

OAK RIDGE National Laboratory

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Experimental Computing Laboratory (ExCL) Monthly Meeting

PRESENTED BY

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Advanced Computing Systems Research Section

U.S. DEPARTMENT of ENERGY

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A quick usage note

In this document, when you see a hyperlink (green-highlighted underlined text, you can hit ctrl-click on that hyperlink to open it. For example: ExCL Documentation Home

Those of us who Powerpoint on Mac don’t see the hyperlink note on hover.

[TIL: Steve]

Policy Changes — High-utilization Systems

ExCL resources are seeing much higher utilization as our user base grows and more work is being done in the AI space. Unfortunately, this has led to resource contention. We have applied the following policy change on faraday, hudson, and maxwell:

- Popular accelerator systems will be restricted to slurm access for both interactive and the already supported batch access. This allows finer-grained allocation policies (e.g., allocate based on how many GPUs you need) and ease off-hour exclusive allocations when needed.
    - On these systems, the pam_slurm_adopt module will be used to limit SSH access to users who have a Slurm allocation on the node. Additionally, the SSH session will be constrained to the same resources as were allocated.
- See Slurm | ExCL User Docs for the updated Slurm documentation.

  Example srun commands to allocate resources and connect to the systems:

```
srun -p nvidia --gres gpu:P100:2 --mem 128G -c 16 --pty bash

srun -p nvidia -w hudson --exclusive --pty bash
```

- See Primary Usage Notes for notes on recommended places to run jobs.

External Login Changes

The Department of Energy has mandated multi-factor authentication for ssh and web services (such as thinlinc) accessible from outside of the ORNL network envelope. To set this up:

1. Access login.excl.ornl.gov via ssh using a terminal emulator or a well-behaved ssh client like `putty`.
2. Receive a QR prompt *You will only receive this once*
3. Configure Google/Microsoft/FreeOTP authenticator using the QR prompt
4. Use the authenticator-generated single use time-limited key as your password into ExCL.

External Login Changes (2)

- If your attempt to set up an OTP authentication fails *on the first try*, you will need to request that ITSD reset your OTP. Make sure that the solution center understands that this is for Open Research OTP authenticator reset and make sure you specify your UID in the request.
- An interface at `login-int.excl.ornl.gov` allows ssh login without a authenticator OTP, but is not be accessible from outside ORNL. If your OTP set up fails, you can still get access this way (goes the ExCL login node) from on site hosts and from the Global Protect VPN. This will be redirected to the usual login node address when we have addressed some SSHD configuration issues.
- With the appropriate port forwarding in your .ssh/config file, vscode and thinlinc will continue to function as before. ThinLinc sign-in also now uses OTP.

External Login Changes (3)

- SSH keys will still be supported for on-site login (and this is the preferred approach for SSH access). SSH keys will be disabled for off-site login access.

- ITSD documentation for a similar facility is in the ITSD knowledge base at ITSD Open Research OTP. Note that the text about bastion hosts does not apply - the login node is our bastion host.
  - If you cannot see this, let us know and we will incorporate this text elsewhere.

`excl-help` changes

ExCL has discontinued the use of the Freshdesk application for ticket management. We do not derive enough benefit from Freshdesk to make the mandatory conversion to to a paid subscription (free subscriptions have been discontinued)

- Our primary ticketing site will be https://www.excl.ornl.gov/support-request/, which is also easily accessible from www.excl.ornl.gov and clicking on the Support Request tab. This sends us the request via email and feeds into todoist for tracking. All references throughout the documentation have been updated
- The excl-help@ornl.gov mailing list will continue to be a mechanism to communicate with ExCL staff
- There will be no change in the Slack group and informal contacts are always welcome

noback deprecated

- If you don't have a /noback/*userId* directory on the login server, this does not apply to you. Next slide, please.
- Several users still have files in the old noback nfs hierarchy. This was initially deployed as a way to bypass the (then capacity limited) tape backup system.
- ORNL has replaced the tape back system with one with much larger capacity. All home directories are backed up to tape for disaster recovery purposes. The noback directories were never so backed up this way (thus their name).
- Remember that your home directories are snapshotted hourly (see ~/.zfs/for your snapshots – remember snapshot times are in UTC) and duplicated to a hot spare file server (ancient but still works).
- If you do have such a directory, ExCL systems engineering staff will be contacting you to assist you in moving it to your home directory hierarchy.

Questions/Projects/Comments/Discussions

- Accessing cgroup resource limit counters for login limits.
    - Users are now able to view their resource use and limit counters using `login-quota-check`.
    - See Access to ExCL # Login Server Quotas | ExCL User Docs.