

HPC Survey

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Survey

- The last day of class will be a survey of different High Performance Computing (HPC) technologies and Architecture related security vulnerabilities.
- I will present on the topics of MPI, OpenCL, and RowHammer.
- Last day of class is April 23.
- You will present on Monday April 23, 2019.

Your Choice

HPC

- Nomad
- Hadoop
- Spark
- Chapel
- UPC
- Charm++
- GASNet
- Condor
- CORBA
- ARMCI

Security

- Buffer Overflow
- Return Oriented Programming (ROPping)
- Rootkits
- Cache Side Channel Attacks
- There are others, please email me an idea if you wish to present something else.

HPC Questions to Answer

- What is it?
- How does it work?
- How does it help HPC?
- How does it relate (or use) MPI, BLAS, and OpenCL?
- Why is the software package useful over (or in conjunction with) MPI/BLAS?
- How popular is it? Who uses it?

Security Questions to Answer

- What is it?
- What type of vulnerability is it?
- How does it work?
- How does architecture play into the issue?
- Is there a way to patch the problem? Are there work arounds?
- How concerned should we be?

Presentation

- 1 person per topic
- 10 - 15 minutes
- Monday April 23, 2019
- Topic selection is FCFS, starting now.
- You may take slides from the internet (like I have done with MPI, OpenCL, & RowHammer.) Be sure to site!