

# Sprint Report #2

November 9, 2015

## Team Overview

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### Project

ARM Cluster

### Members

- Andrew Hoover
- Samantha Kranstz
- Christine Sorensen

### Sponsor

Dr. Christer Karlsson

### Meeting Times

Tuesdays and Thursdays at 1:00pm

## Sprint Overview

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During this sprint, our team first decided to use the ODROID devices instead of Raspberry PIs based on our findings from sprint one. We roughly planned out our budget for ethernet cables, the switch, various USB cables, power strips, and the devices themselves and extra memory for them. At this stage, we did not choose exactly what we would buy, but we narrowed our budget enough to know that the number of devices we could have without going over the limit set by our sponsor was eight. Dr. Karlsson then ordered seven more ODroids, an eight port switch, eight ethernet cables, and one USB to RJ45 device to benchmark USB to ethernet speeds. We encountered an issue where the order was backordered, and we did not receive the devices until over two weeks later. Once we did get them, we benchmarked the speed over ethernet between two devices through the switch, and the speed when one device was using a USB to RJ45 to connect to the switch. We also attempted to benchmark the direct connection between RJ45 on one device connected directly to the ethernet of another device, but found that we would need a crossover cable. We concluded our sprint by setting up all eight devices by installing MPI and giving them static IP addresses on the network over the switch.

## Setback

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The seven ODROIDs ordered were backordered. Therefore, they did not arrive until after Sprint 2 was over.

## Deliverables

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- Budget
- Hardware Test
- Switch Benchmark
- Ethernet Benchmark

- USB to Ethernet Benchmark
- MPI Code
- Message-Passing Protocol

## Activities

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### Team

- Decided on using the ODROID
- Order ODROIDS and selected supplies

### Andrew Hoover

- Benchmarked:
  - Switch
  - Ethernet
  - USB to Ethernet
- Tested hardware
- Tested MPI code on ODROIDS

### Samantha Kranstz

- Researched supplies
- Finalized budget
- Researched patents and other clusters

### Christine Sorensen

- Designed message-passing protocols
- Sampled MPI code

### Work that is carried over into Sprint 3 is as follows:

- Design cluster
- Build cluster
- Benchmark cluster
- Test message-passing

## Backlog

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- Build the cluster
- Code for the cluster
- Benchmark the cluster
- Experiment with different topologies
- Create a new mode of communication

## Goals

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- Go to research symposium
- Prepare Design Fair