A Look at The CMSG: HPC at the University Of Eldoret

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October 14, 2013

Outline

Introduction

1. The University Of Eldoret currently has one of the only dedicated
   HPC facilities of its kind in the country in academic institutions

2. All the currently installed capacity is at the disposal of the CMSG

3. Facilities and activities are oriented towards interdisciplinary cooperation

Who Uses our resources?

1. Open to Local researchers and graduated students affiliated to the CMSG .
2. Access can be granted to outside users working on related/relevant work .
3. Currently utilized to a great extent by members of the group.
4. Codes utilized include Quantum Espresso, Casino, and recently Yambo.
5. Includes individuals from Physics and Chemistry.

Research Focus

1. Hard Materials
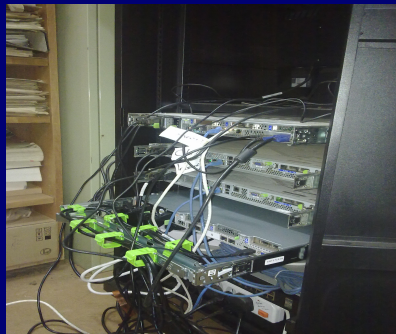2. Materials for green energy applications

Machines

1. Sun Servers.
2. Dedicated storage.
3. *Dedicated power backups.*
4. 6GB RAM per node,

Off-hand Usage Stats

1. Job Scheduling, resource allocation done with Maui+Torque.
2. <300 Jobs / Year $\leftarrow$ is increasing.
3. 8-16 Cores per job
4. Minimal Storage Needs

Recently Acquired (2 months timeline)

1. Oracle Sun server X3-2 (4170-M3).
2. Dedicated Power backups.

Whats on Our minds For The Future

There a plans (Long Term) to have a center of excellence in computing research. To achieve this there is a need to facilitate More interdisciplinary Cooperation, this ideally will need more infrastructure,

1. Compute nodes.
2. Faster network (Infiniband?)
3. Larger and Faster Network Storage.
4. Support more codes (Like VASP, and others).

Other Accessory Resources

1. Paired i7 machines providing 16 cores. Accessible over the Network.
2. User desktops, all run linux.

What makes it Hard

1. Power Failure:
2. Personnel.

The people (and Institutions) that made all it possible

- G. O. Amolo
- N. W. Makau
- R. Koech (Campus ICT employee)
- Edmund Ochieng (left, now in industry)
- Victor Kirui
- Patrick Mwonga
- Winfed Mulwa
- Denis Magero
- Mike Atambo
- Carol Namarome
- Funding from NACOSTI GOK (2009-), ENSF (2013 grant), TWAS, ICTP.

Successful Events

1. ASESMA 2012
2. National Physics Forums