



pawsey

Supercomputing User Training



Module 2: Logging In

Pawsey Training Series

Supercomputing User Training

1. Supercomputing Introduction
2. Logging In
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4. Moving Data In and Out
5. Using Software Modules
6. Using Software Containers
7. Accounting Model Overview
8. Job Scheduling Overview
9. Running Jobs
10. Testing Job Runs
11. Managing Project Data

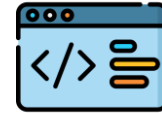
Outcomes for this Module

- Describe what remote access means
 - Describe suitable uses of the login nodes
 - Login into Setonix
 - List and describe security best practices for login
- ✓ Prerequisite knowledge: **Bash shell basics**

Watch for These Signs!



Definition of new concepts



Hands-on coding (demo)



Best practices



Exercises and solutions



Warnings (bad practices)



Links to user documentation



Logging In



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Remote Access to a supercomputer



Remote Access

Accessing a remote (physically distant) computer using your local computer, through the Internet.

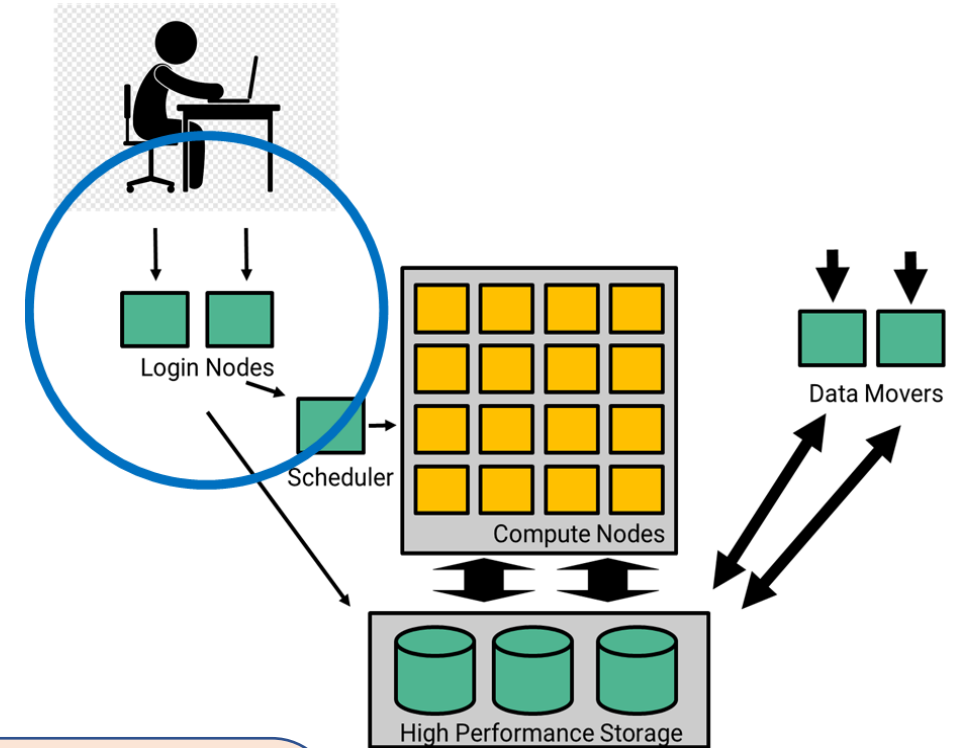


Command Line Interface

A type of interface to use a computer, that requires the user to type textual commands (and read their outputs) using a shell prompt.

Remote Access to Setonix

- Primary access to Setonix is remote, using a command line interface
- Uses dedicated Login Nodes
- Enables “administrative” work
 - Familiarise with the supercomputer
 - Browse and organise your directories and files
 - Setup analyses and simulations
 - Submit analysis/simulation jobs
 - Check results



Do not run programs nor transfer data on the login nodes

Be mindful. Login nodes are designed for lightweight tasks, and shared across 100s of users.

