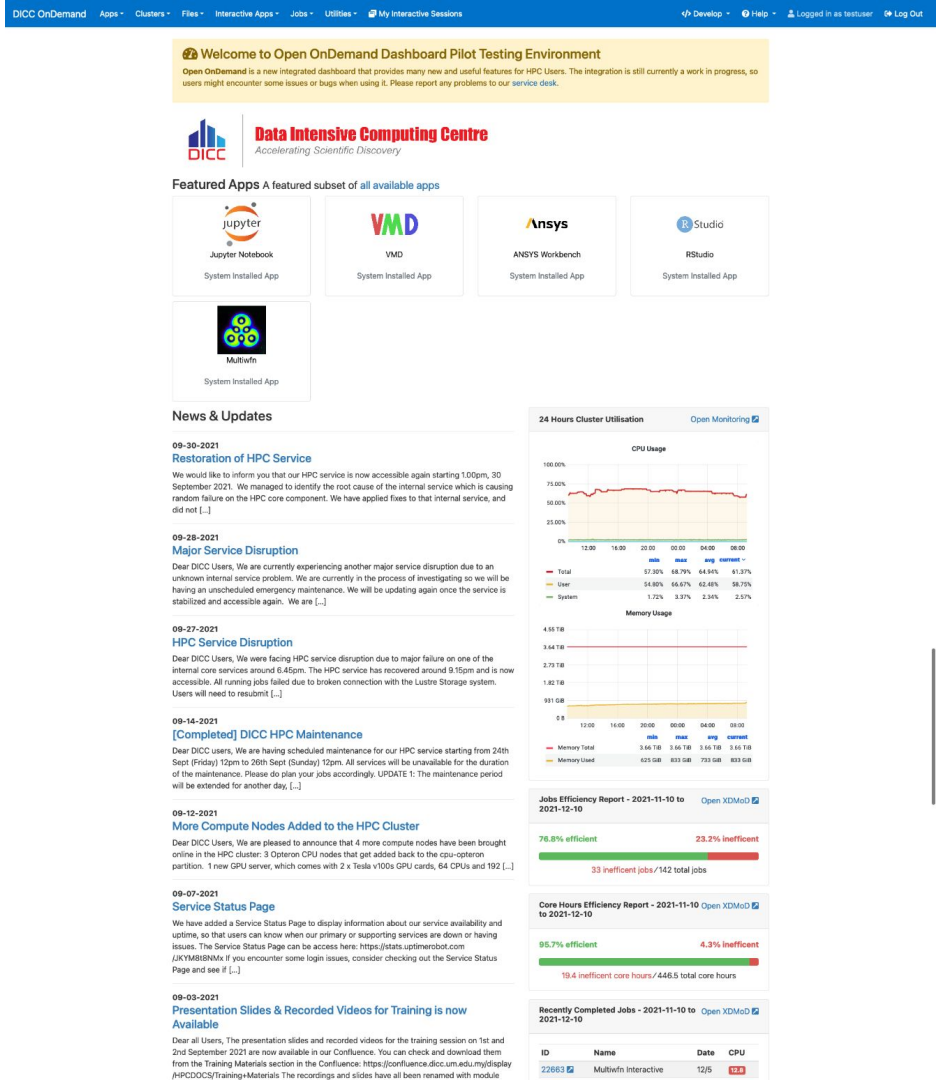


Open OnDemand Dashboard

- A dashboard for all your HPC daily activities.

