

TSCC Bootcamp: Introduction to Accessing and Running Jobs on the TSCC System

Logging On to TSCC

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Basic Information

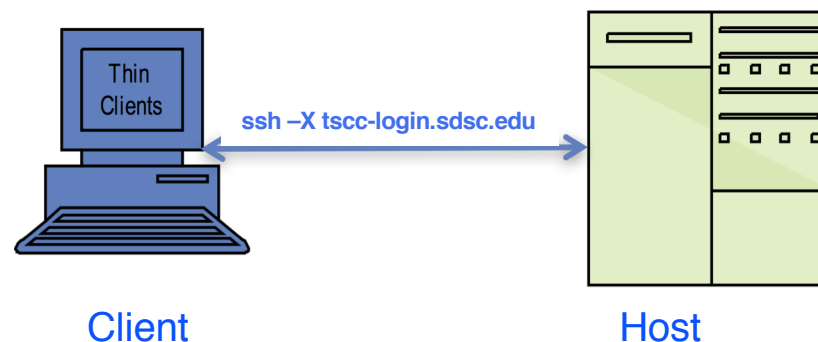
- TSCC User Guide:
 - https://www.sdsc.edu/support/user_guides/tsc.html
- Online repo for companion tutorial/webinar information:
 - <https://github.com/sdsc-training/bootcamps/tree/master/Intro-to-Acessing-and-Running-TSCC-Jobs>
- You must have a TSCC account in order to access the system. To obtain a trial account:
 - https://www.sdsc.edu/support/user_guides/tsc-quick-start.html
- You should be familiar with running basic Unix commands: see the following tutorials at:
 - https://github.com/sdsc-training/bootcamps/tree/master/Intro-to-Acessing-and-Running-TSCC-Jobs/basic_linux_skills
- More training events listed at SDSC:
 - https://www.sdsc.edu/education_and_training/training.html

Obtaining a TSCC Free Trial Account

- For a free trial, email tsc-info@ucsd.edu and provide the following information:
 - Name
 - 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
- **See:** https://www.sdsc.edu/support/user_guides/tsc-quick-start.html

