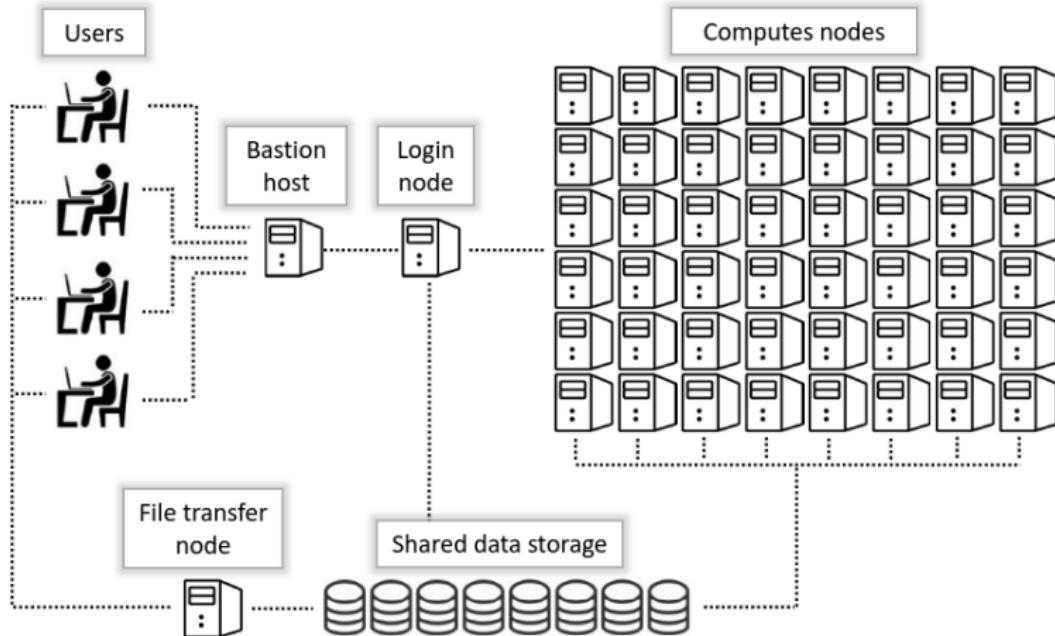


High Performance Computing: Fast, Free, Intuitive

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What is HPC?



- El Gato
 - 131 nodes of 16 cores with 256GB onboard
 - 122 nodes with Nvidia K20X (GPU)
- Ocelote
 - 400 nodes of 28 cores with 192GB onboard
 - 46 nodes with Nvidia P100
- Puma
 - 236 nodes of 94 cores with 512GB onboard
 - 8 nodes with multiple Nvidia V100S

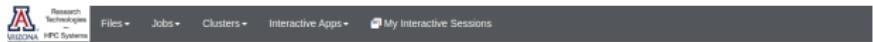


- You!

- Provided you are sponsored by a faculty member at the University.
- To set up an account, log into <https://account.arizona.edu/welcome> using your UAccess credentials, and request an HPC account.
- This will require you to request a faculty to sponsor you - **this does not cost anything to you or the faculty.**

How to access?

- ssh + slurm
- web interface



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



Please NOTE: "windfall" jobs will be restarted or terminated without notice if pre-empted by a "standard" job in queue.

OPEN OnDemand

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

- <https://ood.hpc.arizona.edu/pun/sys/dashboard>
- Provides intuitive “point and click” access to all of the HPC resources
- Including a job composer, direct access to compute nodes via in-browser gui, jupyter notebooks, and a command line interface

- ssh provides a simpler interface to the clusters, while giving you more power to submit “set and forget” jobs
- Using the `-X` option also gives graphics!
- Ability to run interactive sessions

```
(base) cmhyett@Newton:~$ ssh ${USER}@hpc.arizona.edu
Password:
Duo two-factor login for cmhyett

Enter a passcode or select one of the following options:
1. Phone call to XXX-XXX-8902
2. SMS passcodes to XXX-XXX-8902 (next code starts with: 2)

Passcode or option (1-2): ^C
(base) cmhyett@Newton:~$ ssh -X ${USER}@hpc.arizona.edu
Password:
Duo two-factor login for cmhyett

Enter a passcode or select one of the following options:
1. Phone call to XXX-XXX-8902
2. SMS passcodes to XXX-XXX-8902 (next code starts with: 2)

Passcode or option (1-2): 1
Success. Logging you in...
Last login: Mon Aug  9 10:40:02 2021 from ip24-255-19-117.tc.ph.cox.net
This is a bastion host used to access the rest of the RT/HPC environment.

Type "shell" to access the job submission hosts for all environments
-----
[cmhyett@gatekeeper ~]$ puma -X
Last login: Mon Aug  9 14:06:13 2021 from gatekeeper.hpc.arizona.edu
***
The default cluster for job submission is Puma
***
Shortcut commands change the target cluster
-----
Puma:
$ puma
(puma) $
Ocelote:
$ ocelote
(ocelote) $
ElGato:
$ elgato
(elgato) $
-----
(puma) cmhyett@wentlettrap:~$
```

- In either case, to submit jobs, one uses the very pervasive (and well documented) slurm toolchain
- <https://slurm.schedmd.com/documentation.html>
- <https://public.confluence.arizona.edu/pages/viewpage.action?pageId=93160866>



The best way to learn is to get your hands dirty!

- https://uarizona.service-now.com/sp?id=sc_cat_item&sys_id=68c285d1db7328109627d90d689619ab
- <https://public.confluence.arizona.edu/pages/viewpage.action?pageId=93160866>
- <https://ood.hpc.arizona.edu/pun/sys/dashboard>