

UCL Computational Resource Allocation Group (CRAG)

MEETING MINUTES

27th January 2012

In Attendance:

- John Brodholt [JB] – (Chair) Earth Sciences
- Eric Fraga [EF] – Chemical Engineering
- Thomas Jones [TJ] – ISD, Research Computing
- Owain Kenway [OK] – ISD, Research Computing
- Ben Waugh [BW] – Physics and Astronomy
- Clare Gryce [CG] – ISD, Research Computing
- David Gregory [DG] – ISD, Computational Biology Research Facilitator

Apologies:

- Ian Eames [IE] – Mechanical Engineering
- Clare Gryce [CG] – ISD, Research Computing
- Elia Stupka [ES] – Cancer Institute
- Nik Kaltsoyannis [NK] – Chemistry
- Andrew Martin [AM] – Structural and Molecular Biology
- Bruno Silva (acting CRAG Secretary) [BCS] – ISD, Research Computing

1. Minutes of 25th November 2011 meeting

The Group approved the Minutes of the November 25th 2011 meeting.

2. Review of current actions

Action list was reviewed and updated with relevant comments (See Actions list below)

3. Research Computing Governance

CG provided a brief presentation on the new governance arrangements for Research Computing, details of which are provided on the Research Computing website at <http://www.ucl.ac.uk/isd/common/research-computing/governance>.

4. Requests for additional resources

Two requests for additional resources had been received for consideration:

a) Peter Harrison (*Bioinformatics and Computational Biology*)

The Group requested further information regarding possible check-pointing and decomposition. DG to follow up with requesting group and advise back (see Action 76 below). Agreed to resolve over email.

b) Serge Guillas (*Statistics – Uncertainty Quantification Pipeline for Climate Models*)

The Group agreed that this request for priority access to Legion for the requested period (10,000 CPU hours during June/July 2012), costed at 0.1 Euro per core hour, should be granted (see Action 77 below).

5. Review of service stats for Nov and Dec

- **Legion**

It was noted that the Epidemiology Consortium has made significant use of Legion during the period. The group requested further information about the relevant projects (see Action 78 below).

The group requested that the stats showing usage by job class 17 - 64 cores are broken down to show usage by 17 – 32 and 33 – 64 cores (see Action 79 below).

The group requested that an email is sent to users reminding them that shorter jobs are given higher priority (see Action 80 below).

The group requested that 'usage per user' graphs be produced to show to effect of the changes to the fairshare implementation made last year (see Action 81 below).

- **Unity**

Further discussion pending implementation of memory usage reporting (see Actions below).

- **Condor**

The group asked whether it would be possible to get a report on total CPU hours used by Condor jobs, as part of the regular Condor report (see Action 82 below).

6. Research Computing user satisfaction survey Nov 11

CG gave a brief presentation on the results of the Research Computing user satisfaction survey, completed last term. 98 completed responses were received (of 197 unique users in preceding six month period). 83% of respondents reported that overall, they were satisfied with the Legion service. The corresponding figure for the Research Computing Support service was 87%. The aspect of the Legion service that scored lowest in terms of satisfaction, was throughput (wait times).

CG advised that the comments received were being analysed by the Research Computing team and that a formal report would be produced in due course.

7. AOB

Eric Fraga reported that he was moving to become Academic Director of UCL's Adelaide campus and therefore needed to resign from the CRAG. The group wished him well in his new role.

Date of next meeting

The next meeting of the group is scheduled for the 24th February 2012 (1-2pm).

*Clare Gryce
Manager, Research Computing Services (ISD)
8th February 2011*

LIST OF CURRENT ACTIONS

Shaded (closed/completed) items will be deleted in the next version.

	Actions	Status	Owner
10	HEP and RC to decouple the running of the middleware from Legion and run this from HEP Central.	<p>IN PROGRESS – meetings are scheduled between IS-RC and HEP</p> <p>(13/05/2011): Meeting to be scheduled.</p> <p>(8/07/2011): There has been progress on the technical side and RC is waiting for feedback from relevant users.</p> <p>(30/09/2011): Meeting to be scheduled.</p> <p>(28/10/2011): IN PROGRESS, HEP to resource manpower.</p> <p>(27/01/2012): IN PROGRESS with HEP</p>	CG/BW
10a	MoU between CRAG/RC and HEP to be agreed.	<p>IN PROGRESS</p> <p>This item depends on completion of item 10</p> <p>(25/11/11) Relevance of MoU to be confirmed.</p> <p>SUPERSEDED BY EVENTS – TO CLOSE</p>	<p>CG/BW</p> <p>CG</p>
56	Scratch space policy to be enforced appropriately, users informed.	<p>(11/03/11): Policies to be enforced after Lustre upgrade as quotas may be used to retrieve usage information quickly.</p> <p>(8/07/2011): Scratch will be deleted entirely by the end of August, leaving some time for users to clear away their data. Policies will be enforced from then on.</p> <p>(30/09/2011): Scratch now deleted, new policy to be agreed – technical development proceeding</p> <p>(28/10/2011): Implementation of agreed policy has started.</p> <p>(25/11/11): Inform users that jobs will be stopped if over quota, programme for this to be written and implemented</p> <p>(27/01/2012): IN PROGRESS. Scripts have been completed and are under test prior to informing users of new policy.</p>	BCS/TJ