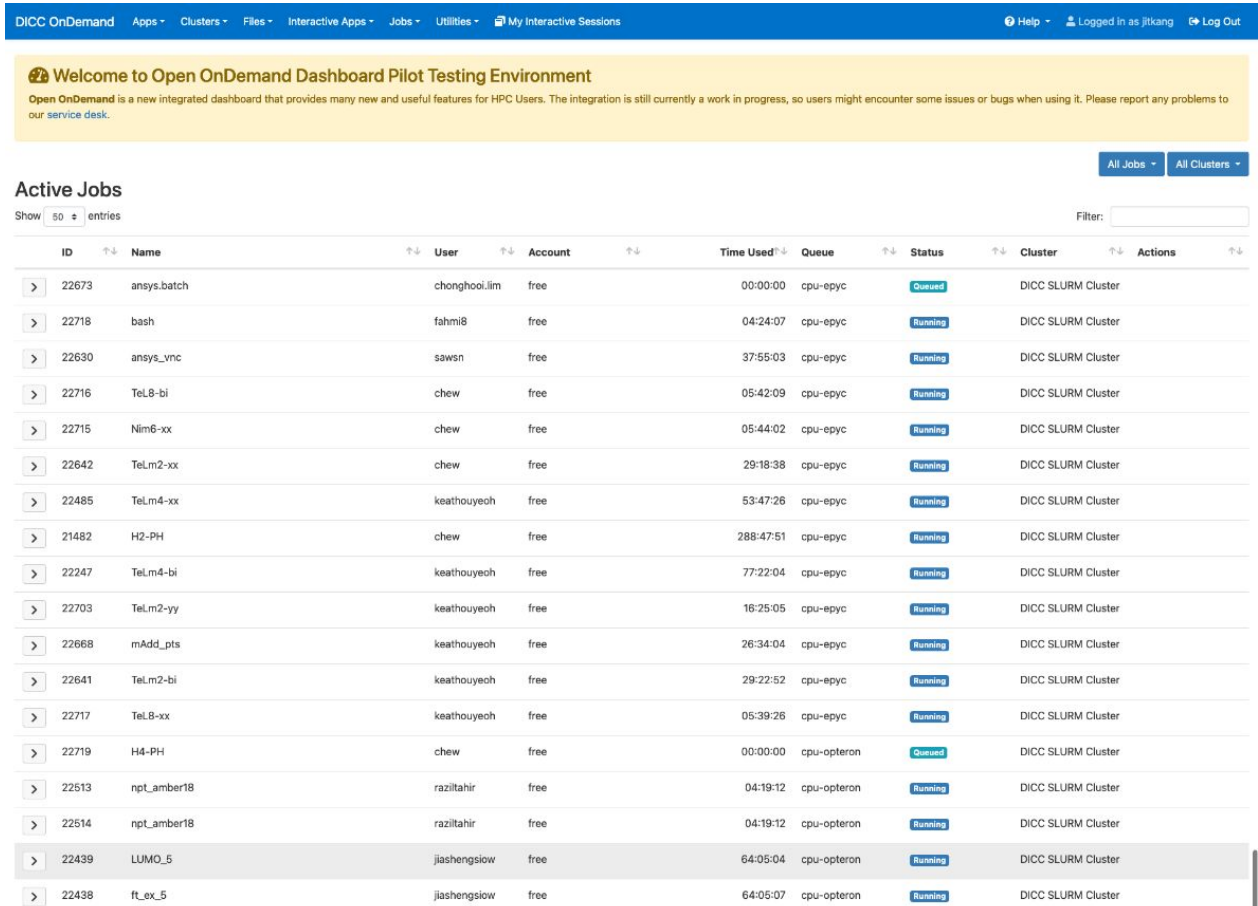
powered by

OPEN OnDemand



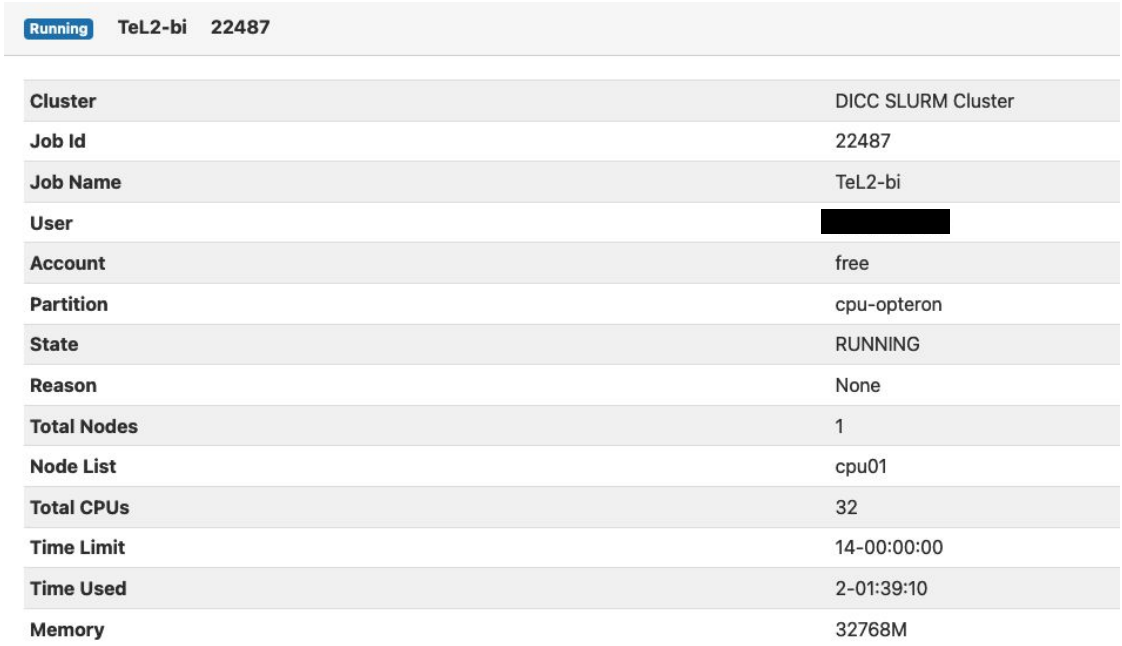
Jobs Module

- List of all jobs in the queue.



Jobs Module

- Summarized details of job in list.

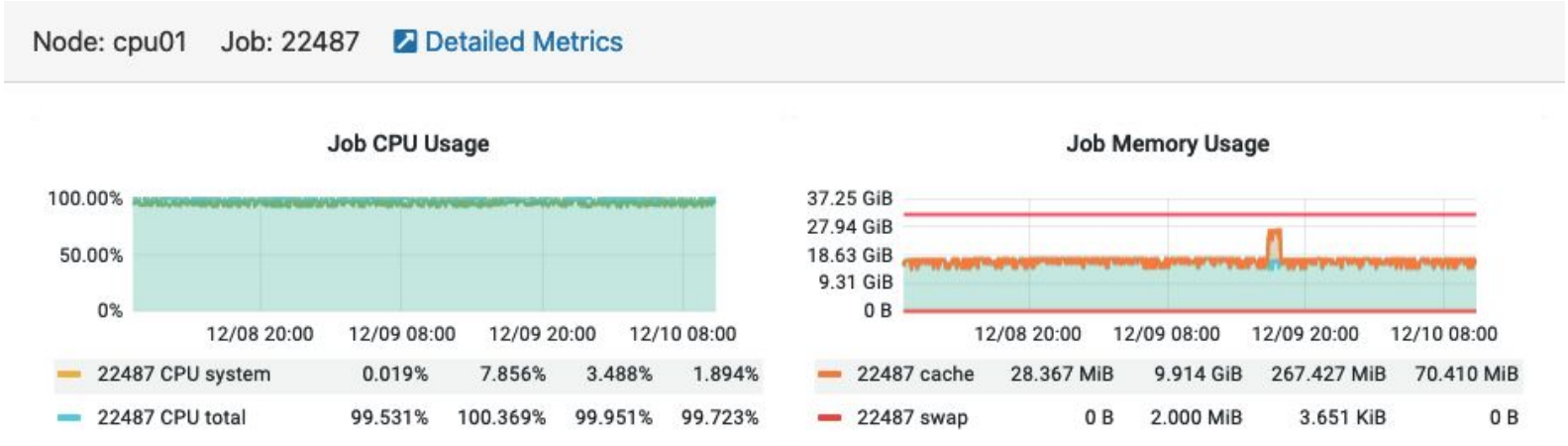


Running TeL2-bi 22487

Cluster	DICC SLURM Cluster
Job Id	22487
Job Name	TeL2-bi
User	[redacted]
Account	free
Partition	cpu-opteron
State	RUNNING
Reason	None
Total Nodes	1
Node List	cpu01
Total CPUs	32
Time Limit	14-00:00:00
Time Used	2-01:39:10
Memory	32768M

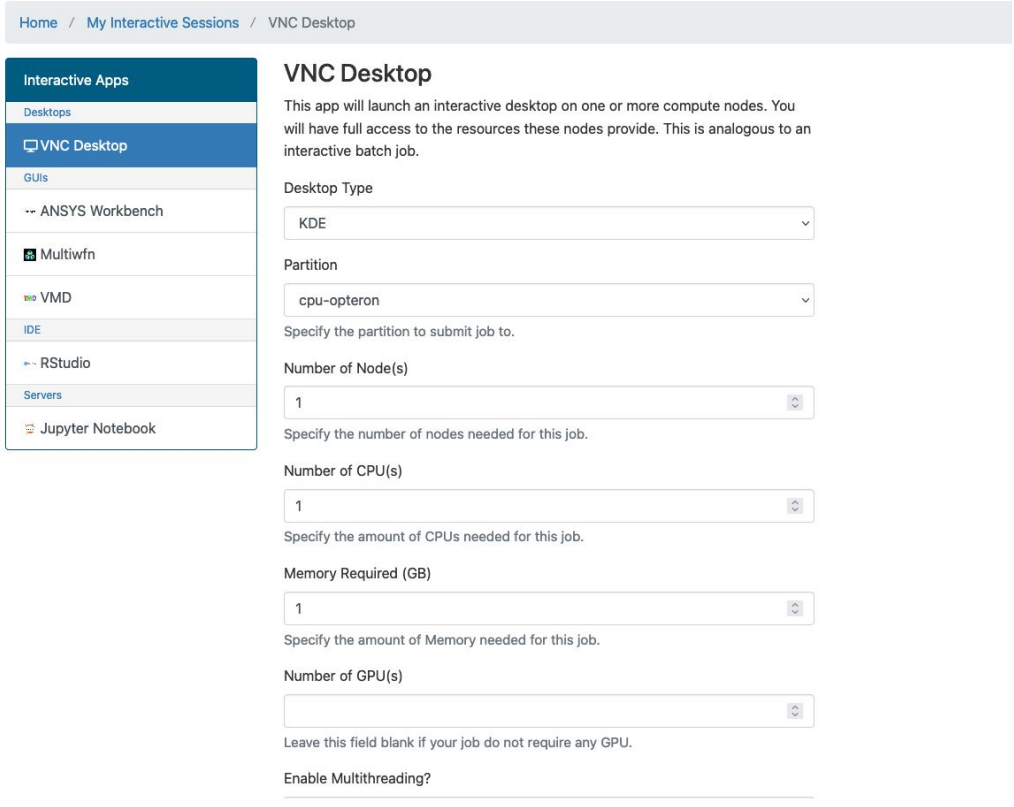
Jobs Module

- Job performance metrics graph.
- Easier to check job resources usage.



