TSCC 101:
Logging On to TSCC

By: Mary Thomas

Basic Information

- TSCC User Guide:
  - https://www.sdsc.edu/support/user_guides/tscc.html
- You must have a TSCC account in order to access the system. To obtain a trial account:
  - https://www.sdsc.edu/services/hpc/tscc-purchase.html
- Online repo for companion tutorial/webinar information:
  - https://github.com/sdsc-hpc-training/tscc-tutorials/tree/master/tscc-101-Oct19
  - You should be familiar with running basic Unix commands: see the getting started tutorials at:
  - https://github.com/sdsc-hpc-training/tscc-tutorials/tree/master/tscc-101-Oct19/2-tscc-getting-started
- For TSCC consulting, contact TSCC support: tscc-support@ucsd.edu
- More training events listed at SDSC:
  - https://www.sdsc.edu/education_and_training/training.html

Obtaining a TSCC Free Trial Account

- **See:** https://www.sdsc.edu/services/hpc/tscc-purchase.html
- **For a free trial, email tscc-info@ucsd.edu and provide the following information:**
  - Name
  - Contact Information
  - Department
  - Affiliation: UCSD (grad student, post-doc, faculty, etc.), or Other
- **Trial accounts are 250 core-hours valid for 90 days.**
- **Username and password depend on your organization:**
  - UCSD Active Directory password
  - Other: use SSH Key with password

Using SSH to Connect to TSCC

SSH: Secure Shell Protocol:
https://en.wikipedia.org/wiki/Secure_Shell

Thin Clients

ssh –X tscc-login.sdsc.edu

**Client**   **Host**
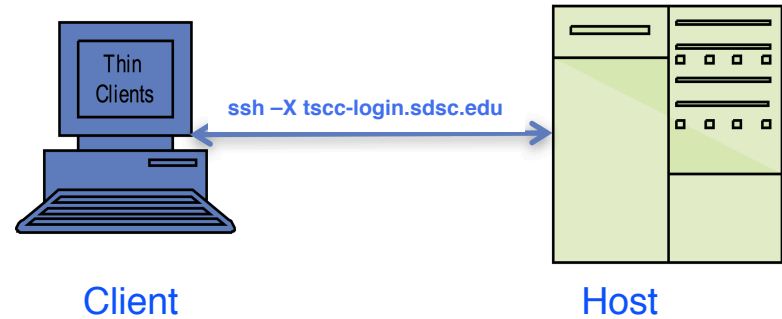
- Host: tscc-login.sdsc.edu
- Client: software running on a laptop, cluster, or computer:
  - Linux/Mac OS: use terminal app/window + ssh command.
  - Windows OS: use ssh applications like Putty, Cygwin
    - http://www.chiark.greenend.org.uk/~sgtatham/putty/
- Log in using local SSH command with your
  - username assigned by TSCC admin
  - UCSD/AD pwd; Other use SSH Key with password

SDSC SAN DIEGO SUPERCOMPUTER CENTER

UC San Diego

HPC/Cluster Architecture

HPC clusters typically have a 3-tier architecture:

- **Login node** (or nodes) for compiling, data management, job submission.

- **Middleware server** to manage jobs to be run on the nodes.

- **Compute nodes** where computational work is done.