Login to Setonix



Time for the first DEMO!

```
username@pop-os: ~  
username@pop-os:~$ ssh username@setonix.pawsey.org.au
```

- Use **ssh** command in a shell window
 - Setonix: `ssh username@setonix.pawsey.org.au`
 - Topaz: `ssh username@topaz.pawsey.org.au`
 - Garrawarla: `ssh username@garrawarla.pawsey.org.au`
- Recommended shell programs
 - For Windows, use **MobaXterm** ([download, portable edition](#))
 - For Linux, use **xterm** (preinstalled)
 - For macOS, use **Terminal** (preinstalled) or **xterm** ([download, XQuartz](#))



More details @
• [Logging In](#)





EXERCISE: Log In

1. Login into Setonix via ssh:
 - `ssh username@setonix.pawsey.org.au`
 - Training username (or your own if applicable)
 - Type the password carefully. It will not be displayed
2. Say “Hi!” to the Quokka!
3. Have a look at the “message of the day” announcements



EXERCISE: Explore

1. What is the name of the login server? (tip: use the `hostname` command)
2. What is the current directory at login?
3. What does it contain?
4. What's the value of the shell variable `$HOME`?
5. What's the value of the shell variable `$MYSCRATCH`?
6. What's the value of the shell variable `$MYSOFTWARE`?





OUTPUTS: Explore

```
$ hostname  
setonix-0X  
  
$ pwd  
/home/username  
  
$ ls  
bin  
  
$ echo $HOME  
/home/username  
  
$ echo $MYSCRATCH  
/scratch/project-id/username  
  
$ echo $MYSOFTWARE  
/software/projects/project-id/username
```

- Four login nodes on Setonix, users assigned with round robin
- Not much in the HOME by default
- For more details on using the various filesystems, see **User Training 03: Filesystems Overview**

Common Login Problems

- **Forgot password**

Self-service reset <https://support.pawsey.org.au/password-reset/>

- **Blacklisted due to too many failed login attempts**

This is a security precaution.

Ensure passwords are entered carefully.

Contact the helpdesk: <https://support.pawsey.org.au/> (user support portal)

Provide your username, the cluster you are attempting to log in to, and the time of the last failed attempt

- **Scheduled maintenances**

Check your email or

<https://support.pawsey.org.au/documentation/display/US/Maintenance+and+Incidents>

Be Secure while Accessing Setonix



Consider using SSH key authentication

This method can increase security of your account, compared to using a password. See next slide.



Do not share your account

Account sharing violates the [Conditions of Use](#). The project leader can invite others to the project.

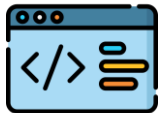


Do not provide your password

Do not provide your password to anyone – not even in help desk tickets!

Using SSH Key Authentication

- Can increase the security of your account
- Always add a passphrase when creating SSH keys
- Usage can be automated via SSH configs (see user documentation)



Demo: SSH keys

```
$ ssh-keygen -t ecdsa -b 521 -f ~/.ssh/pawsey_example  
[ create passphrase, enter twice ]  
$ ssh-copy-id -i ~/.ssh/pawsey_example.pub username@setonix.pawsey.org.au  
  
$ ssh -i ~/.ssh/pawsey_example username@setonix.pawsey.org.au  
[ passphrase is requested ]
```



More details @

- [Logging In with SSH Keys](#)

Remote Access with a Graphical User Interface

What to if you need to graphically visualize outputs from Setonix?

- For small outputs and simple GUI applications (for instance, gnuplot), add special option to ssh command
 - For Linux: `ssh -X username@setonix.pawsey.org.au`
 - For macOS: `ssh -Y username@setonix.pawsey.org.au`
 - For Windows (MobaXTerm): enable X11 Forwarding option in SSH Configuration Panel
- For large-scale visualizations, use Pawsey Remote Visualisation service
 - <https://remotevis.pawsey.org.au/>



More details @

- [Use Graphical \(GUI\) Programs with X over SSH](#)
- [Visualisation Documentation](#)

Summary



- Terms we learnt
 - Remote Access
 - Command Line Interface



- Tasks we learnt
 - Login into Setonix: `ssh username@setonix.pawsey.org.au`



- Do not run programs nor transfer data on the login nodes
- Do not share your account
- Do not provide your password



- Consider using SSH key authentication

Getting Help



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Getting Help

<https://support.pawsey.org.au>

Pawsey has extensive [User Support Documentation](#).

Areas covered include:

- System user guides
- Knowledge Base
- Pawsey-supported software list
- Maintenance logs
- Policies and terms of use

For further assistance, contact the help desk, via [User Support Portal](#).

Help us to help you by providing details, such as:

- Which resource
- Error messages
- Location of files
- SLURM job id
- Your username if having login issues
- Never tell us (or anyone) your password!

Become a Pawsey Friend and receive our Newsletter:

<https://pawsey.org.au/pawsey-friends/>



Q & A Session



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