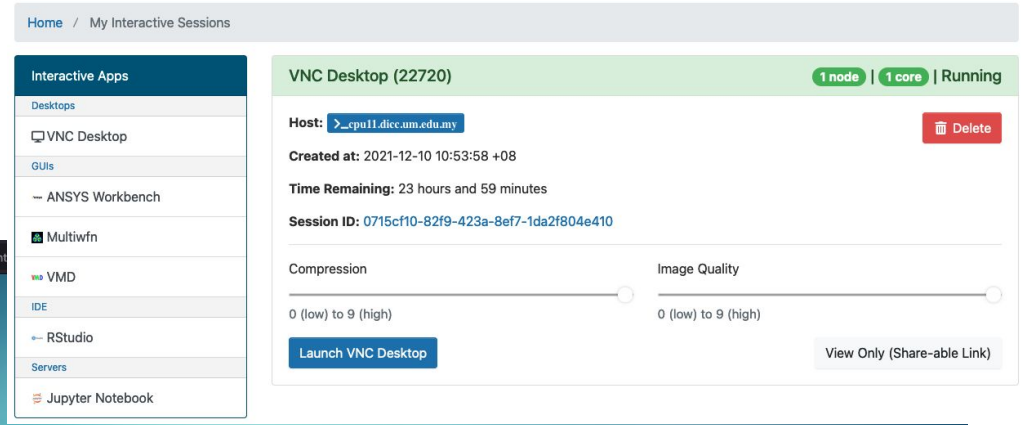
Interactive Apps with a Form

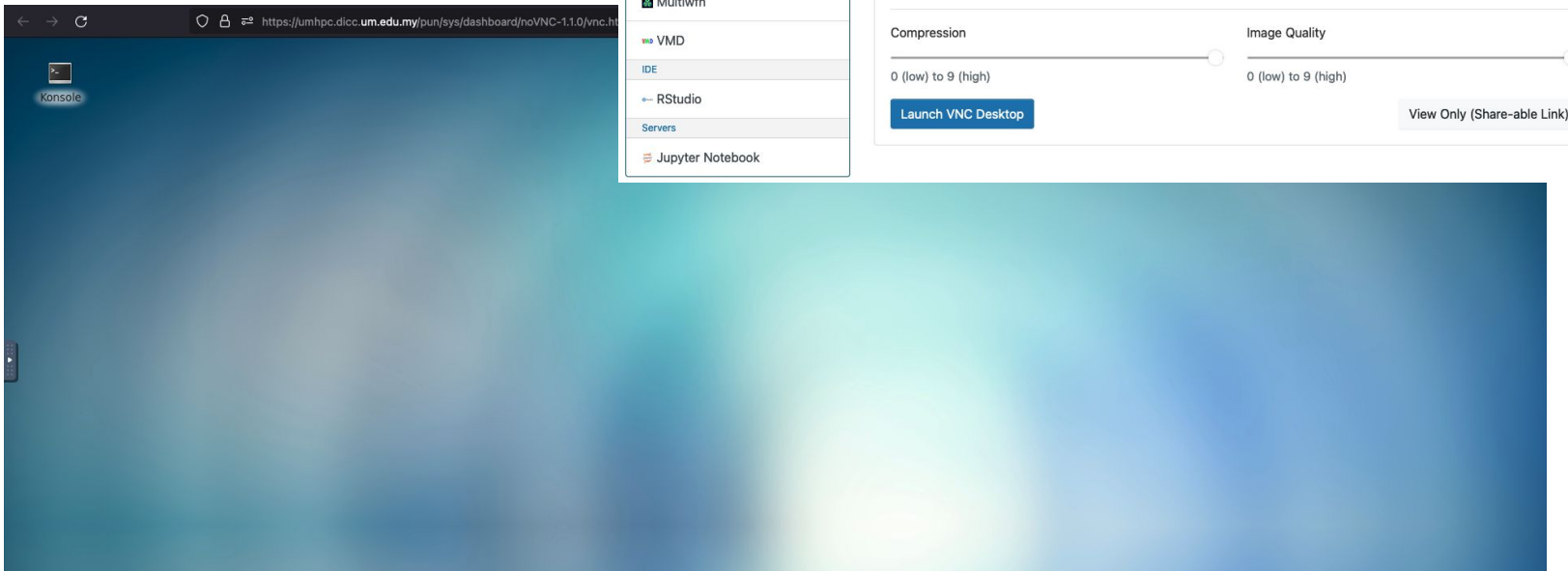
- Run your interactive application with the help of a preset form.



VNC and Interactive Apps with a Button

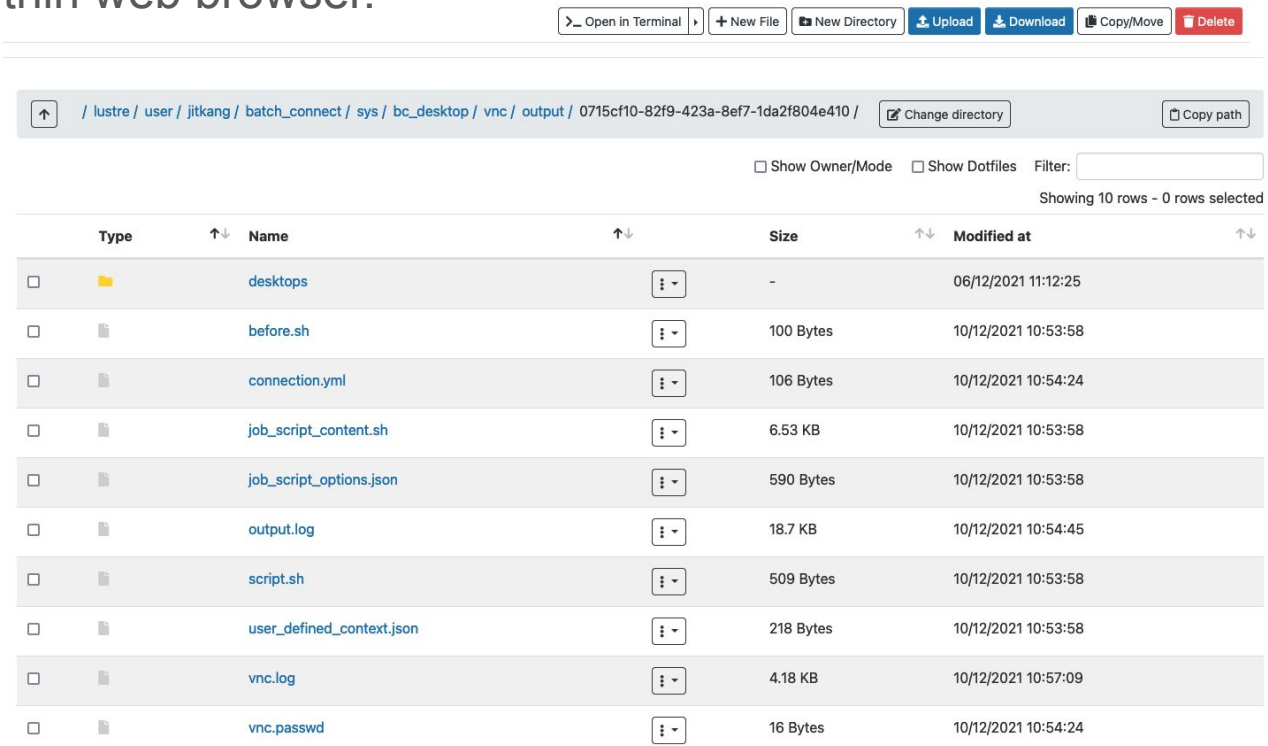
- Connect to VNC Desktop or Interactive Apps within web browser with a single button.





