ECE574: Cluster Computing – Homework 1

Due: Thursday 19 January 2017, beginning of class

Go to the Top500 Supercomputer site www.top500.org and research the background of supercomputer #13 on the November 2016 list.

Make note of:

1. Location (Country) United States

2. Processor Architecture (x86/power/ARM/etc) x86

3. Processor Type Intel Xeon E5-2680v2

4. Total number of Cores 241108

5. RMax/RPeak 5951550/7107148.8

6. Power Consumption 4407

7. Any accelerators (GPUs, XeonPhi, etc) none

8. Any interesting info you can find on this machine (use sources other than top500.org)

In Wikipedia, it has some different information, it said that in November 2015 it is ranked the world’s 13 fastest computer on TOP500.

It is a petascale supercomputer housed at the NASA advanced Supercomputing(NAS) facility at NASA.

<https://www.nas.nasa.gov/hecc/resources/pleiades.html>

At NASA website, there is a detail of the Pleiades Supercompter having the GPU and co-processors. And the total CPU cores is a little different.

* Total CPU cores: 246,048
* 2 racks (64 nodes total) enhanced with NVIDIA graphics processing units (GPUs)
  + 184,320 CUDA cores
  + 0.275 Pflop/s total
* 1 rack (32 nodes total) enhanced with Intel Xeon Phi co-processors (MICs)
  + 3,840 MIC cores
  + 0.064 Pflop/s total

Please bring your results to class on Thursday, you may be asked to discuss your findings during class.