Using SSH to Connect to TSCC

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

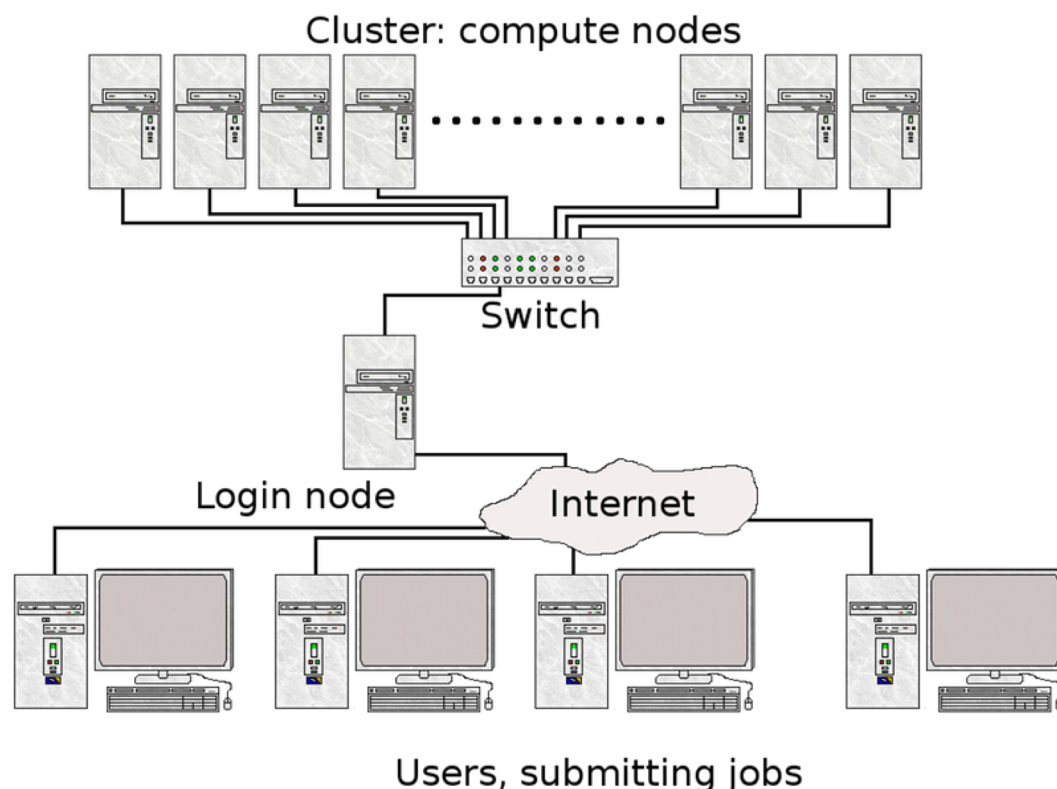


- Host: tsccl-login.sdsc.edu
- Client: software running on a laptop, cluster, or computer:
 - Linux/Mac OS: use terminal app/window + ssh command.
 - Windows OS: use ssh applications like Putty, Cygwin
 - <http://www.chiark.greenend.org.uk/~sgtatham/putty/>
- Log in using local SSH command with your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

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.



- 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

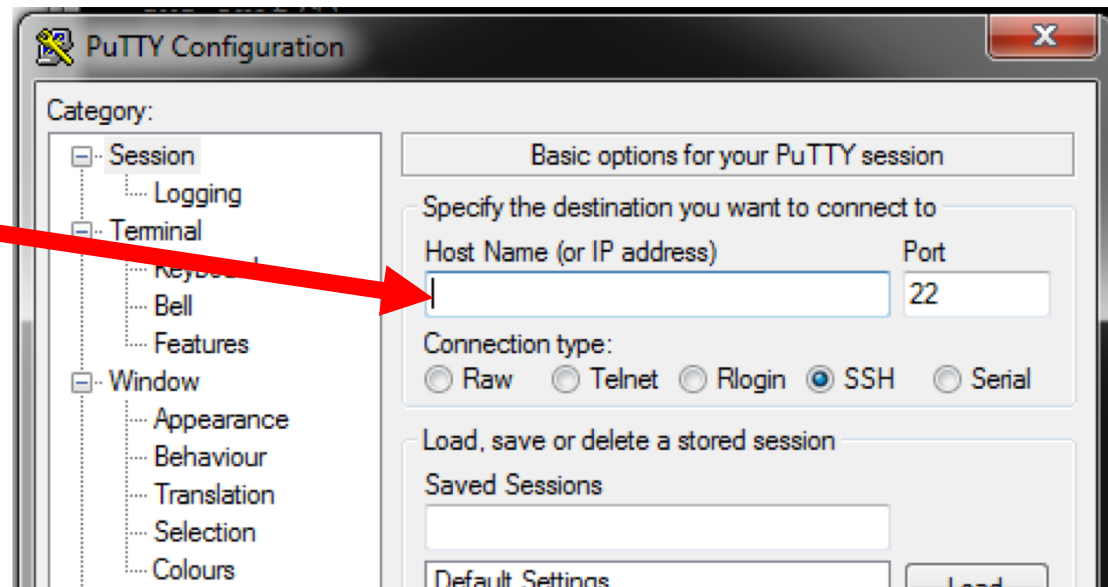
Logging onto TSCC

Mac/Linux:

```
ssh username@tsccllogin.sdsc.edu
```

Windows (PuTTY):

tsccllogin.sdsc.edu

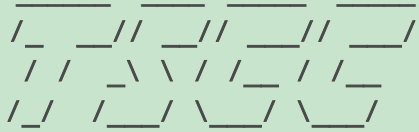


Logging onto TSCC (from mac)

```
[mthomas@gidget:~/ssh] ssh -X tsccln.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/tsccln/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. ****

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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
```