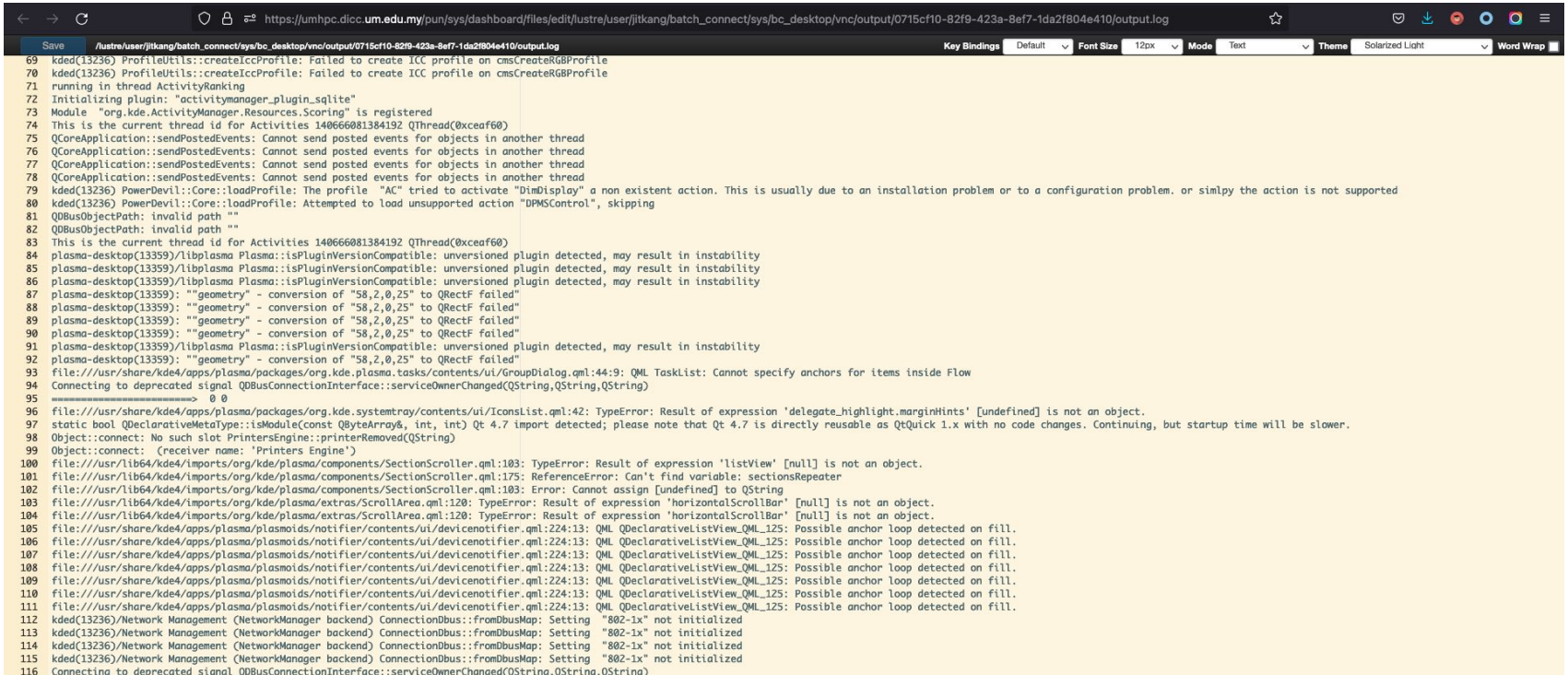
Web Based File Manager

- Manage your files within web browser.
  - Download
  - Upload
  - Edit
  - View



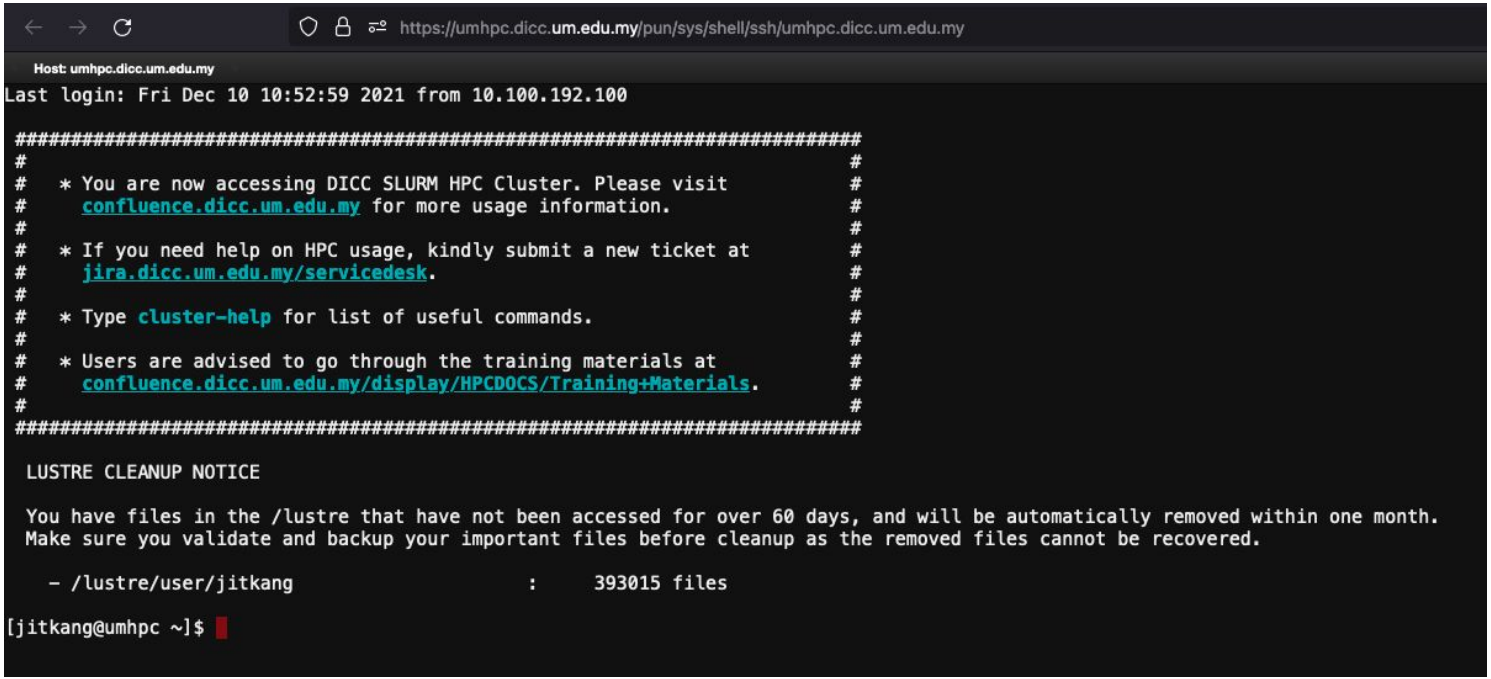
Web Based File Manager

- View and Edit file within web browser with the built-in editor.



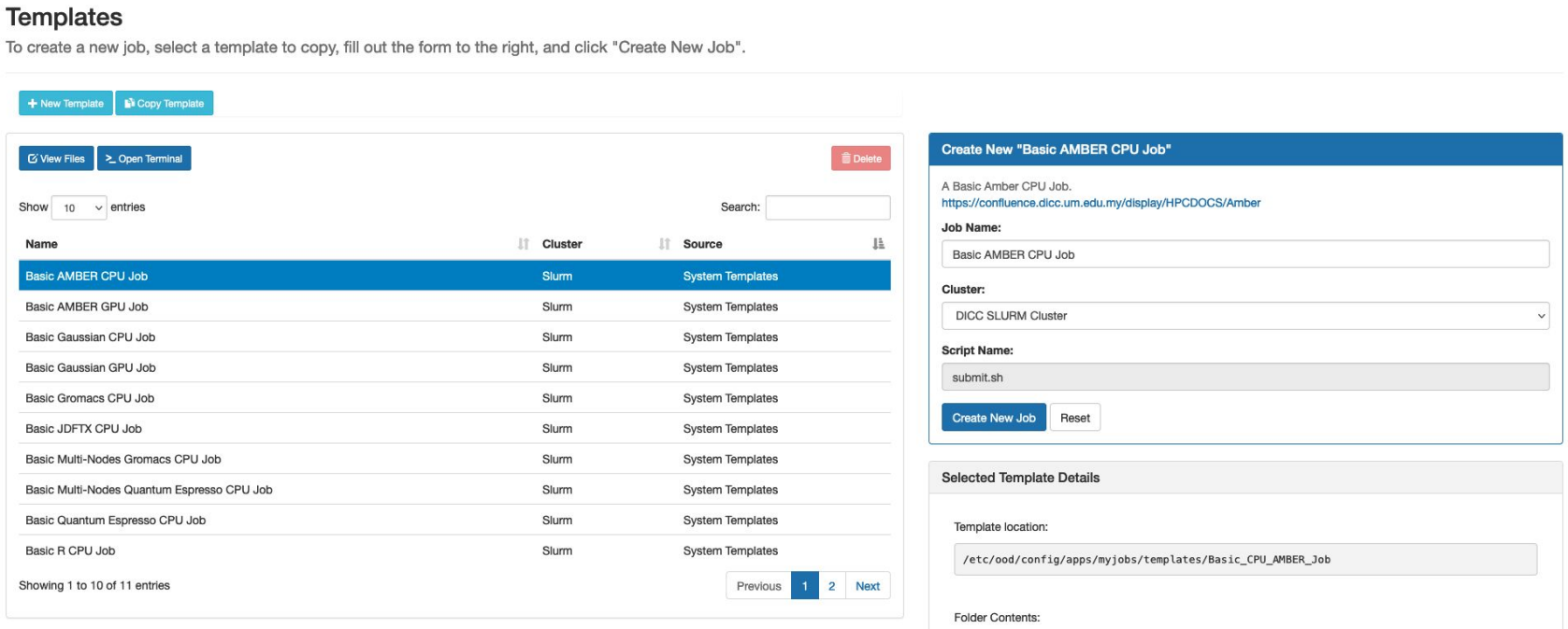
Web Based SSH Shell

- Access SSH from web browser.



