



RAL Computing - Issues



Chris Rogers,
ASTeC,
Rutherford Appleton Laboratory

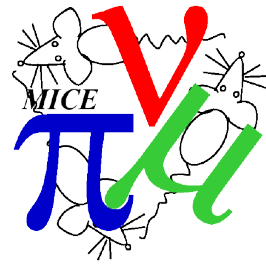


RAL Computing Issues



- Features
 - Site wide network outage
 - Christmas PPD rack room outage
 - This weekend
- Description of systems and services running at RAL (not MICENet)
 - Configuration Database (CDB) hot backup/slave
 - micewww.pp.rl.ac.uk and redmine
 - MICE bastion (mousehole)
 - EPICS archiver
 - EPICS gateway
 - Elog
 - Micehall web cams
 - Networking (facilities-users)
- Also
 - Printer passwords

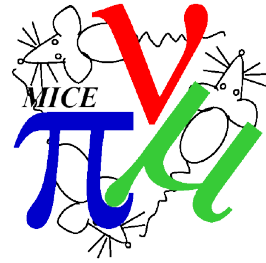
System Prioritisation



- Systems prioritised according to:
 - High – used for offsite access to operations
 - Medium – used for development work
 - Low – used for development work; but a workaround exists
- Service prioritisation
 - Mousehole – high
 - EPICS gateway – high
 - Elog – medium
 - Redmine and micewww – medium
 - Config DB hot back up and web service – medium
 - Config DB test server – low
 - MAUS test servers – low
 - MICEHall web cams – low

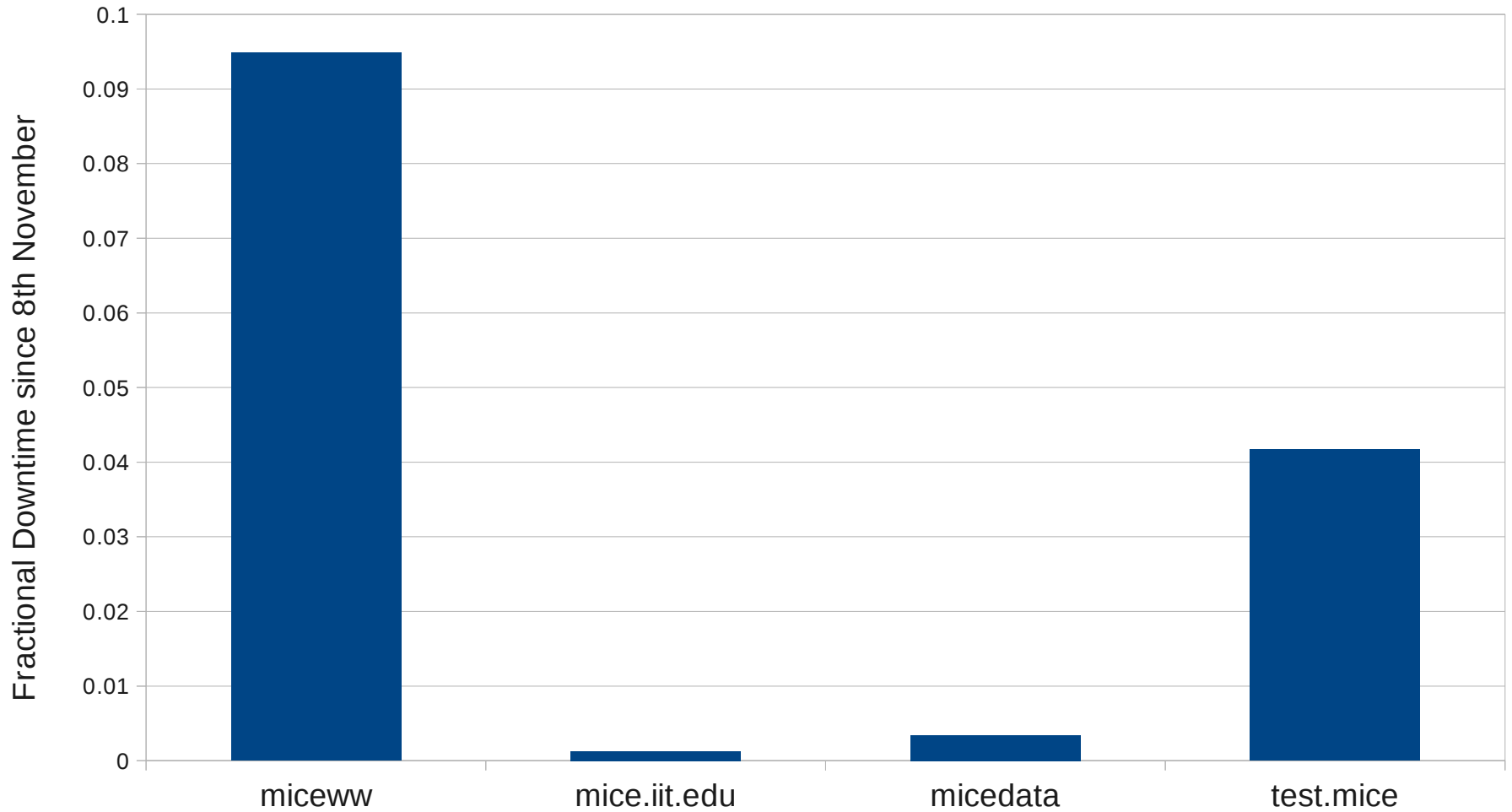
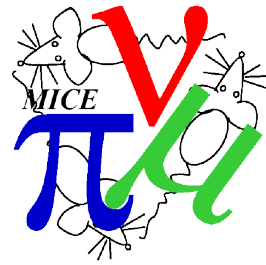


