

# A Crash Course on Vesta and the ALCF

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# Crash Course Overview

- This crash course will take approximately 25 minutes.
- Get an account and access to an allocation
- Logging into Vesta
- Copying the source files
- Building the code
- Submitting a job and seeing the output



# Getting an Account

- Go to <https://accounts.alcf.anl.gov/accounts/request.php> and click on “Request for an Account”
- Select the project name you want to be a part of
- Select (or type) your project PI's name and email address in the account sponsor fields and then click submit
- Once we receive your account sponsor's approval, we will begin the account creation process
- Once your account is created, we will send you a Cryptocard token to login to the ALCF resources, if needed



# Log into Vesta and copy the source files

\*\* Instructions also available at: <http://www.alcf.anl.gov/~mantrala/>

- `$ ssh username@vesta.alcf.anl.gov`  
Resync Instructions: <https://www.alcf.anl.gov/resource-guides/using-cryptocards>
- `username@vestalac1:~> cp -Rp ~mantrala/hydro .`
- `mantrala@vestalac1:~> cd hydro`
- `mantrala@vestalac1:~/hydro> ls`
- `1d_hydro.c Makefile movie.sh`
- Build the code, and submit the job
- `mantrala@vestalac1:~/hydro> make`  
Command not found error?  
Type: `soft add +mpiwrapper-gcc`
- More info on Compiling and Linking: <https://www.alcf.anl.gov/resource-guides/vesta-compiling-and-linking>
- Run Make again
- `mpicc 1d_hydro.c -o hydro`
- `mantrala@vestalac1:~/hydro> ls`
- `1d_hydro.c hydro Makefile movie.sh`
- `mantrala@vestalac1 :~/hydro> qsub -A MiraCon2013 -q R.mc -n 2 -t 10 hydro`
- `299010`
- Wait for the job to complete, you can watch it by running `qstat`



# See the output

- mantrala@vestalca1 :~/hydro> ls
  - 1d\_hydro.c      step\_0400\_00 step\_1100\_01 step\_1900\_00 step\_2600\_01
  - 299010.cobaltlog step\_0400\_01 step\_1200\_00 step\_1900\_01 step\_2700\_00
  - 299010.error    step\_0500\_00 step\_1200\_01 step\_2000\_00 step\_2700\_01
  - 299010.output   step\_0500\_01 step\_1300\_00 step\_2000\_01 step\_2800\_00
  - hydro            step\_0600\_00 step\_1300\_01 step\_2100\_00 step\_2800\_01
  - Makefile        step\_0600\_01 step\_1400\_00 step\_2100\_01 step\_2900\_00
  - movie.sh        step\_0700\_00 step\_1400\_01 step\_2200\_00 step\_2900\_01
  - step\_0000\_00    step\_0700\_01 step\_1500\_00 step\_2200\_01 step\_3000\_00
  - step\_0000\_01    step\_0800\_00 step\_1500\_01 step\_2300\_00 step\_3000\_01
  - step\_0100\_00    step\_0800\_01 step\_1600\_00 step\_2300\_01 step\_3100\_00
  - step\_0100\_01    step\_0900\_00 step\_1600\_01 step\_2400\_00 step\_3100\_01
  - step\_0200\_00    step\_0900\_01 step\_1700\_00 step\_2400\_01
  - step\_0200\_01    step\_1000\_00 step\_1700\_01 step\_2500\_00
  - step\_0300\_00    step\_1000\_01 step\_1800\_00 step\_2500\_01
  - step\_0300\_01    step\_1100\_00 step\_1800\_01 step\_2600\_00
- mantrala@vestalac1 :~/hydro> make movie
- See graphical output!



## Coming up next...

- Critical Flags, Variables, and Other Important ALCF Minutiae - Jini Ramprakash, ALCF
- Data Transfers in the ALCF - Robert Scott, ALCF