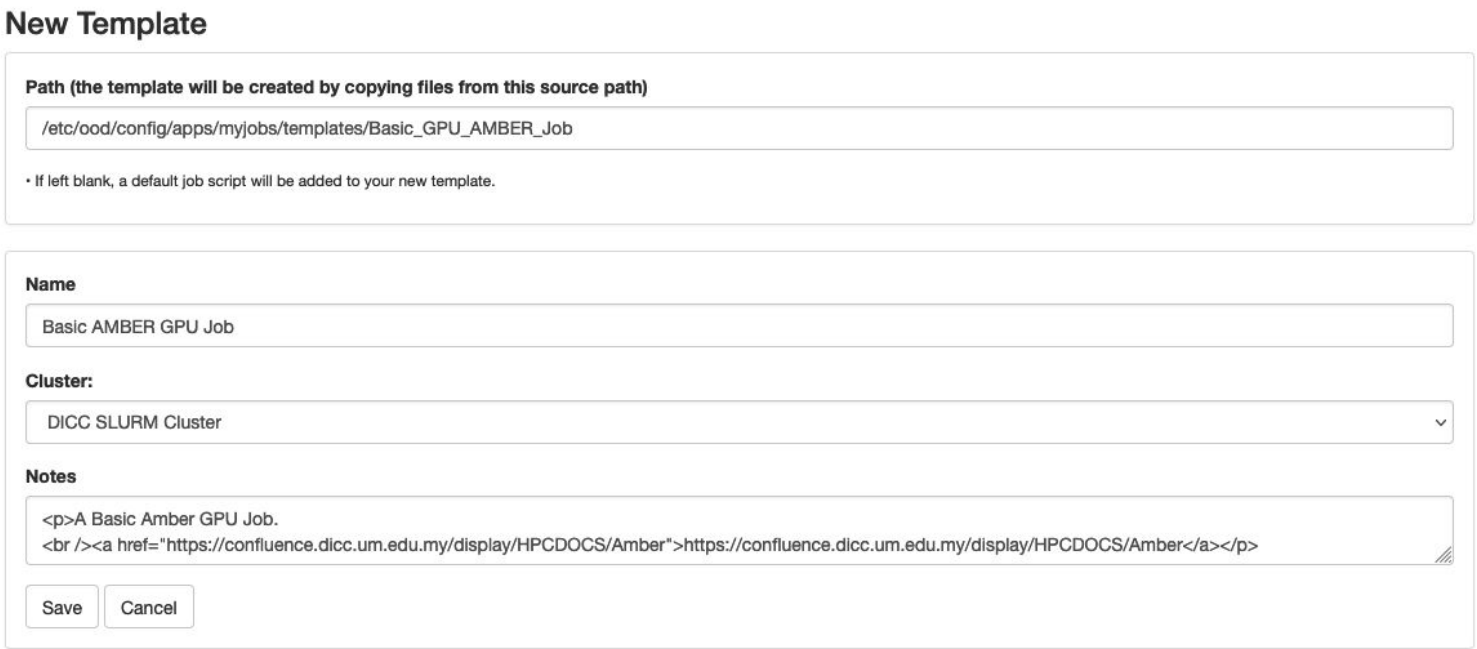
Job Composer

- Various job pre-defined submission script templates for different jobs.



Job Composer

- Create your own job template and share with others.



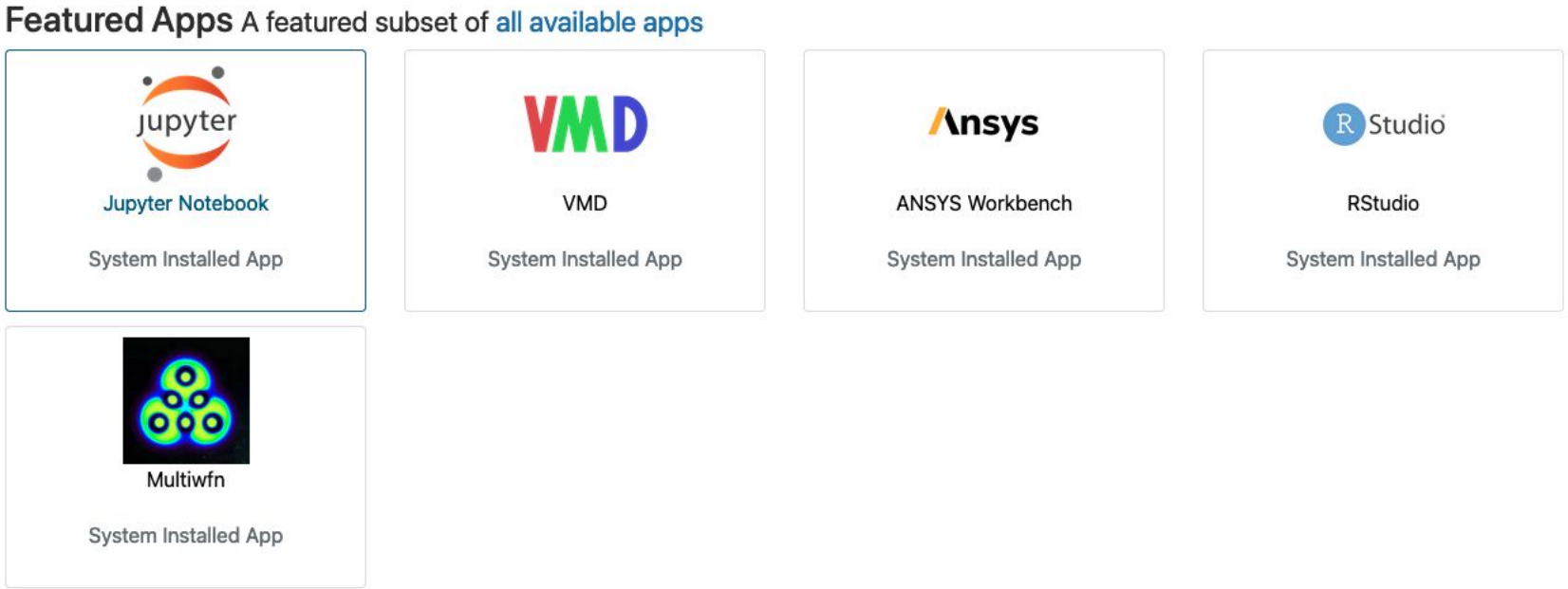
Job Composer

- Organized directory per job template project:

  `/lustre/user/<username>/project/default/<Project ID>`

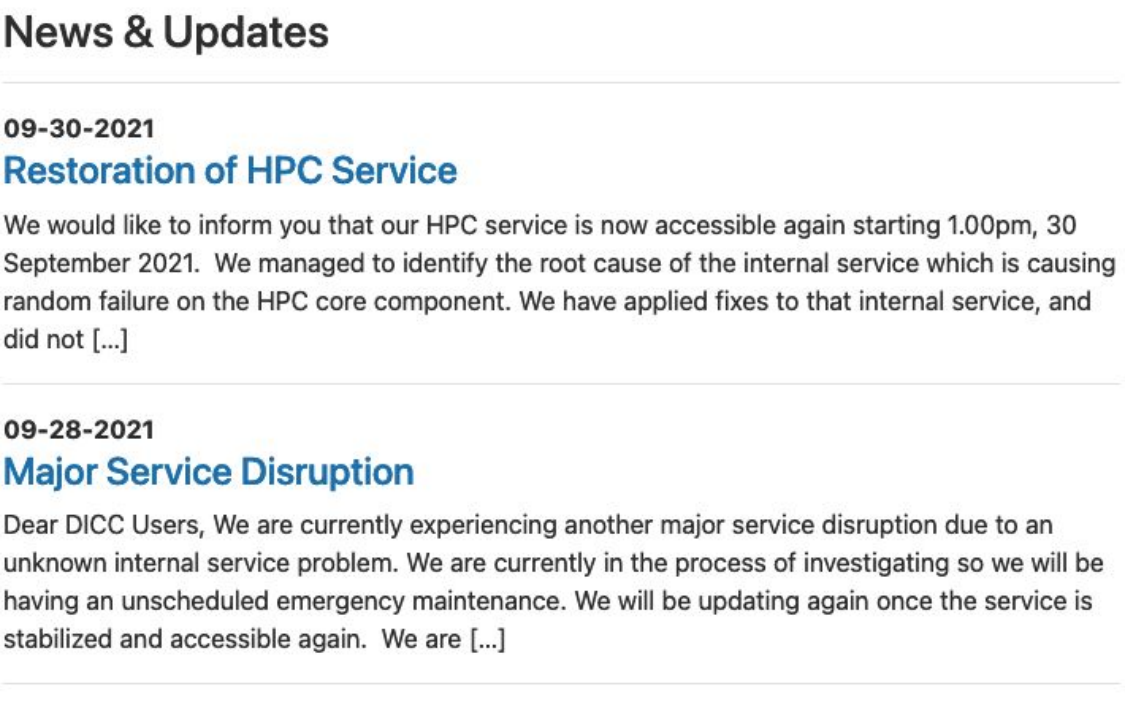
Featured Interactive Apps on Front Page

- Quickly access interactive applications when you login.



