

Revamp of High Energy Physics Laboratory's Computer Systems

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Milestone 5
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Compute
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Muon
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Milestone 5 Progress

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Task	Progress	Notes
Continue to Care for Existing MTS	40%	improve upon provided instructions coax AMORE into building NAS-0 and SE still must be included helping out with general problems as they arise
Get Info for MTS Instructions	50%	
Work on MTS Dev.	50%	
Integrate Nodes into Cluster	100%	
Assist Researchers	100%	

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- Assist the researchers with their computer issues.
 - Discovered that many of the lab's computers have an unfortunate RAID configuration.
- Optimize the researchers' workflows.
 - Wrote some brief scripts to enhance data processing.

Compute Cluster

- The nodes and SE have been integrated into the cluster!
 - except for one uncooperative node...
- NAS-0 still needs to be integrated.
- The OS drive group is not showing up in the Anaconda installer.

```
[root@uscms1 ~]# rocks list host
HOST      MEMBERSHIP  CPUS  RACK  RANK  RUNACTION  INSTALLACTION
uscms1:    Frontend    8     0     0    os         install
compute-1-1: Compute    8     1     1    os         install
compute-1-2: Compute    8     1     2    os         install
compute-0-0: Compute    1     0     0    os         install
compute-2-0: Compute    8     2     0    os         install
compute-2-1: Compute    8     0     2    os         install
compute-2-2: Compute    8     0     3    os         install
compute-2-3: Compute    8     0     4    os         install
compute-1-3: Compute    8     1     3    os         install
compute-1-0: Compute    8     1     0    os         install
compute-1-4: Compute    8     1     4    os         install
compute-1-5: Compute    8     1     5    os         install
compute-1-6: Compute    8     1     6    os         install
compute-2-4: Compute    8     0     5    os         install
compute-1-7: Compute    8     1     7    os         install
compute-1-8: Compute    8     1     8    os         install
compute-2-5: Compute    8     0     6    os         install
compute-2-6: Compute    8     0     7    os         install
compute-2-7: Compute    8     0     8    os         install
compute-2-8: Compute    8     0     9    os         install
nas-0-0:   NAS Appliance 4     0     0    os         install
compute-1-9: Compute    8     1     9    os         install
compute-0-10: Compute    8     0    10    os         install
```

Existing MTS

- The FEC with the faulty firmware is still broken.
 - We obtained the firmware version that was supposed to work with the FEC.
 - While the firmware installation was successful, the FEC still failed to function.
- Another, separate FEC has decided to boycott ethernet.
- The MTS researchers have been instructed to try to get the remaining, functional parts of the detector operational rather than continue trying to repair the entire thing.

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- Attempted to build AMORE from source
- Makefile 'Makefile.arch' was not found during build configuration, but we did find the file in another directory, and made AMORE reliant on that Makefile instead.
- Build got further, but a few header files weren't found. The configuration seems to not know the proper location to find some files.
- Continued attempting to get the previous build of AMORE working, by manually changing dependencies to our new version of root.

Documentation

- Documentation is key to the long-term success of the project.
- We have been taking extensive notes and recording everything we have been doing.
- These logs will be compiled into proper manuals.
 - step-by-step instructions
 - troubleshooting

Constructing a ROCKS Cluster

Construct a CentOS 7 Machine to Interface
with a Muon Tomography Station

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Task	Josef	Eric	Ryan
Polish Cluster Documentation	10%	10%	80%
Polish MTS Documentation	40%	20%	40%
Create MTS Automation Script	60%	10%	20%
Integrate Remainder of Cluster Components	10%	10%	80%
Run Jobs on Cluster	10%	10%	80%
Create GEM computer Backups	10%	80%	10%
Assist Researchers	10%	80%	10%

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