Cluster: compute nodes

Switch

Login node

Internet

Users, submitting jobs
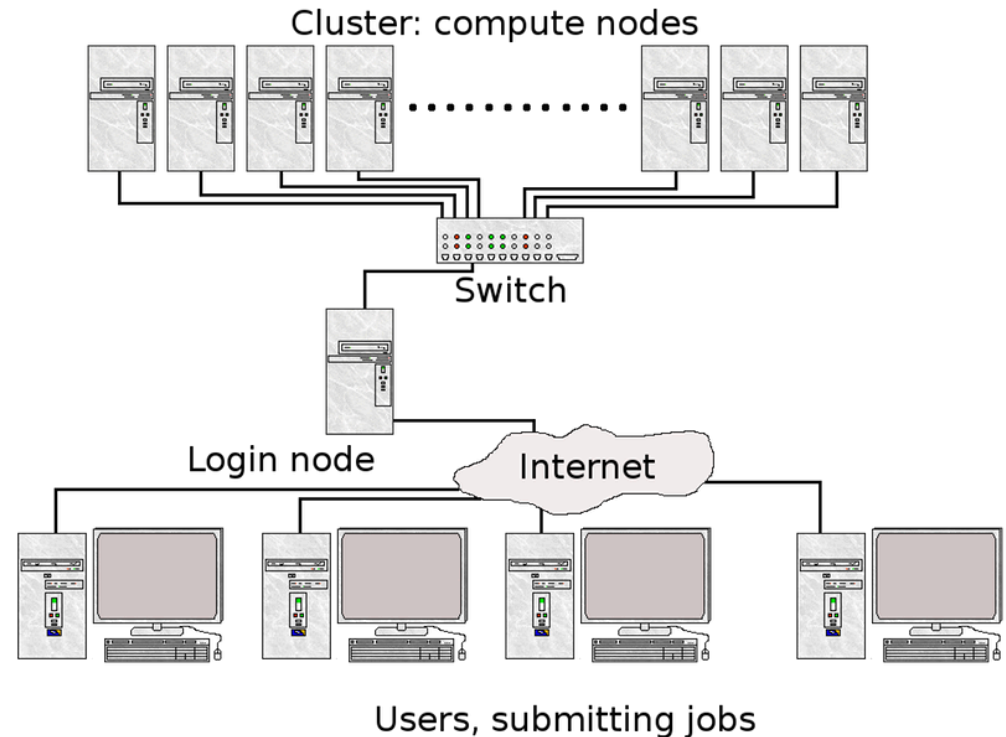
- When you login, you are on the login nodes, not the compute nodes
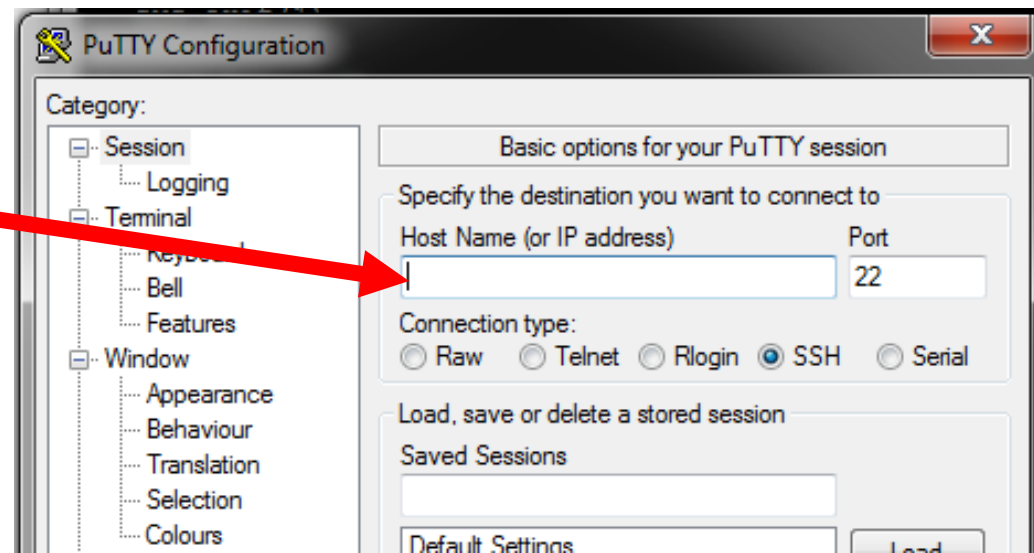- TSCC has multiple login nodes, which all see the same HOME directory and files

Logging onto TSCC

Mac/Linux:

`ssh username@tscc-login.sdsc.edu`

Windows (PuTTY):

tscc-login.sdsc.edu

Logging onto TSCC (from mac)

```
[mthomas@gidget:~/.ssh] ssh -X tscc-login.sdsc.edu
Warning: No xauth data; using fake authentication data for X11 forwarding.
Last login: Fri Jan 25 18:14:59 2019 from wireless-169-228-90-97.ucsd.edu
Rocks 6.2 (SideWinder)
Profile built 17:04 06-Mar-2018

Kickstarted 17:56 06-Mar-2018
TSCC Cluster Login Node

    Welcome to

  _____  ____  _____  _____
 /_   __/ /  __/ /  ___/ /  ___/
  /  /   _\  \ / /__  / /__
 /_/    /___/  \___/  \___/


For information on using the TSCC, please visit http://idi.ucsd.edu/computing
By using the TSCC, you agree to the Acceptable Use Policy found on
http://idi.ucsd.edu/_files/TSCC-Acceptable-Use-Policy.pdf

**** Files on /oasis/tscc/scratch are not backed up and are subject to ****
**** deletion after 90 days.                          ****

**** Do not submit more than 2000 jobs/array tasks to the queues at   ****
**** once; too many queued jobs degrade the scheduler's performance.  ****

For information on using the TSCC, please visit http://idi.ucsd.edu/computing
By using the TSCC, you agree to the Acceptable Use Policy found on
http://idi.ucsd.edu/_files/TSCC-Acceptable-Use-Policy.pdf
```

Command Line Jobs

- *Do not run parallel jobs on the login nodes - even for simple tests*.

- These nodes are meant for compilation, file editing, simple data analysis, and other tasks that use minimal compute resources.

- Even if you could run a simple test on the command line on the login node, full tests should not be run on the login node because the performance will be adversely impacted by all the other tasks and login activities of the other users who are logged onto the same node.

- As an example a gzip process was consuming 98% of the CPU time:

```
[user]$ top
...
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
19937 XXXXX 20 0 4304 680 300 R 98.2 0.0 0:19.45 gzip
```

SDSC SAN DIEGO SUPERCOMPUTER CENTER

UC San Diego