Features

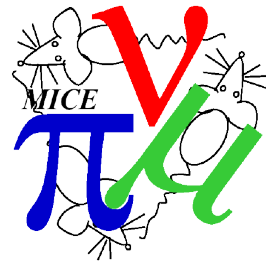


- Site wide electrical failure (date?)
- Site wide network outage due to fire in RAL rack room
8th November
 - Rogers started monitoring server uptime
 - > 9 hour downtime
- PPD rack room outage 26th December – beginning of
January
 - Air conditioning failure in rack room
 - RAL shut over christmas
 - 7 day downtime
- Weekend 16-17 February (tomorrow)
 - Electrical tests in Atlas building switch room
- Several systems failures, of which most significant was
the outage over christmas

Downtimes

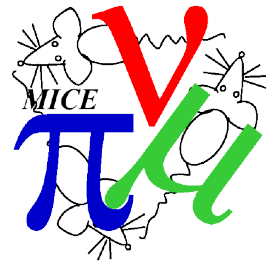


PPD rack room outage (1)



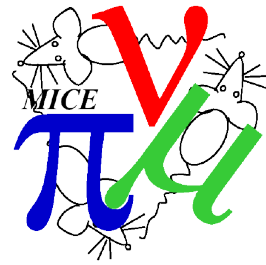
- RAL closed December 24th – January 2nd
 - ISIS goes off for radiation cooldown
- 11:37 25/12/12: Rack room air conditioning failed
- 14:00 25/12/12: RAL estates fixed air conditioning; rack room temperature stable
- 14:00 26/12/12: Air conditioning again failed; Chris Brew took decision to shutdown all linux services
- 15:00 30/12/12: Chris Brew attempted to restart linux services; MICE services failed to restart
- 02/01/13: Henry Nebrensky find failed disk on hepInm067; replaces disk
- 08/01/13: Antony Wilson resolves failure in postgres

PPD rack room outage (2)



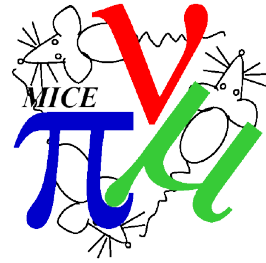
- Successes:
 - All data recovered from disk failure
 - Better-than Service Level Agreement
 - Next Business Day or 2 weeks on these services
- Failures:
 - No plan/awareness for AFC tests and SS tests
 - Magnet tests were not considered properly as “operations”
 - MOM not informed
- Two wash-up/review meetings were held to understand how we improve services
 - Documented at
 - http://micewww.pp.rl.ac.uk/projects/operations/wiki/PPD_MICE_computing_outage_christmas_2012