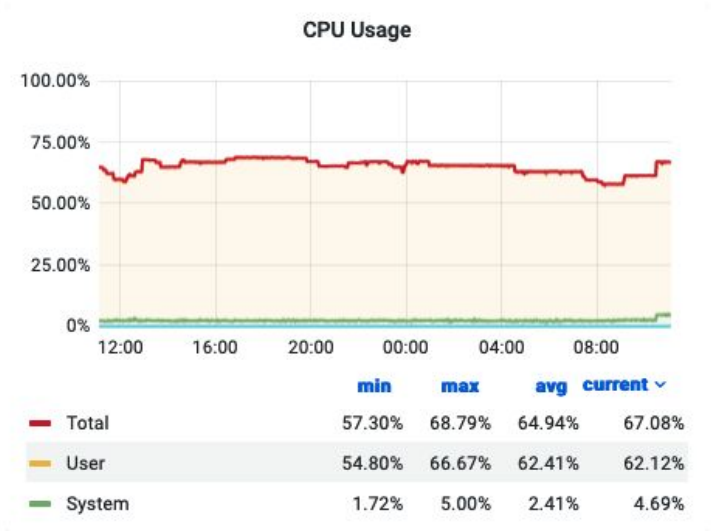
Never Misses any DICC Update

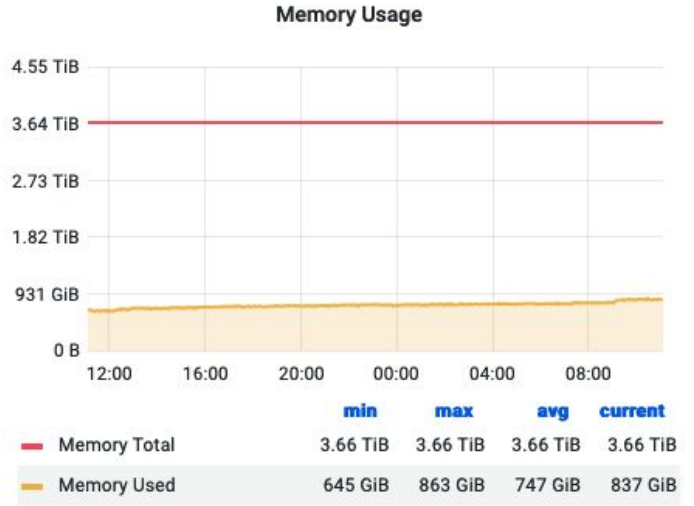
- News and Updates on front page.



24H Cluster Resource Information Quick Glance

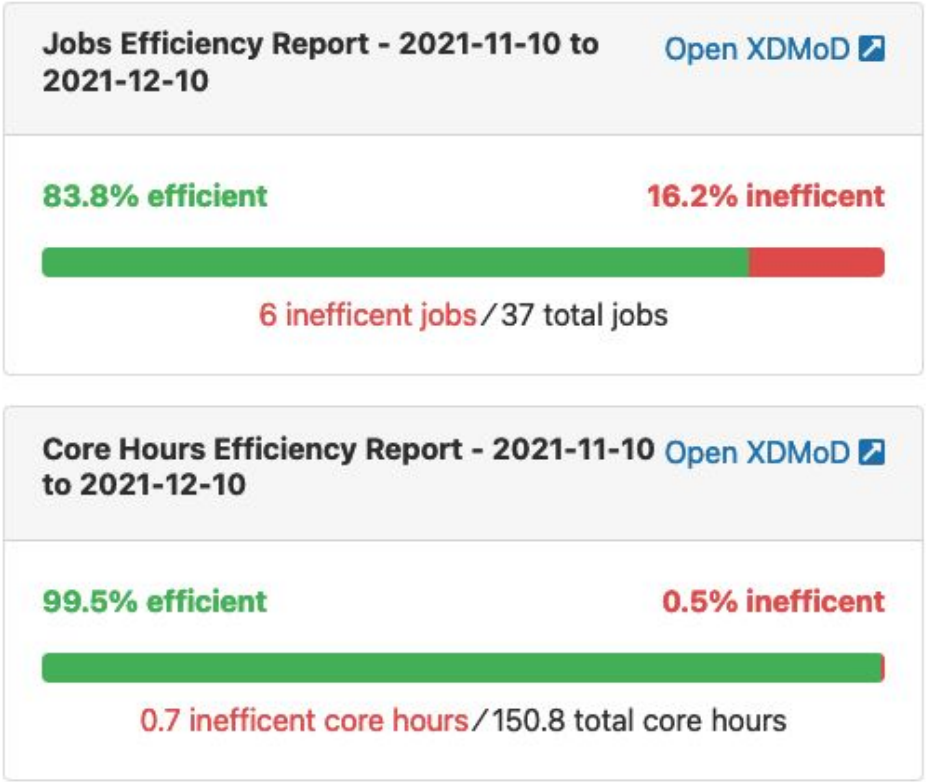
- Two graphs for cluster overall CPU and Memory Usage





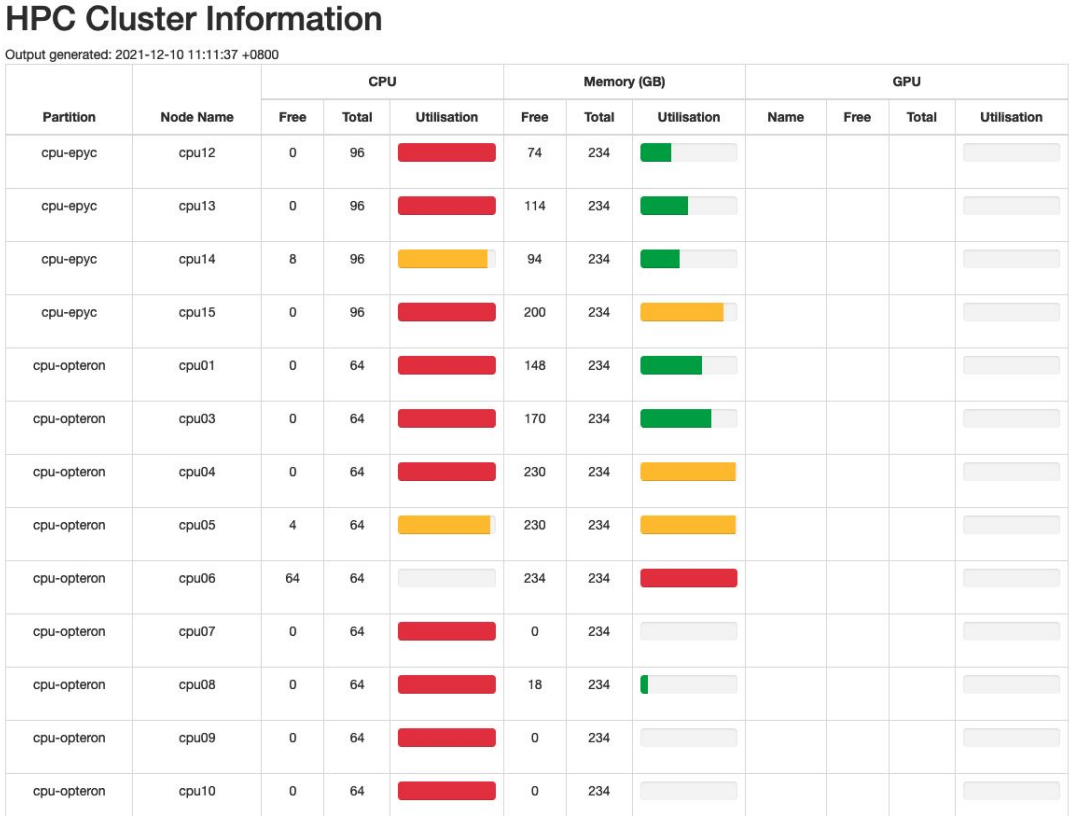
Job Efficiency Report

- A summary for your last month jobs.
- More details can be found in XDMoD.