67	<p>Provide users with the means to estimate memory usage by their jobs more accurately (on Legion, but also applicable to Unity):</p> <ul style="list-style-type: none"> • Provide User Test Nodes • Offer scripts to users in which allow them to profile their jobs • Inform users regarding availability of these scripts and useful techniques (once user test nodes and scripts are available). 	<p>(8/03/2011) User test nodes are not yet available but this work has been scheduled.</p> <p>(30/09/2011) User test nodes when busy will return message to command line via qrsh, informing the user to “try later”, nodes are used interactively. Jobs can be given instant access if nodes are available. Users are permitted 2 hour sessions via scheduler which can be double via CPU sets. User test nodes are still under development.</p> <p>(28/10/2011): Testing still pending by selected users, to be completed by December 2011.</p> <p>(25.11.11) depends on implementation of User Test Nodes.</p> <p>(27/01/2012): IN PROGRESS. User test nodes have been implemented. This work to be added to monthly programme of ‘small works’ for RC Admin team.</p>	BCS/TJ
70	<p>10/06/2011</p> <p>Investigate potential memory usage statistics and metrics (e.g. used vs. requested) to measure how efficiently users are requesting resources on Legion and Unity.</p>	<p>(8/07/2011) This item has been merged with item 68 Look into CPU utilisation metrics and statistics in conjunction with this. This will both allow reporting to the CRAG and provide users with useful information for correct estimation.</p> <p>(30/09/2011): Metrics have been created. Technical implementation will start once these metrics are reviewed. Re-send metrics for evaluation in next meeting.</p> <p>(28/10/2011): RC to provide proposals and circulate to CRAG mailing lists - Done. Implementation has started.</p> <p>Statistics would be gathered in the following manner: Weekly sampling at least (higher time resolution may be needed for data to be meaningful). Separate statistics for each node class. Statistics done over all users (monitoring on a per user basis may be done for support reasons).</p> <p>(27/01/2012): IN PROGRESS. The RC SysAdmin team is working on obtaining the relevant data and writing this to a database.</p>	BCS

71	Create weekly memory utilization chart for Unity	(28/10/2011): RC to make available end of November 2011. (25.11.11) Not done yet. To be made available in next meeting. (27/01/2012): Duplicate with Action 70 above, to close.	RC
72	28/10/2011 a) Plot CPU utilisation for Legion to include: b) Consortium usage for August & September. c) Total number of hours & % used per user. d) Display "fair share" per user. e) Display "Slow Down" map against % of hours used per user.	Complete Complete (25.11.11) RC to present to present actual "fair share" configurations and parameters, to show effective use of system. (25.11.11) RC to scale statistics for August, September, October (27/01/2012): Actions above all completed, see new Action 75 below.	RC
73	Devise proactive strategy to inform users of the availability of Condor.	(25.11.11) Email consortium leaders and speak to members of the Genomics community (Jacky Pallas perhaps) regarding Condor to move this forward. (27/01/2012): Pending completion of ongoing works to improve usability of Condor service.	BCS
74	25.11.11 GAMS licence	(25.11.11) Discuss GAMS license for Legion (27/01/2012): IN PROGRESS. License model is perpetual, fixed number of users managed via group (not license manager). Chemical Engineering to progress and provide further feedback on requirements.	EF
75	Presentation to CRAG on Fairshare implementation	(27/01/2012): RC Team to give presentation to next CRAG meeting explaining current Legion Fairshare implementation.	CG/TJ

76	Peter Harrison request for additional Unity resource	(27/01/2012): To follow up with requestors regarding additional information about check-pointing and problem decomposition	DG
77	Uncertainty Quantification Pipeline for Climate Models project	(27/01/2012): To set up appropriate priority queue for project (by June 2012)	BCS
78	Epidemiology use of Legion Nov and Dec 2011	(27/01/2012): To provide further information about number of projects using Legion during period.	CG
79	Legion usage 17-64 cores	(27/01/2012): Stats showing usage by job class 17 - 64 cores to be broken down to show usage by 17 – 32 and 33 – 64.	CG
80	Email re priority of short jobs	(27/01/2012): To email users reminder that shorter jobs are given higher	BCS
81	Usage per user graphs – fairshare changes	(27/01/2012): To produce ‘usage per user’ graphs be produced to show to effect of the changes to the fairshare implementation made last year.	OK
82	Condor report – CPU hours used?	(27/01/2012): To look into whether it is possible to get a report on total CPU hours used by Condor jobs, as part of the regular Condor report.	CG