High Performance Computing: Tools and Applications

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Lecture 6

To check what is running on the Linux system:

```
who
ps # lots of options; see the man page
top
```

The `interactions` function must interface to a parallel force calculation function.

What is a good interface for a *parallel* `interactions` function?

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What is a good interface for a *parallel* `interactions` function?

- Is the function called in parallel or by a single thread?
- What should be the output?

Exercise 6

Submit a pdf file called `ex06.pdf` in a directory called `ex06` (you should create the directory) with the following design and documentation:

- Design and document an interface for a parallel `interactions` function
- Describe how your interactions function will be parallelized and justify your choices
- Log into the Xeon Phi servers and run `ssh-keygen`
- *Due 10 pm, Mon., Sept. 12*

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Since 2005, clock rates have not gone up. Instead, chip manufacturers are building *multicore* processors.

Multicore processors are everywhere.

For the largest supercomputers, power is the main limitation.

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- Software and algorithm complexity needed to exploit the hardware

Accounts on Xeon Phi Servers

- Accounts have been created on `gotham.cc.gatech.edu`
- Accounts will later be created on `joker.cc.gatech.edu`
- Your account name is your GT account id preceeded by `A`, e.g., `Ajdoe8` (this is to avoid a conflict with LDAP)
- What you should do now:
  - log into `gotham` and change your password with `passwd`
  - run `ssh-keygen` with default responses (this is needed in order to create your accounts on the coprocessors)
- When `joker` is ready (you will get an email), repeat the above procedure