Enhanced HPC cluster-info

- More color way for your daily HPC resources query.



HPC Cluster Information

Output generated: 2021-12-10 11:11:37 +0800

		CPU			Memory (GB)			GPU			
Partition	Node Name	Free	Total	Utilisation	Free	Total	Utilisation	Name	Free	Total	Utilisation
cpu-epyc	cpu12	0	96		74	234					
cpu-epyc	cpu13	0	96		114	234					
cpu-epyc	cpu14	8	96		94	234					
cpu-epyc	cpu15	0	96		200	234					
cpu-opteron	cpu01	0	64		148	234					
cpu-opteron	cpu03	0	64		170	234					
cpu-opteron	cpu04	0	64		230	234					
cpu-opteron	cpu05	4	64		230	234					
cpu-opteron	cpu06	64	64		234	234					
cpu-opteron	cpu07	0	64		0	234					
cpu-opteron	cpu08	0	64		18	234					
cpu-opteron	cpu09	0	64		0	234					
cpu-opteron	cpu10	0	64		0	234					

Check Home Directory Quota

- Check your home directory (NFS) Quota.

Quota

Output generated: 2021-12-10 14:46:47 +0800

Filesystem	Blocks	Blocks Quota	Blocks Limit	Blocks Grace	Files	Files Quota	Files Limit	Files Grace
10.11.141.33:/mnt/hpc_home	70024M	1000G	1100G	0	566k	1000k	1100k	0

Resource Reservation Information

- Wonder if some HPC resources are reserved?

HPC Resources Reservation Information

Output generated: 2021-12-13 10:10:27 +0800

Reservation Name	Start	End	Reserved Nodes	Reserved For	Reserved TRES	Flags
cpu06_hardware_check	2021-11-03T15:20:54	2022-11-03T15:20:54	cpu06	root,jitkang,testuser	cpu=64	MAINT,IGNORE_JOBS,SPEC_NODES
nvidia_update_reboot	2021-12-07T18:42:11	2022-12-07T18:42:11	gpu01	root	cpu=32	MAINT,IGNORE_JOBS,SPEC_NODES
ood_training_resv	2021-12-13T07:24:37	2022-12-13T07:24:37	cpu10	jitkang,testuser	cpu=64	MAINT,IGNORE_JOBS,SPEC_NODES,MAGNETIC

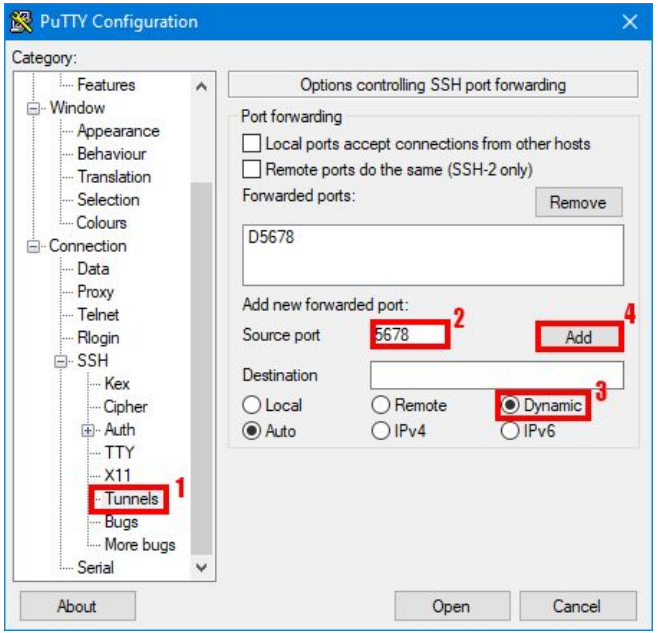
Ready for Action?

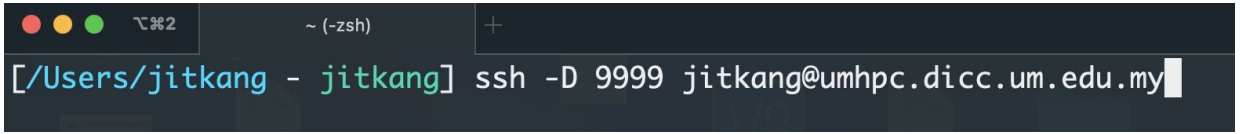
Software Requirements

- SSH Terminal
  - PuTTY
  - Terminal for Linux and MacOS
- Web browsers
  - Google Chrome
  - Firefox
- Web browser plugin
  - SwitchyOmega

Proxy Tunnel Settings

- Documentation page: https://confluence.dicc.um.edu.my/display/HPCDOCS/Setting+up+SSH+Tunnel
- Remember the port number used.
- In this case 5678 or 9999.



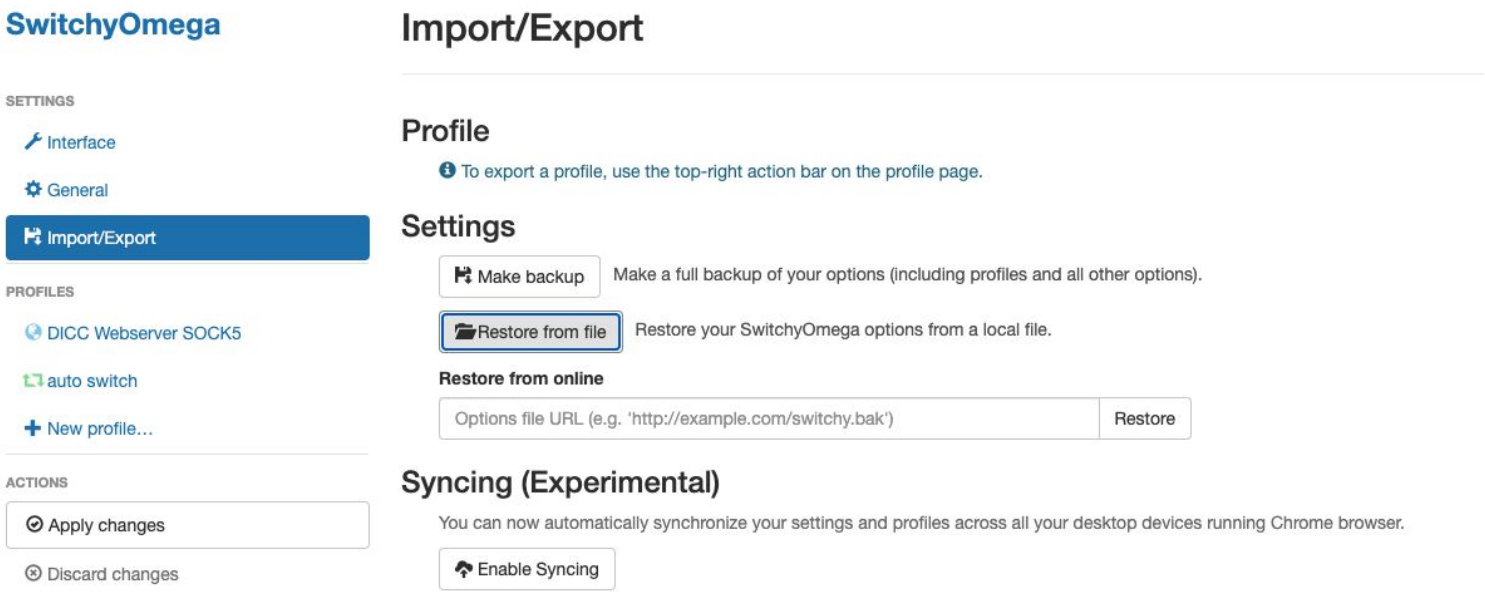


Browser Extension (SwitchyOmega)