System Prioritisation (2)



- Low priority systems remain as-is
- Medium priority systems will be placed on Virtual Machine infrastructure
 - Hardware triply redundant
 - Physical location in two rack rooms - (tbc)
- High priority systems will be placed on Virtual Machine infrastructure and we can envision an additional layer of redundancy
 - Mousehole could have PPD bastion and RAL bastion
 - EPICS Gateway - needs some investigation as to how a backup can be provided
- RAL PPD provides at least NBD service for hardware and OS
- MICE provides at least NBD service for software and services
 - Needs an expert list, NBD call out list, expert training
 - Note: this is for vacation cover etc
 - We can consider covering RAL holidays, depending on operational need

Per System - eLog



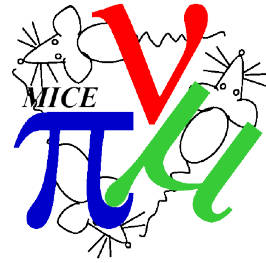
- eLog master should be hosted on MICENet
- Local mirrors for other operations e.g. SS tests
- This should be set up as a set of master-master systems
 - So each is modifiable and replicates to other systems when network available
 - Should be automated on an e.g. nightly basis

Per System - Mousehole



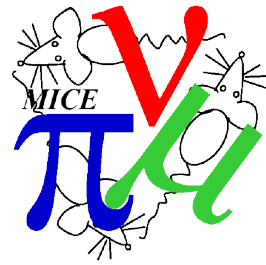
- Mousehole goes onto HyperV
- PPD bastion as an alternative (also hosted on HyperV)
- Investigate RAL bastion as a backup

Per System – EPICS Gateway



- EPICS gateway should be moved onto HyperV
- Need better documentation/local expertise to understand this service

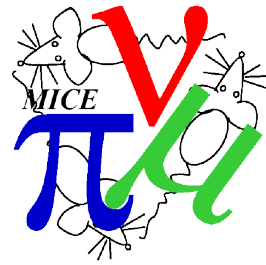
Per System - ConfigDB



- ConfigDB hot swap/web service goes onto HyperV
- Need to test that this is still visible to MICENet
 - ConfigDB web service is the system by which MAUS and non-RAL locals access CDB data
 - ConfigDB hot swap is the backup for CDB server on MICENet
 - Same DB and postgres service

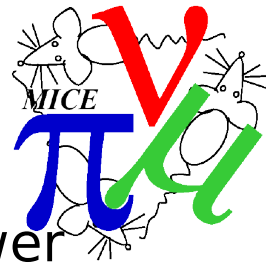


Per System - Redmine



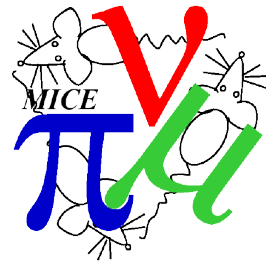
- Redmine goes onto HyperV

Further Thoughts



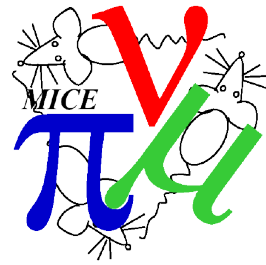
- Issues like: site-wide network outage; site-wide power outage; can not be addressed locally
 - STFC directorate is aware that MICE has been affected by these problems
 - We are not the only ones
 - Solution will not be quick
- MICE can do the best job to protect itself from these problems
 - Redundancy in computing systems
 - Redundancy in wetware

Printer Passwords



- MICE oki printer (R76) passwords were allowed to escape onto google cache
 - Printer server may now be taken offline for security analysis
 - Some bureaucracy
- This should not happen!
 - Please be careful

Networking



- I am aware of networking issues
 - Specifically facilities-users/RADIUS server
- I prioritised the PPD server room issue first