

Homework 1: Report

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April 7, 2024

1. Log into Hummingbird and Lux

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Hummingbird

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!! POLICIES - READ !!
** Failure to adhere to these policies will result in job cancellation. **
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1) JOBS & QUEUES
** YOU MUST USE THE SLURM BATCH SYSTEM TO RUN SOFTWARE **
- 72 CPU core maximum per user
- Always apply time limits to slurm script (#SBATCH --time=)
- For non-exclusive access to a node apply BOTH memory & cpu limits
- Max Time on Instruction/Course queue is 12 hours (enforced)

2) DATA TRANSFERS
- All data transfers can be done directly on hb.ucsc.edu or via Globus

3) HOME QUOTA, SCRATCH & DATA POLICY
- Disk quota per user (home): 1TB
- /hb/scratch is not backed up and data older than 120 days may be deleted
- Data and Backup Policy: https://hummingbird.sites.ucsc.edu/documentation/hummingbird-data-storage-and-backup-policy/

4) GETTING HELP
** Have questions? Need help? Want to speak to an expert? **
- Join the Hummingbird Zoom-in Help Clinic Thursdays at 1PM PDT
- https://ucsc.zoom.us/j/93463299124?pwd=RFZvZzZlYSJlZlNoXzFhRUV6aTZGZz09 (UCSC login required)
- Put in a ticket by emailing hummingbird@ucsc.edu
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** More information at https://hummingbird.ucsc.edu/ **
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** Join us on the Hummingbird-cluster Slack server!! **

Join the community to get real-time support from your admins and collaborators.
https://join.slack.com/t/ucschummingbi-lph3072/shared\_invite/zt-19mbwqvxl-GqguQcumVBLss-nzj0HAYg
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Aliases :
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cd250 - to AM250 Folder
bconf - edit bashrc
rbash - source bashrc
vconf - edit vimrc
c4/v4 compile/run fortran

[Δ HummingBird ~] % whoami
dbuhl
[Δ HummingBird ~] %
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2. Description of a Top500 Machine.

I chose Expanse for the machine to do my report on. I use expanse several times a week so it made sense to become a little more familiar with it. Here are the details.

- Name: Expanse
- Location: San Diego Supercomputing Center
- Number of Nodes, processors per node, total num of processors: 732, 128, 93,696
- Clock Speed of Chips: 2.25 GHz
- Flops/processor, total flops: 4608 GFlops, 431.76 PFlops
- Memory per processor, total memory: 2 GB, 187 TB
- Architecture Type: SIMD, (this really depends on what you are running on it)
- Interconnect Type: Mellanox HDR Infiniband

- Use: Scientific Research, MY RESEARCH, Fluid Dynamics :)
- Anything Special: Its located in California, used to be in the top 200 of machines but its growing a little outdated (EVEN THOUGH IT WAS MADE IN DURING THE PANDEMIC! Its only been 4 years and its been superceeded many times).

3. Describe something you do in parallel.

My routine when I get home is often very similar and it involves me doing things in parallel. Usually the first thing I do is put my backpack down and then turn on my computer. While my computer takes a minute or two to boot up, I press the button on my desk to move it into the standing position, and while the computer boots and my desk lifts up, I take my lunch tupperware to the sink in the kitchen. When I get back the computer is booted and in the position I like. Then I'll put in my password and while the computer brings me to my desktop, I'll put on my headset. Then I open 3 applications all at once. First my terminal, to update any software. Then while its updating, I open Chrome and navigate to my email. Then while my email loads, I go onto Discord and see if I have any new messages. Then I go back to my terminal check if its done, proceed to check my email, and then find something to do.