- To allow web browser to connect through the Proxy Tunnel.
- Download
  - Google Chrome
    - https://chrome.google.com/webstore/detail/proxy-switchyomega/padekgcemlokbadohgkifijomclgjgif?hl=en
  - Firefox
    - https://addons.mozilla.org/en-US/firefox/addon/switchyomega/

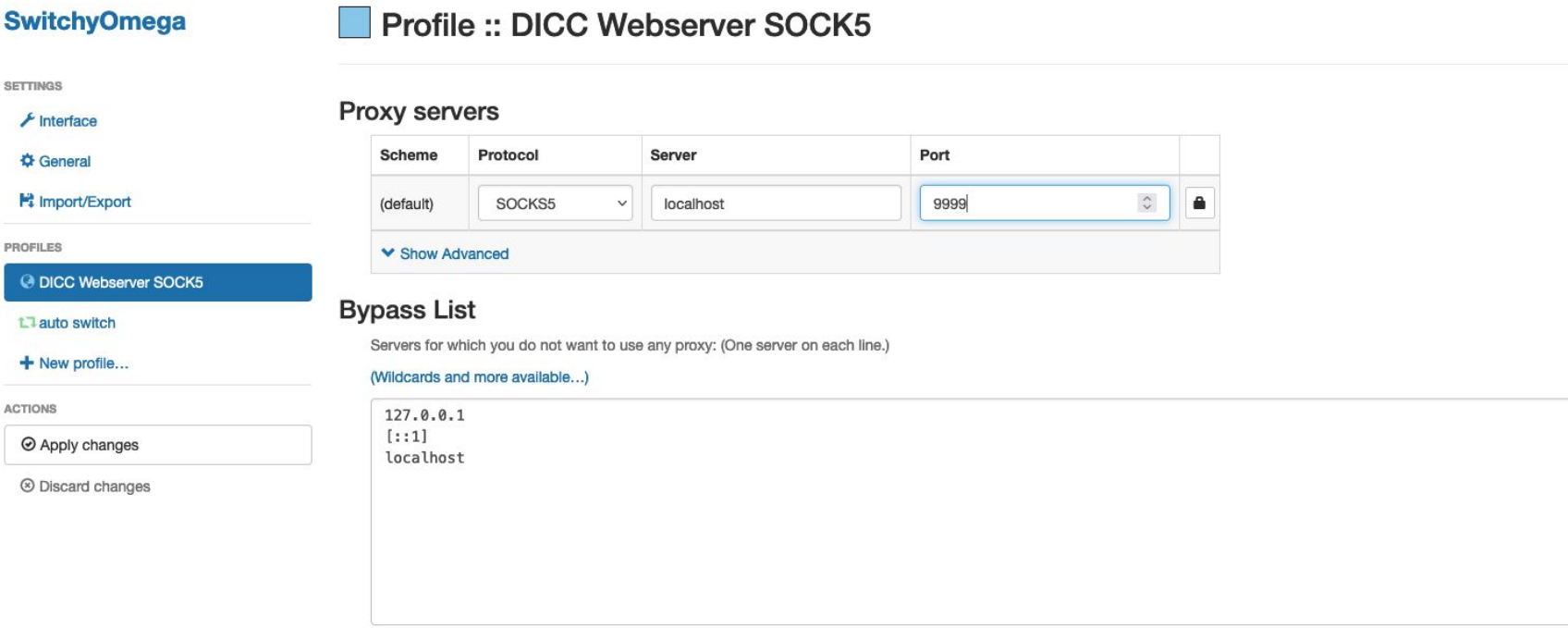
Import SwitchyOmega Settings

- Click to download Settings File



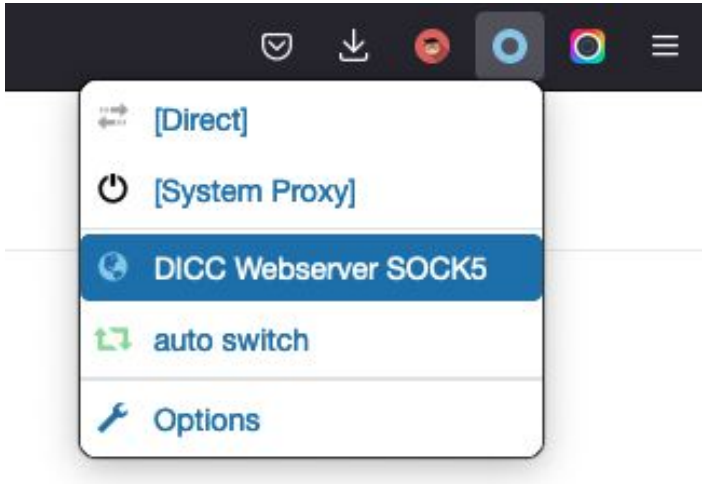
Adjust Proxy Port in SwitchyOmega

- Adjust the port if according to the port used earlier.



SWITCH ON SwitchyOmega

- Make sure to switch on the proxy, or otherwise it won’t works.
- Turn it off if you no longer need the proxy.



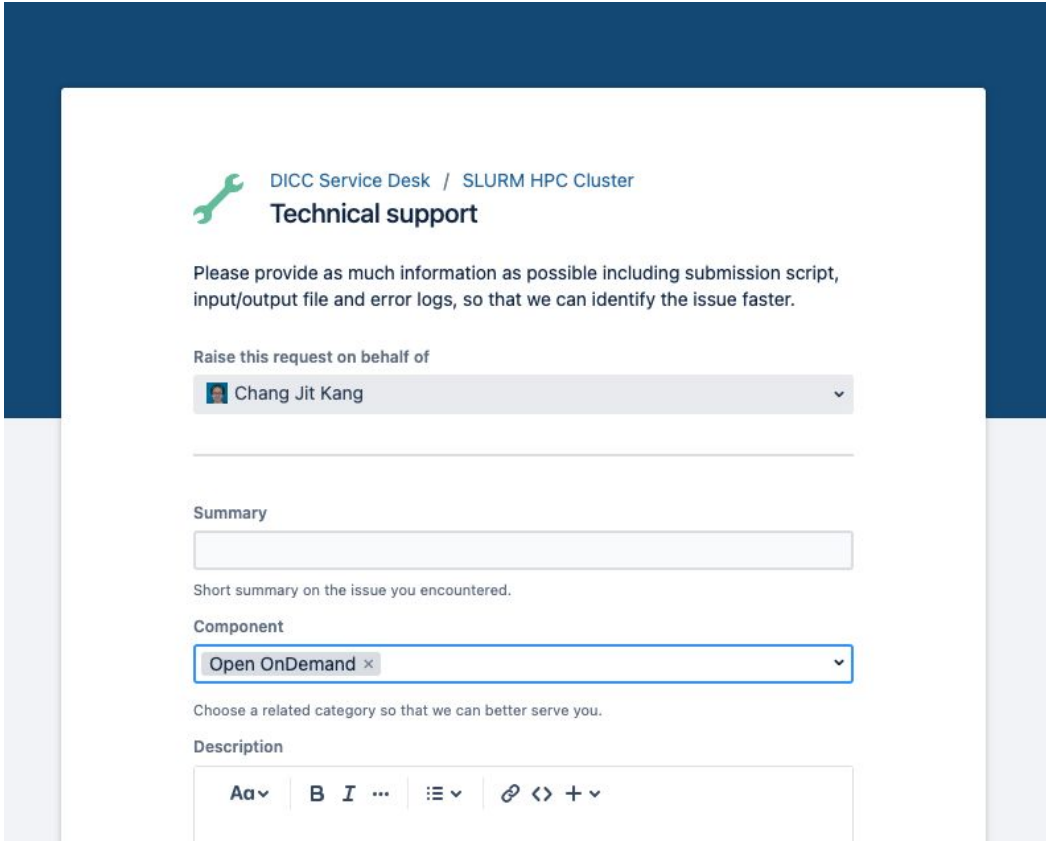
Accessing the Dashboard

- Open your web browser, go to url https://umhpc.dicc.um.edu.my.

Any Question?

Service Desk

- Report any problems to Service Desk.
- Select **Open OnDemand** as the component.



Thank you